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## A Comprehensive Computer Aided Tool for Evaluating Mid-Level Managers

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# **A Comprehensive Computer Aided Tool for Evaluating Mid-Level Managers**

**Ryan Hankins**

Submitted to the Honors College

at Bowling Green State University in partial fulfillment of the  
requirements for graduation with

UNIVERSITY HONORS Spring, 2017

Dr. Clare Barratt, Department of Psychology, Advisor

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## **Abstract**

This project is a case study for a tool which would test and evaluate users on managerial skills and industrial-organizational psychology concepts. The tool developed during this project is a proto-type for a virtual assessment center which would offer a lower cost alternative to in-person assessment centers. The virtual assessment center evaluates users on process skills and soft skills that have been shown to be associated with successful mid-level managers. The proto-type has a business game to measure process skills and two situational judgment tests to measure two dimensions related to soft skills. To implement the business game, the proto-type uses a deterministic model. This allows the assessment center to be used as a personnel selection tool for organizations. Additionally, independent users are also able to compare themselves against previous results. While further development and validation is necessary before the virtual assessment center can be used, this proto-type demonstrates the relative ease the benefits of an assessment center could be brought to smaller, less revenue heavy organizations by utilizing the power of the web. The tool also allows independent users, who may be current or aspiring mid-level managers, to take an assessment center for personal development.

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## Acknowledgements

This project was, by far, the most audacious learning experience I have undertaken. It could not have been done without the never-ending support of the faculty at Bowling Green State University, the advisors of the Honors College within the university, and the love of family and friends. I would like to thank Dr. Clare Barratt, my primary advisor, who supported me as I explored previously unencountered territory in the world of Psychology. Also, my secondary advisor, Dr. Robert Green, who's philosophies on life, unrelenting work ethic, and broad knowledge helped ease closing the gap in all things related to software development. Additionally, I would like to thank my advisors, Kacee Snyder and Christine Shaal, for their guidance throughout my collegiate career. And, to the person who inspired this project and introduced me to the world of business, Mr. James Zeigler.

Furthermore, I would like to thank Evolution for providing the fruits of its labors – all us lowly creatures of this great planet Earth – with the almighty coffee bean. And, thanks must also be given to those spirited individuals who, perhaps guided by divine providence, first discovered and subsequently enhanced the magical powers of caffeine. Additionally, I would like to dedicate the success of this project to all those great, glorious, and now conquered pizzas and pizza related products. Their sacrifices were the fuel to which my body used to convert caffeine into code.

“pro-gram-mer, noun. 1. An organism that converts caffeine and pizza into software, usually at night.”

- Wise coffee mug

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## **1.0 Introductions**

This project was undertaken and finished at Bowling Green State University in satisfying requirements to graduate from the Honors College. The project itself was spread across two academic semesters. The first semester was spent gathering background knowledge about the underlying concepts and principles of industrial-organizational psychology and managerial theory. The second semester was spent designing, developing, and deploying the project to be submitted for evaluation.

### ***1.1 Purpose***

The Honors Project requirement for graduating with University Honors at Bowling Green State University states that a student must undertake and complete an interdisciplinary project with two, or more, faculty advisors. This project combines the fields of computer science and industrial-organizational psychology. Dr. Robert Green was the expert in the aspects where computer science was involved. Dr. Clare Barratt was the expert for where industrial-organizational psychology was needed. The Honors Project is an opportunity to challenge and showcase the abilities of undergraduate students at Bowling Green State University.

### ***1.2 Goals and Objectives***

The objectives of the project were to develop a tool that could be used as a personnel selection decision for organizations, a training and development tool for mid-level managers, and be a self-assessment tool for independent users. The tool would allow a user to gain insight into their managerial style. Users would also be able to gain insight into

where they are strong or lacking in soft skills – skills used when working with others – and process skills – those skills related to business process management.

Major design goals for the project included that the tool would be virtual and interactive. Interactive, for the purposes of this tool, would mean that the tool would be communicating back to the user through some graphical user interface. These two goals drove nearly all the decisions regarding the architecture, technology, and development focus of the tool. Only those tools, technologies, and systems which supported user interaction on a web based platform, such as a web browser, were considered for the tool.

### ***1.3 Paper Structure***

The paper will first cover the research background of the project. This background will involve the “why” of the project, what was researched, as well as the different research findings that were made. The next section of the paper will provide an overview of the virtual assessment center that was developed. This overview will detail the architecture and technology that the tool was developed on, the software design decisions made to implement the virtual assessment center, and provide a brief example of the virtual assessment center in action using screenshots. The next section will discuss the future improvements that could be made to the tool, highlight unrecognized goals, as well as how the tool can be expanded for other uses. The final sections will provide concluding remarks, references used throughout the paper, and an appendix section for supplemental information about the tool.

## **2.0 Research Background**

The foundation of this project involved combining the two fields of industrial organizational psychology and computer science. The primary focus of the project was to develop a tool capable of providing a test which could measure dimensions – also known as skills or traits – of industrial-organizational psychology and skills common in managerial theory. This tool would be used as a screening tool for organizations in making personnel selection decisions – whether to hire a candidate for a position or not (Society for Industrial, Organizational Psychology, 2003). The tool could also double as a development tool for users both inside and outside of organizations.

Research in the field of industrial-organizational psychology focused on organizational justice. Additional research was done on the techniques and tests used by industrial-organization psychologists to measure persons on various theories and scales. Supporting research was also done on the current theory of mid-level managers in the modern business world. Research in the field of computer science focused on simulation techniques. The focus of this research was to find how different simulation models were implemented by computers, what those models were best used for, and how those models could be applied to any portion of the virtual assessment center.

### ***2.1 Organizational Justice***

Organizational justice is the study of how fairness is perceived by workers in a workplace based on its internal processes, how compelling reasons for decisions are, and how fair outcomes of organization decisions which affect employees are (Greenberg 1990; Citera & Rentsch, 1993; Greenberg, 1993; Colquitt, Conlon, Wesson, Porter, & Ng, 2001).

Organizational justice is simple on the surface and can often be readily demonstrated in quick, low effort examples; however, organizational justice can be difficult to achieve on a consistent basis in the face of internal and external problems, difficult work relationships, and internal assumptions and assumed knowledge between different persons.

Achieving high levels of organizational justice is also made more difficult since perspectives of what is fair readily changes from person to person based on their own experiences and social upbringing. Furthermore, for the same person, what is perceived as fair in some contexts will not be perceived as fair in others. Even when factors, which would help form a perspective of fairness, are the same between people, their own weighting of the importance of different factors may be different from others and lead to different perspectives of what is fair (Colquitt, Conlon, Wesson, Porter, & Ng, 2001).

Perceptions of fairness can be derived from events and changes internal and external to the organization. Hiring and firing of workers, promotions of high achieving individuals, and demotions of unqualified persons are a few examples of internal changes. External changes may include major life changing experiences and changing societal perceptions of fairness.

The categories of organizational justice are procedural justice, distributive justice, and interactional justice – which can be subdivided into informational and interpersonal justice (Greenberg, 1993; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Interactional justice encompasses how justice is defined and measured between two or more persons' exchanges. The subdivision of interpersonal justice relates how kind, polite, respectful, or genuine a person's conduct with another is. The subdivision of informational justice is how fair and adequate a person believes the given reasoning is for justifying a decision that may impact them. Achieving high levels of perceived fairness in both information and interpersonal

justice between supervisor and employee relationships hinge upon the employee trusting their supervisor is being genuine in their actions and decisions (Greenberg, 1993; Citera & Rentsch, 1993). Distributive justice attempts to quantify how fair outcomes are (Citera & Rentsch, 1993; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Lastly, procedural justice is concerned about the level of perceived fairness of processes used to reach decisions that affect employees (Greenberg, 1990; Greenberg, 1993; Lind & Tyler, 1988).

## ***2.2 Role of the Mid-Level Manager***

The mid-level manager has historically been overlooked in their strategic role in helping organizations to grow, develop, and innovate (Clements, 2013; Huy, 2014). How well they manage their subordinates' needs with the directives and desires of upper management play a large part in whether strategic initiatives are successful or not. While the efforts of upper management are important, and their directives are often what set the course for the organization in navigating the future, mid-level managers may hold the real power when steering the organization and keeping on course towards executive goals (Huy, 2014). This can be attributed to mid-level managers having a higher social capital, or respect and admiration, than executive leadership with lower level employees. It can also be that mid-level managers are better able to motivate their employees due to their proximity and direct, often daily, interaction (Huy, 2014).

Mid-Level managers need to exhibit a combination of skills relating to social management, capital/labor management, and business acumen. These skills, which are used when interacting directly with the business, are known as process skills. Skills used when interacting with employees, customers, and other human entities are known as soft skills. This combination of process and soft skills is known as Knowledge, Skills, Abilities,

and Other Characteristics – or more succinctly put, KSAOs (Arthur & Day, 2011; Society for Industrial, Organizational Psychology, 2003).

The correct balance of needed KSAOs is crucial for a successful mid-level manager. While surveys of upper management show that there is a slight preference for higher levels of process skills, soft skills are imperative to team management, team cohesion, and team success (Clements, 2013; Mintzberg, 2014). In the modern sense, and aptly worded, mid-level managers are “communicators, therapists, and entrepreneurs” (Huy, 2014). Mid-level managers in the modern business world are now expected to perform in a more autonomous leadership role by both upper management and the lower level employees that they themselves manage (Clements, 2013).

Furthermore, the balance of KSAOs needed for a successful mid-level manager can also change depending on the needs of the type of work that the mid-level manager would be overseeing (Arthur & Day, 2011). And, adding another layer of complexity, different organizations, while having the same role, may need mid-level managers with different mixtures of KSAOs to be effective in their organization due to culture and workforce differences.

### **2.3 *Assessment Centers***

Assessment centers have long been used for personnel selection decisions by organizations. The assessments are dimensional in nature and focus on KSAO’s relevant to the job role applicants are being assessed on (Arthur & Day, 2011). The KSAO’s themselves are defined by incumbents and subject matter experts of the role being tested. A key point that is highlighted is that the assessment center cannot be too accurate to the role; otherwise, the assessment center would be skewed to advantage those testers who

already worked in a similar role compared to those who are first applying. Common exercises include in-basket exercises, business games, and situational judgement tests, and various other exercises. It is important that, while an assessment center is comprised of multiple exercises, these exercises should not impact others. If there was contamination between exercises, evaluations of those taking the assessment center would become unreliable (Arthur & Day, 2011).

Dimensions identified by assessment centers can also be targeted by development programs (Howland, Rembisz, Wang-Jones, Heise & Brown, 2015). However, it is noted that, for lower level supervisory positions, it is not typically viable to perform development assessment centers (Thornton III & Byham, 1982). This is a monetary decision as it is less expensive to use assessment centers to find qualified candidates. It is often more practical for organizations to find the best “raw resources” rather than produce their own. There are no current estimates of the cost associated with using virtualized assessment centers as a diagnostic and training tool.

## ***2.4 Situational Judgement Tests***

Situational judgement tests are one of the oldest and most validated tools for psychologists (Whelpley, 2014). Improvements have been continuously made to situational judgment tests and are now one of the most consistent and accurate tools for performing dimensional analysis on individuals. The drawbacks of situational judgement tests have traditionally involved concerns with selection bias of those scoring the items, the difference in assumptions of how the items are interpreted, and with faking – testees choosing the response that is believed to be the highest instead of answering honestly. However, these concerns can be mitigated and solved through generally accepted practices and controls (Whelpley, 2014).



Situational judgement tests are composed of presenting testees with a scenario and a certain number of preconfigured responses that they must choose from. The combination of a scenario and their responses is referred to as an item. Each test measures one dimension and there are multiple items per test. Situational judgement tests are often scored using item response theory. The item response theory pairs a person's underlying trait level to an estimate of them endorsing an item (Whelpley, 2014). There is also an expansion to the item response theory called the multivariate item response theory. The multivariate item response theory provides a rating for the stable features of individuals and items that influence responses across dimensions. Both theories utilize Likert Scales which often provide a wrong, partially right, and correct rating system for responses if the number of responses to pick from is greater than or equal to three (Whelpley, 2014).

## **2.5 *In-basket Exercise***

The in-basket process is where those being examined are presented with some information beforehand about a problem or series of problems that an organization is facing (Thornton & Mueller-Hanson, 2004). This information can take the form of mock meeting notes, mock resumes, and mock memos. The exercise is concluded when the person performing in the exercise presents how they would respond based on the information presented. After the proposal, there is then an interview with an examiner to discuss the whys of the person's proposals.

## **2.6 *Business Game***

Business games are a much more involved exercise than the others previously mentioned. Their largest benefit is that they have a higher face validity – the perception that the exercise is accurate in its measurements – and heavily focuses on process skills (Thornton

& Mueller-Hanson, 2004). Business games are at a higher risk than other exercises for contamination. Contamination can be from a multitude of reasons depending if the game is a team based game, has some sort of random component, or is designed to allow testees to have multiple outcomes based on their decisions. Typically, the exercises would include scheduling workers and finding the best schedule to maximize the performance of the business (Thornton & Mueller-Hanson, 2004).

## ***2.7 Simulation Techniques***

There exist two major forms of modeling simulations. The deterministic model is one in which, if the model is run for the same inputs, it will produce the same output (North, 2017). The stochastic model is one in which, for the same inputs, the output may change. This change in the output is based on the introduction of randomness into the stochastic model (North, 2017). The introduction of randomness is due to the desire to avoid expending real world resources on historical analysis. Additionally, it is generally more expensive to respond as an issue unfolds rather than pre-emptively mitigate or prevent an issue. The stochastic model is used for predicting issues and potential, satisfactory responses to those issues. A satisfactory response is one where the goals, or higher priority goals, are met for what is being modeled by the simulation (North, 2017). Deterministic models would be best used for a business game which focuses on identifying qualified candidates and ranking them against each other for personnel selection decisions. Stochastic models would be best used for assessment centers focusing on developing the user. The variability of the model will provide ample opportunity to challenge the user in a multitude of ways.

For both models, agent based simulation can be used to simulate complex human behavior in the workplace (Tinus, 2010). Agent based simulation can be implemented using linear models, neural networks, or simple rule-based models. Linear models are derived from simple functions such as  $F(x) = y$ . Neural networks involve using independent nodes. These nodes can be trained to recognize patterns and determine a response based on the aggregate response of all the nodes in the network. Rule-based models are comprised of simple logic conditions such as “if ‘x’ then ‘y’” statements (North, 2017). The use of different models also help determine whether an agent can be considered a proto-agent or a full agent.

Agents are considered fully fledged agents if they are adaptive, can learn and modify their behaviors, are autonomous, and are heterogeneous (North, 2017). These qualities in the agents are also what determines whether the model is stochastic or deterministic. For deterministic models, proto-agents are used. The proto-agents do not need to be fully aware nor do they need to have the ability to make different decisions based on the same inputs. Similarly, fully-fledged agents would be best for stochastic models so that more outcomes can be predicted for the same inputs.

### **3.0 Mid-Level Manager Virtual Assessment Center**

The tool created is a virtual assessment center. The word virtual means that this assessment center can be accessed and taken from a remote location over a network. The components of the virtual assessment center are displayed via webpages in a user’s web browser. The assessment center itself is comprised of a business game and two situational judgement tests. The business game is used to measure the business acumen of the user. The two situational judgement tests are used to measure two dimensions related to soft

skills. The user will only be allowed to take one assessment center at a time and must finish it before starting a new one.

The business game is played as a deterministic model with proto-agents. The game is a competition between six companies in a virtual world. Each company consists of a director, a manager, a mid-level manager, and five employees underneath the mid-level manager. Every employee in the model is represented as a proto-agent. Each company competes against each other to be either the most productive company, the highest selling company, or both the highest selling and most productive company at the end of each round.

There is a continuous goal throughout the business game where each company must implement a “capital project” for themselves by the end of the game. The “capital project” is advanced by the user if they have their subordinates, or themselves, take time from sales or production to work on the project during each round. Taking time to work on the “capital project” will take time away from completing the goals of the current round.

The game lasts for a total of eight rounds. At the end of the eighth round, the performance of the user and the proto-agents are scored based on the achievement of their organization’s goals and their individual goals for each round. If the “capital project” was implemented by the end of the business game, the user receives an additional score to their overall score.

The user controls the proto-agent of the mid-level manager for a company. They have the same abilities as the other mid-level managers in the business game. At the start of each round, the top level proto-agents, the directors, determine the goals of the company and the workers beneath them. The manager then makes their decisions, setting the goals

of the mid-level manager and other business functions. The user, and the other mid-level managers, must then make decisions regarding the goals of their employees, personal development, or work that they will do during their round. Then, after all the executive employees have made their decisions, the workers also make their decisions regarding what work they wish to do.

Before a round is over, a recap of all the decisions made by the user will be shown. At this recap, the user will have the chance to review the effects of their decisions. If they find their decisions satisfactory, they may end the round and advance the business game. Alternatively, the user can reverse one, or more, of their decisions. If the user does this, they will be taken back to the decision page where they will have the opportunity to make new decisions equal to the number of decisions that they reversed.

At the end of each round, the user then answers five items from one, or both, situational judgement tests. One of the situational judgement tests measure the user on *Transparency*. The dimension *Transparency* measures a user on how well they consistently pick the most open, honest, and direct response. The items for the *Transparency* situational judgement test were derived from knowledge gained while researching informational justice, procedural justice, and management theory. The other situational judgement test finds a measurement for their level of *Instrumental Support*. The dimension *Instrumental Support* is how well a user consistently picks the most helpful, considerate, accommodating, and supportive response. These items were derived from knowledge gained while researching distributive justice, procedural justice, and interactional justice. Scoring is done using a simple Likert Scale of zero, one, and two where two is the best score and zero is no score.

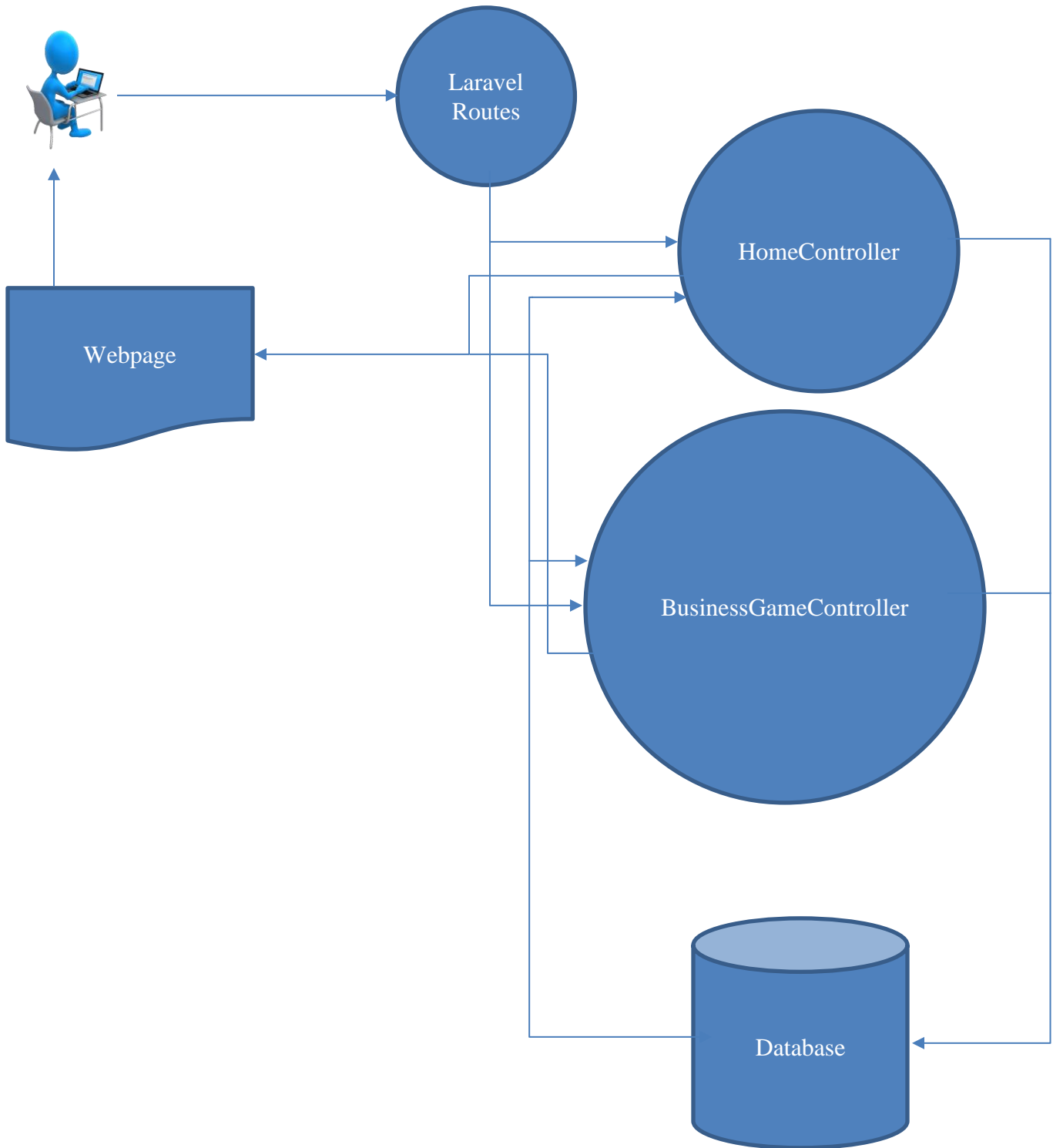
At the end of the business game, all the items for both situational judgement tests will have also been answered. These response scores for each item are then aggregated together to two sums. The two aggregate sums are then divided over the max score possible for each situational judgement test. The resulting division produces a ranking which is then displayed to the user being tested. Additional information is presented, alongside the ranking, to the user regarding their performance on the situational judgement tests and where they could look to improve.

### ***3.1 System Architecture***

Development of the project was done using the LAMP stack (Linux, Apache HTTP Server, MySQL, PHP/Python/Perl). Linux is a free, open source operating system. Apache HTTP Server is another open source software that provides web server functionality. MySQL is a tool used to create and manage relational databases. MySQL was not used to develop the database; however, it is installed and available if there is need of it in the future. PHP, Python, and Perl are programming languages which are heavily used in scripting programs by servers in a network (Beal).

The website was developed on the Laravel framework. Laravel provides the developer with access to many useful tools, abstraction from difficult to implement functionality, as well as a starting shell for their website. The website is unpublished and unavailable for the public to access via the internet. The project can be accessed locally if the LAMP stack and Laravel dependencies have been installed on the machine being used. Alternatively, the project can be installed using virtualization software such as Oracle VM

VirtualBox. Provided is a graphic to illustrate the conceptual view of the project's network response when accessed by another machine.



For the project, SQLite was used to implement the relational database. SQLite is a file based database implementation which is useful for smaller databases (About SQLite). It provides much of the same functionality as other versions of SQL. An open source tool called phpLiteAdmin was used to modify the tables, data fields, and data of the database.

The tool is listed under the MIT license. The MIT license allows a person to freely do with what the wish of any product bearing the license if the license itself is posted and maintained through any changes made to the original product (The MIT License). Please refer to the following chart for all the technologies and versions of those technologies being used.

<b>Technology</b>	<b>Version</b>
<b>Ubuntu Operating System (Linux)</b>	16.04.2
<b>Apache HTTP Server</b>	Apache/2.4.18 (Ubuntu0
<b>SQLite</b>	2.8.17
<b>PHP</b>	7.0.15-ubuntu0.16.04.4
<b>Laravel</b>	5.4
<b>phpLiteAdmin</b>	1.9.7.1
<b>Oracle VM VirtualBox</b>	5.1.10 r112026
<b>G++</b>	5.4.0 20160609

### ***3.2 Software Design***

Attached documentation in the appendix shows the database design and UML diagram for the classes. The following will be an overview of the major code pieces and design decisions made for the virtual assessment center. For the full code, please visit the repository hosted on *GitLab.com*. The link to the repository will be in the appendix.



The Laravel framework's pre-built code handles user registration, login validation, and routing to and from webpages based on the URL. Laravel also provides for disjointed webpage layouts called "views." These "views" can be combined on the server dynamically before returning a static webpage to the user. All the logic required to verify the user's access, ensure proper flow and execution, as well as provide input validation for the business game are in the file named *BusinessGameController.php*. Additionally, there exists several logical constraints on the database to prevent bad writes to the database.

Seed data must be loaded into the database for the business game to function properly. Examples of seed data are names for the organizations, the names for the proto-agents in the game, and the available decisions that can be made by the proto-agents. The user, by registering an account to take the virtual assessment center, also supplies their own name for the proto-agent they will control. The necessary information for the situational judgement tests must be loaded in the database before the start of the business game. This seed data is imported into the database using files with a predetermined structure. phpLiteAdmin was utilized for this process; however, it is not necessary to use this specific tool to accomplish the importing of the seed data.

Several files containing seed data are generated by two C++ programs while other files are manually created with the data manually written inside of the files. The C++ programs that were developed can be compiled using any C++11 compliant compiler. The compiler used in this implementation was the G++ compiler. These programs and the files containing the seed data can be accessed through the code repository at *GitLab.com*.

The business game is represented by several classes. These classes are instantiated into objects by the server when a user makes the necessary request to the business game.

Runtime for these objects is how long it takes for the server to allocate memory for the proto-agents, the time it takes for the proto-agents to make their decisions, and the time it takes for the server to process the decisions made by the user. While the number of proto-agents within a game is over 50, and the server might be processing multiple games at once, PHP is designed to deallocate memory when an object is no longer being referenced or used. The actual memory requirement per proto-agent is trivial and the time it takes to process a round is trivial. For a low-to-medium concurrent user base, bottlenecking of the server is not a concern.

Every person and organization in the business game has a unique ID that is tied back to a unique game ID. This game ID is further tied back to individual users. While the games are available via URL queries, there is parameter checking to prevent un-verified users – visitors who have not logged in – from accessing a verified user’s game. Furthermore, there is additional parameter checking on URLs to prevent verified users from accessing the business games and situational judgement tests of another verified user. This is accomplished using Laravel’s authentication library.

While each person in the business game is a proto-agent, there exists two classes that make up what it means to be a proto-agent. The class named *MidGamePerson* is used to instantiate proto-agents that are in the process of making their decisions for a round. These proto-agents draw their object data from the corresponding *MidGamePeople* table within the database. The class *GamePerson* is used when a historical proto-agent needs to be used. The *GamePeople* table in the database stores the before and after state of each proto-agent for each round of a business game.

This concept of *MidGamePerson* and *GamePerson* is reapplied to the organizations that exist within the game. The class named *GameOrganization* provides before and after states on organizations. The class named *MidGameOrganization* is used to track changes made to an organization during a round. Additionally, the database tables *GameOrganizations* and *MidGameOrganizations* hold the data for classes with the same name.

Lastly, information for the situational judgement tests are stored in the *Scenarios* table. The responses to each item is stored in the *ScenarioResponses* table. Each user has their responses stored inside of the *ScenarioChoices* table. The responses to the situational judgment tests are linked to the unique game ID. Remember that this game ID is tied back to an individual user. Thus, this ensures tracking of which situational judgement tests are tied to which user. A game ID, in this respect, identifies all the components of the assessment center being taken by a user.

After the business game is over and all the items from the situational judgement tests have been answered, the aggregate score for each dimension categorized as a soft skill is totaled from the response scores saved in the *ScenarioChoices* table. This sum is then compared against the seed data stored in the *InstrumentalSupportRankings* and *TransparencyRankings* tables for their respective situational judgement test scores. This information is displayed back to the user, alongside a recap of all the round decisions for each round in the business game.

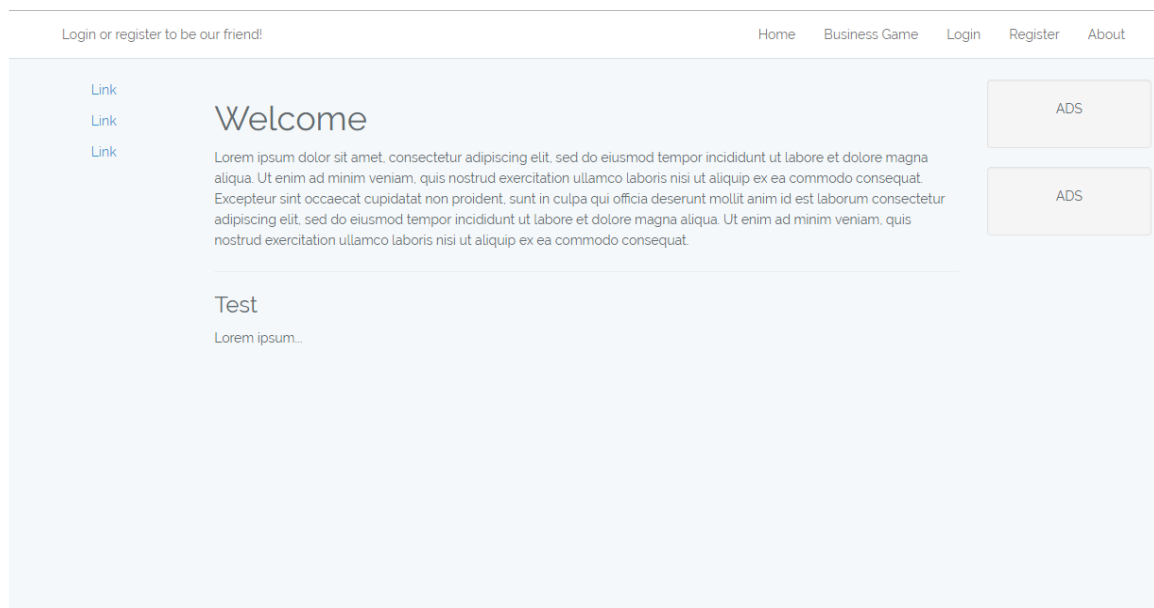
With this, the assessment center has been taken in its entirety. The user may navigate back to their home page and start a new assessment center. Additionally, a link to each of their previously completed assessment centers is placed on their home page

should they wish to see them. The functionality to use store and return previously taken assessment centers can allow an organization to determine whether their employees are gaining any benefit from using the assessment center as a development tool.

### 3.3 *User Walkthrough*

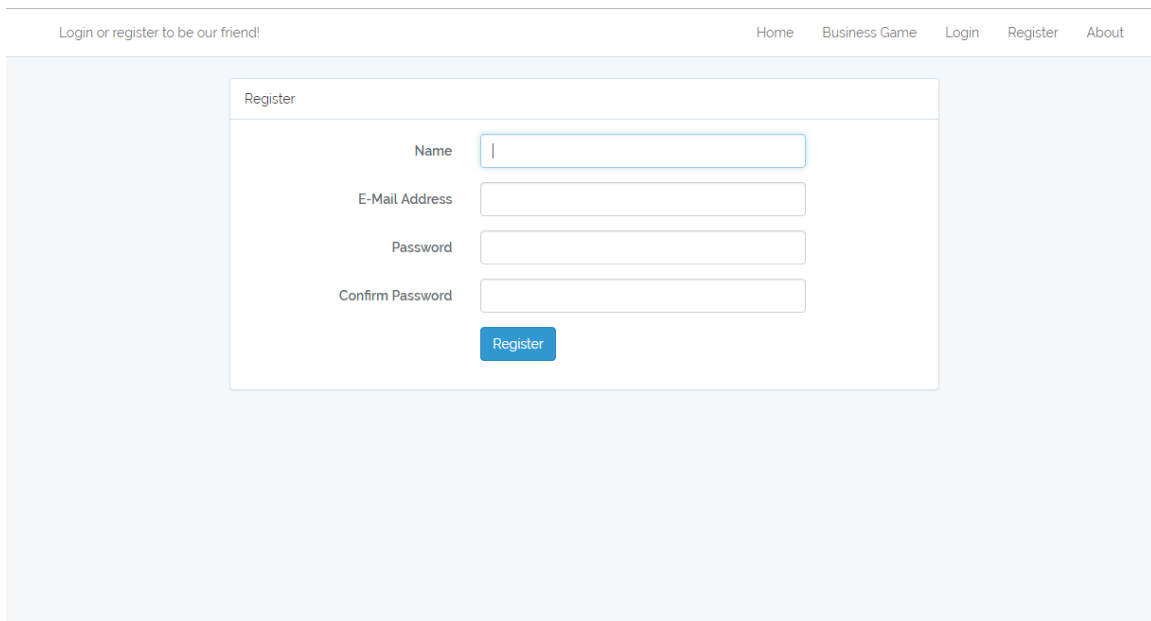
What will follow will be a brief walkthrough of what a user would expect when navigating to the site and taking the assessment center. Showcased will be the process of logging in, completing one round of the business game, showing the recap page for that completed round, as well as answering a portion of the two situational judgement tests. Completion of the other rounds will not be shown. The results page of the assessment center will then be shown. Each picture will be a screenshot of the assessment center. At the top of each screenshot will be a title for the screen shot. Below the screenshot will be a description of what is being shown in the screen shot.

#### 3.3.1 **Welcome Page**



The welcome page, or landing page, for users who are not logged in. The text on the screen is a place holder for information that would be present. The top navigation bar allows the visitor to explore other areas of the website such as the information page of the business game (not shown), the login page, and the registration page.

### 3.3.2 Registration Page



The screenshot shows a registration form titled "Register" within a light blue container. At the top left of the container, it says "Login or register to be our friend!". At the top right, there is a navigation bar with links for "Home", "Business Game", "Login", "Register", and "About". The registration form itself contains four input fields: "Name", "E-Mail Address", "Password", and "Confirm Password". A blue "Register" button is positioned below the "Confirm Password" field.

The page that a visitor would see when first registering to take the virtual assessment center. This page features basic validation that is done server side to prevent multiple users with the same email address.

### 3.3.3 Login Page

Login or register to be our friend! [Home](#) [Business Game](#) [Login](#) [Register](#) [About](#)

Login

E-Mail Address

These credentials do not match our records.

Password

Remember Me

[Login](#) [Forgot Your Password?](#)

This visitor attempted to login into an account, however they entered incorrect login information and was redirected back to the login page.

### 3.3.3 User Home Page

Hello, Sally Sue! [Home](#) [Logout](#)

# The Business Game Page

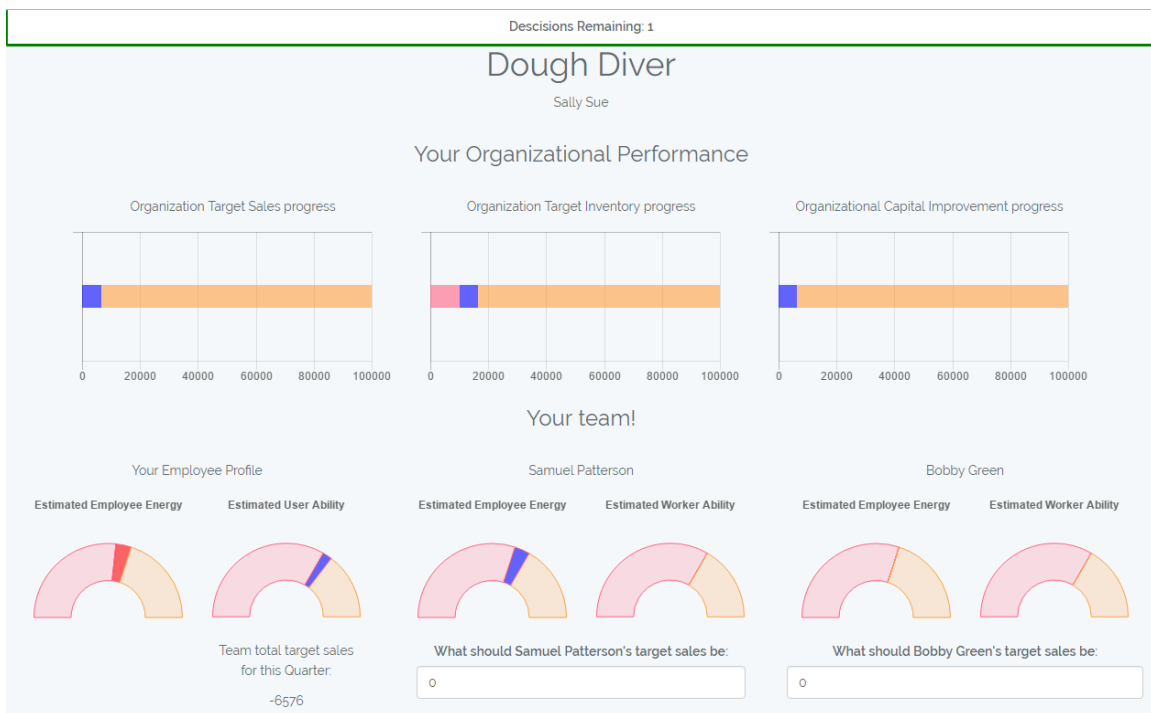
The business game will be the test portion of the Assessment Center.

[Start a new Game](#)  
*You must finish a game before starting a new game*

[Help Documents](#)

The user has been verified and directed to their homepage. Since this is a new user, they do not have any ongoing or previous completed assessment centers. The main content of the page is divided into three columns. An ongoing assessment center would appear in the center column and those that have been finished would appear in the right column. The option to start a new assessment center occupies the left column.

### 3.3.5 Decision Page



This is where most the user's time will be spent. Here, the user has made several decisions affecting the sales, production, and progress of the "capital project." Additionally, the user has made decisions to interact with one of their employees and take some training to improve their own abilities.

### 3.3.6 Round Recap Page

Hello, Sally Sue! Home Logout

#### Round Review

Decision Name	Affected Entity Type	Affected Entity Name	Value Before Decision	Value after Decision	Total Impact	Check/Uncheck
updateEmployeeTargets	Employee Production Target	Annie Coleman	0	1500	1500	<input type="checkbox"/> Check to Undo
	Employee Sales Target	Annie Coleman	0	1500	1500	
workCapital	Organization	Dough Diver	0	6576	6576	<input type="checkbox"/> Check to Undo
workSales	Organization	Dough Diver	0	6492	6492	<input type="checkbox"/> Check to Undo
	Self	Sally Sue	0	-6492	-6492	
workProduction	Organization	Dough Diver	0	6404	6404	<input checked="" type="checkbox"/> Check to Undo
	Self	Sally Sue	0	-6404	-6404	
workProduction	Organization	Dough Diver	6404	12714	6310	<input checked="" type="checkbox"/> Check to Undo
	Self	Sally Sue	-6404	-12714	-6310	
workCapital	Organization	Dough Diver	6576	12785	6209	<input checked="" type="checkbox"/> Check to Undo

Here, the user is given a review of their decisions that were made in the previous round. The user is about to undo three of their decisions regarding production and the progress of the “capital project” for their organization.

### 3.3.7 Situational Judgement Test Page

Hello, Sally Sue! Home Logout

Scenario Prompt

The company is deciding to get rid of some employee benefits. Several employees have stated that they are angry at this. Choose the most reasonable response for the given situation.

- Explain to employees that the benefits cost the company money that it doesn't have.
- Send out a company correspondence detailing what benefits are being lost and how it will affect the employees.
- Hold a meeting with the employees to review the financial process that was determined about which benefits cost the company and which benefits are going to be taking away based on this review process.
- Tell the employees that management is making these decisions and that neither of you have control over the process.



The user has confirmed the end of the previous round and is now answering items for the situational judgement test. They are preparing to answer the third item in this batch of five items.

### 3.3.9 Results Page

Hello, Sally Sue! Home Logout

Business Game Results **SJT Response Results**

Round 1 Results Round 2 Results Round 3 Results Round 4 Results Round 5 Results Round 6 Results Round 7 Results Round 8 Results

#### Information regarding Round 1

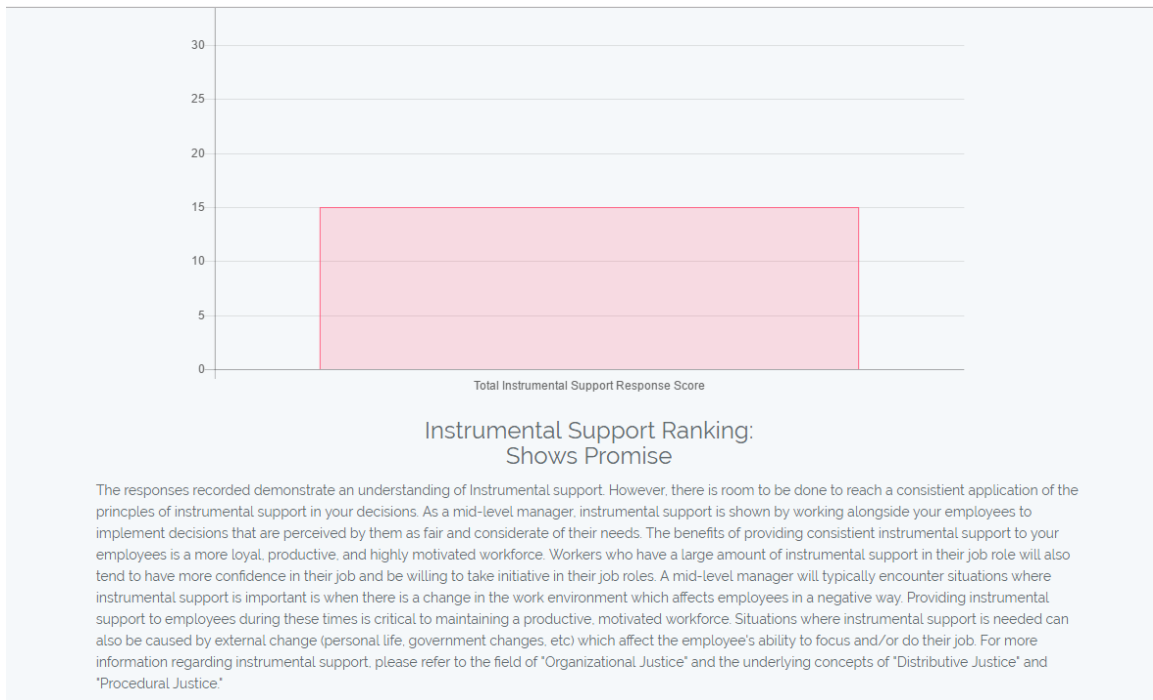
Organization Details **Show Employee**

Beginning of round 1		End of round 1	
Name:	Dough Diver	Name:	Dough Diver
Cash on Hand:	\$150000	Cash on Hand:	\$150000
Inventory in stock:	10000 units	Inventory in stock:	22714 units
Target Sales:	\$100000 in revenue.	Percentage of target sales achieved:	6.49%
Target Production:	100000 units	Percentage of target production achieved:	12.71%
Capital Project Progress:	0% completed.	Capital Project Progress:	12.79% completed.

#### Round Review

Decisions that impacted your organization					
Decision Name	Affected Entity Type	Affected Entity Name	Value Before Decision	Value after Decision	Total Impact
updateEmployeeTargets	Employee Production Target	Annie Coleman	0	1500	1500
	Employee Sales Target	Annie Coleman	0	1500	1500

The user has now finished the assessment center and is looking at the business game results page. Information about the starting and ending values of their organization is being shown. Below that, decisions that affected the organization during that round are also shown.



On a separate tab within the same page, the user is looking at how well they did on their situational judgement tests. The results and ranking shown in this image is their *Instrumental Support* ranking. There is some additional information regarding what their rank means, what effects *Instrumental Support* has on supervisor-worker relationships, and resources they could access to learn more about organizational justice.

## 4.0 Future Improvements

Future improvements would consist of adding an in-basket exercise to the assessment center, adding additional situational judgement tests, and adding a more in-depth economy for the business game. The reasons for doing this would be to expand the number of dimensions that the assessment center could capture and add more face validity to the assessment center itself.

Adding in a stochastic model simulation with fully fledged agents to the business game would also be on the list of improvements. This would be coupled with the situational

judgement test being modified to contaminate the business game based on the item responses of the user being tested. While this would effectively make the virtual assessment center useless as a personnel selection tool, it would expand its capabilities greatly as a developmental tool. These two types of assessment centers could be toggled based on whether the user is being evaluated against others or is taking the assessment center as a personal developmental tool.

A third major improvement would be the addition of a group user. This would allow an organization to make themselves an admin and have access to the scores of applicants whom take the personnel selection version of the assessment center. The capability to see the scores of individual users that have been signed up by an admin would not be granted if the development version is being used. To protect employees from organizations who wish to use this tool to identify employees to fire, the organization would only be able to see whether their users are, as a collective, performing better or worse, as a group, after taking the development version of the assessment center multiple times.

After more dimensions, a more realistic business game, additional situational judgement tests, and an in-basket exercise have been added to the assessment center, the tool would then be ready to move into validation testing. This would involve qualified subject matter experts taking the assessment center and providing critical feedback regarding any changes that would need to be made to any of the exercises. After acceptance by the subject matter experts, it would then need to move into testing and validation with general testers. These general testers would first need to take validated assessment centers with similar dimensions being measured. After doing so, they may take and receive their scores from this assessment center. Statistical analysis of the results produced by the

validated assessment center and the newly developed virtual assessment center would then be done to determine whether the created virtual assessment center is valid for what it is measuring.

Lastly, a myriad of code changes, user interface changes, and security practices would need to be implemented. During the development of this early version, the tool was under no threat of being attacked by malicious entities since it was not accessible by the outside world. Once the virtual assessment center moves into a live, publicly accessible environment, the tool would have to be prepared for malicious intrusions. This would involve additional overhead on validating user input, parameter matching in the URL field, and extra care being taken in making the underlying PHP code type safe.

## **5.0 Conclusions**

What has been developed for this project is merely a proto-type to what it could be. The core foundation of the assessment center is in place and can easily be expanded upon. Furthermore, when compared to other virtual assessment centers that have been developed (please see Howland, Rembisz, Wang-Jones, Heise & Brown, 2015, for a description of their virtual assessment center), it would have less overhead, less time commitment, and potentially more interest to organizations as a personnel selection tool. The lesser amount of time spent interacting with the virtual assessment center may limit the number of dimensions and breadth of analysis that could be performed on the users being tested. However, it would lower the cost, increase marketability, and be more inclusive of those organizations who do not have the time or resources to commit to a fully developed personnel selection tool and developmental tool.

Assessment centers, and recently tested virtual assessment centers, are still largely unavailable to be used by small organizations and the general population due to their low exposure and prohibitively high expenditures (Thornton & Mueller-Hanson, 2004). This tool could change that. It could open the benefits of assessment centers to low revenue/low profit margin organizations. It could allow for individuals to train themselves on their own and develop themselves to be more effective mid-level managers. Additional changes to the tool would take, if one developer works part-time, as has been done throughout the course of the project, anywhere between 6 months to a year.

The benefits of a fully-fledged virtual assessment center in this format would be plentiful. Unlocking skillsets, refining existing skills, and helping to provide for a more educated workforce is what this tool could accomplish. The effects of this would allow organizations to be more competitive against each other and on the international arena.

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## 7.0 Appendix

### 7.1 Class Designs

#### GameDecisions

```
+commitDecisions(gameId : int, decisionMaker : int,
decisionName : string, oldValue : int, newValue : int,
affectedPersonId : int, = null, affectedOrgId : int = null)
:int
+getGameHistory(gamePersonId : int) : Array
+getGameDecisions(gamePersonId : int, round : int):
Array
+undoDecision(changedId : int) :void
```

#### GamePerson

```
-name : string
-actionPoints : int
-abilityLevel : int
-emotionalLevel : int
-maxAbilityLevel : int
-maxEmotionalLevel : int
-targetSales : int
-targetProduction : int
-targetConsumption : int
-gamePersonId : int
-employingGameOrganizationId : int
-round: int
-subordinates : Array<int>

+getName() : string
+getActionPoints() : int
+getAbilityLevel() : int
+getEmotionalLevel() : int
+getMaxAbilityLevel() : int
+getMaxEmotionalLevel() : int
+getTargetSales() : int
+getTargetProduction() : int
+getTargetConsumption() : int
+getGamePersonId() : int
+getEmpOrg() : int
+getSubordinates() : Array<int>
+getRound(): int
+GamePerson(gamePersonId : int, roundNumber : int =
null) : GamePerson
+instantiateGamePerson(gameOrgId : int = -15, personId :
int = -1) : int
+addRelationship(person1 : int, person2 : int,
person1Opinion : int = 85, person2Opinion : int = 85) :
void
+getGamePeople(gameOrgs : Array<int>, round : int) :
Array<GamePerson>
+advanceToNewRound(gamePersonId : int, round : int) :
void
+getPlayerIdFromGame(gameId : int) : int
```

#### GameOrganization

```
-gameOrganizationId : int
-workforce : Array<GamePerson>
-name : string
-currentInventory : int
-currentCash : int
-targetSales : int
-targetProduction : int
-targetCapital : int
-currentSales : int
-currentProduction : int
-currentCapital : int
-round : int

+getName() : string
+getRound() : int
+getCurrentInventory() : int
+gettCurrentCash() : int
+getCurrentSales() : int
+getCurrentProduction() : int
+getCurrentCapital() : int
+getTargetSales() : int
+getTargetProduction() : int
+getTargetCapital() : int
+getGameOrgId() : int
+getPosition(title : string, offset : int = -1) : gamePerson
+GameOrganization(gameOrganizationId : int,
roundNumber : int = null, withWorkers : string = null) :
GameOrganization
+createOrgForGame(gameId : int, orgId : int, personId :
int = -1) : void
+getGameOrgs(gameId : int, roundNumber : int = null) :
Collection
+getGameOrgHistory(orgId : int, round : int) : Collection
+advanceToNewRound(orgId : int, round : int) : void
+createWorkForce(gameOrgId : int, userPersonId : int = -
1) : void
+addDirector(gameOrganizaationId : int, directorId : int) :
void
+addManager(directorId : int, managerId : int) : void
+addMidManager(managerId : int, midManagerId : int) :
void
+addWorker(midManagerId : int, workerId : int) : void
+addTeam(gameOrgId : int, midManagerId : int,
numWorkers : int = 5) : void
+addName(orgId : int, gameOrgId : int) : void
```

## MidGamePerson

-name : string  
-actionPoints : int  
-abilityLevel : int  
-emotionalLevel : int  
-maxAbilityLevel : int  
-maxEmotionalLevel : int  
-targetSales : int  
-targetProduction : int  
-targetConsumption : int  
-gamePersonId : int  
-employingGameOrganizationId : int  
-subordinates : Array<int>

+getName() : string  
+getActionPoints() : int  
+getAbilityLevel() : int  
+getEmotionalLevel() : int  
+getMaxAbilityLevel() : int  
+getMaxEmotionalLevel() : int  
+getTargetSales() : int  
+getTargetProduction() : int  
+getTargetConsumption() : int  
+getGamePersonId() : int  
+getEmpOrg() : int  
+getSubordinates() : Array<int>  
+rollbackEmotionalLevel(v : int) : void  
+rollbackAbilityLevel(v : int) : void  
+rollbackProduction(v : int) : void  
+rollbackSales(v : int) : void  
+rollbackActionPoints(v : int) : void  
+MidGamePerson(gamePersonId : int) : MidGamePerson  
+instantiateGamePerson(personId : int) : void  
+makeDecision(decision : string = null, parameters : Array<mixed>) : string  
-commitGamePerson() : void  
-commitChanges() : void  
+advanceToNewRound(gamePersonId : int, round : int) : void  
+getPlayerIdFromGame(gameId : int) : int  
-setTargetProduction() : void  
-setTargetSales() : void  
-workProduction() : void  
-workSales() : void  
-increaseEmotionalLevel(value : int = -10) : void  
-increaseAbilityLevel() : void

## Scenario

-score : int  
-responseId : int  
- response : string

+Response(scenarioId : int, response : int) : Response  
+getResponse() : string  
+getScore() : int  
+getResponseId() : int

## MidGameOrganization

-gameOrganizationId : int  
-workforce : Array<gamePerson>  
-name : string  
-currentInventory : int  
-currentCash : int  
-targetSales : int  
-targetProduction : int  
-targetCapital : int  
-currentSales : int  
-currentProduction : int  
-currentCapital : int

+getName() : string  
+getCurrentInventory() : int  
+getCurrentCash() : int  
+getCurrentSales() : int  
+getCurrentProduction() : int  
+getCurrentCapital() : int  
+getTargetSales() : int  
+getTargetProduction() : int  
+getTargetCapital() : int  
+getGameOrgId() : int  
+getPosition(title : string, offset : int = -1) : gamePerson  
+MidGameOrganization(gameOrganizationId : int, withWorkers : string = null) : MidGameOrganization  
+instantiateGameOrg(id : int) : void  
+getGameOrgs(gameId : int) : Collection  
-commitGameOrganization() : void  
+setCurrentSales() : int  
+setCurrentProduction() : int  
+setCurrentCapital() : int  
+setTargetSales() : int  
+setTargetProduction() : int  
+setTargetCapital() : int

## Scenario

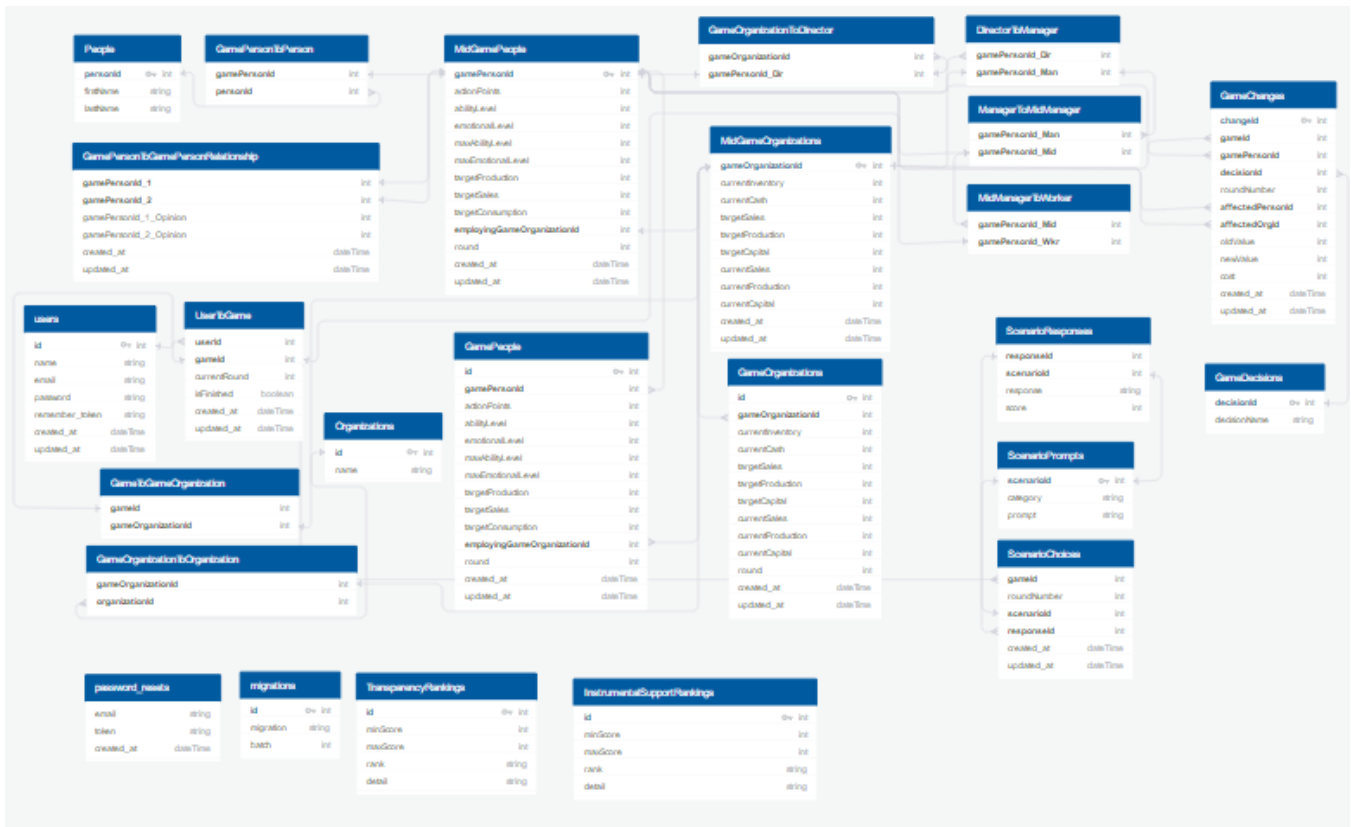
-scenarioId : int  
-scenarioCategory : string  
-scenarioPrompt : string  
-responses : Array<Response>

+Scenario(scenarioId : int) : Scenario  
+getScenarios(gameId : int, roundNumber : int) : Array<Scenario>  
+answerQuestion(gameId : int, roundNumber : int, scenarioId : int, responseId : int) : Array<Scenario>  
+getAggregateScoreOfGame(gameId : int) : Array<mixed>  
+getTransparencyRank(score : int) : string  
+getInstrumentalSupportRank(score : int) : string  
+getScenarioId() : int  
+getScenarioCategory() : string  
+getScenarioPrompt() : string  
+getResponse() : Array<Response>

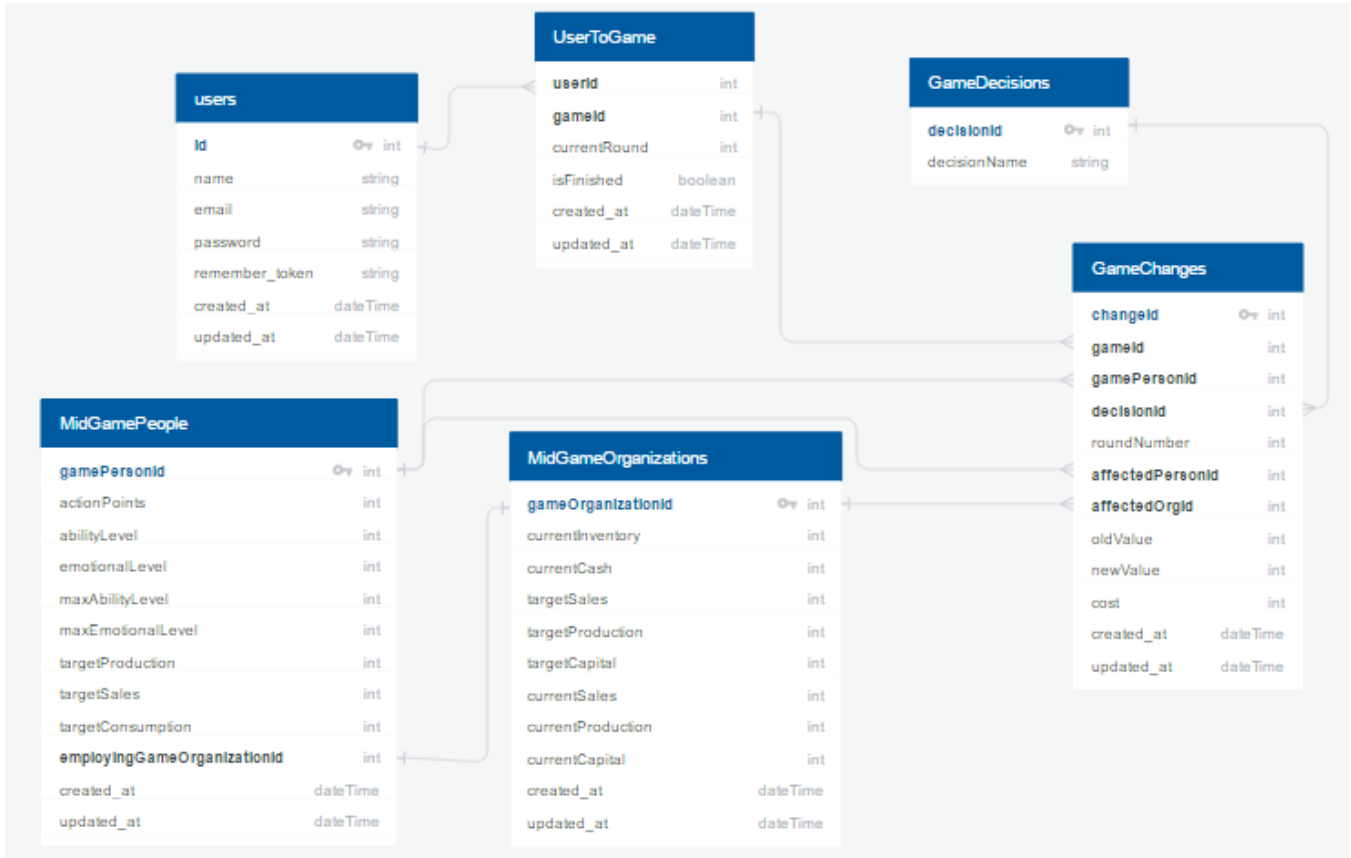
## 7.2 Database Overview

Database ERA diagrams created using *quickdatabasediagrams.com*.

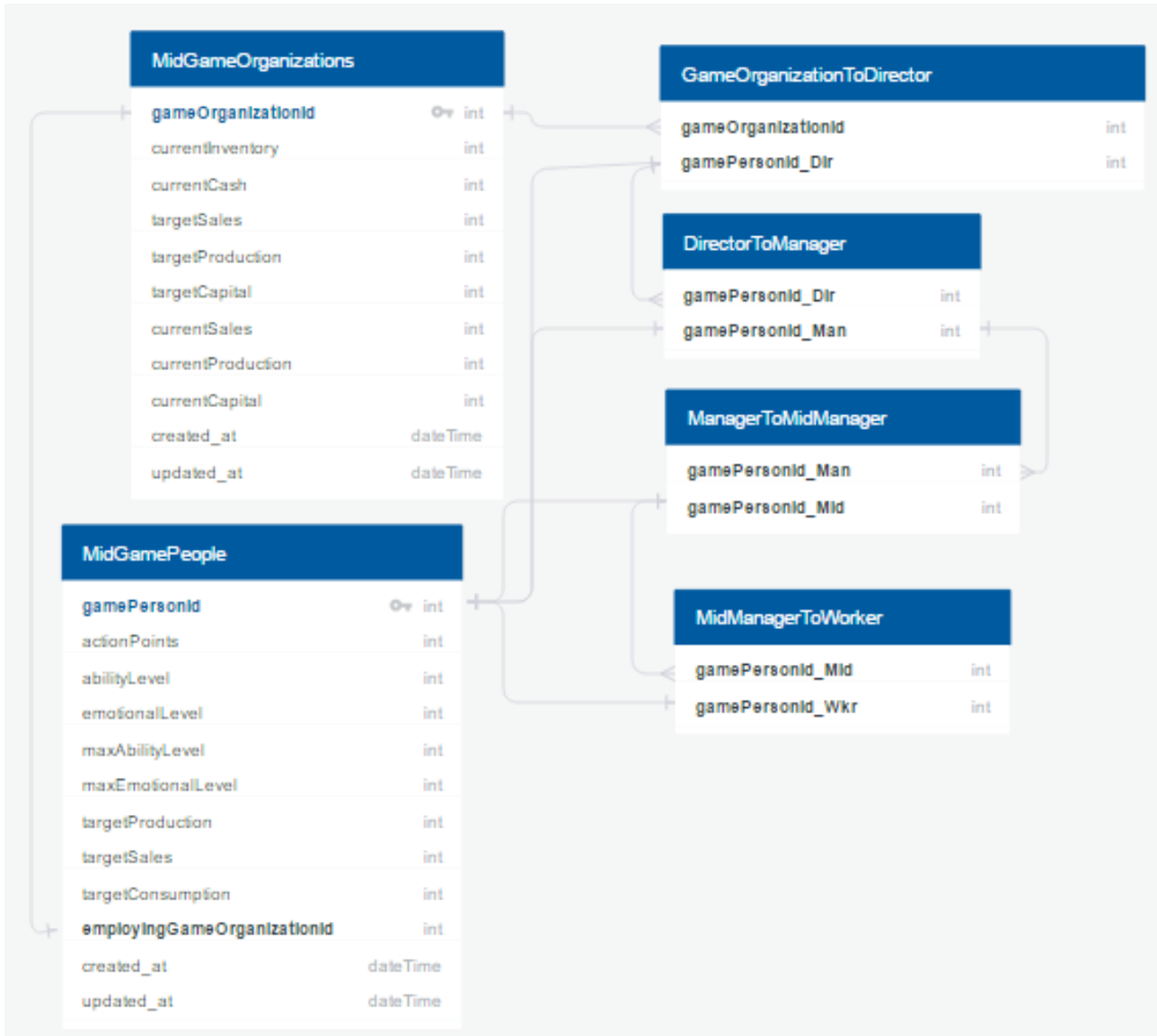
### 7.2.1 All database tables and their relationships



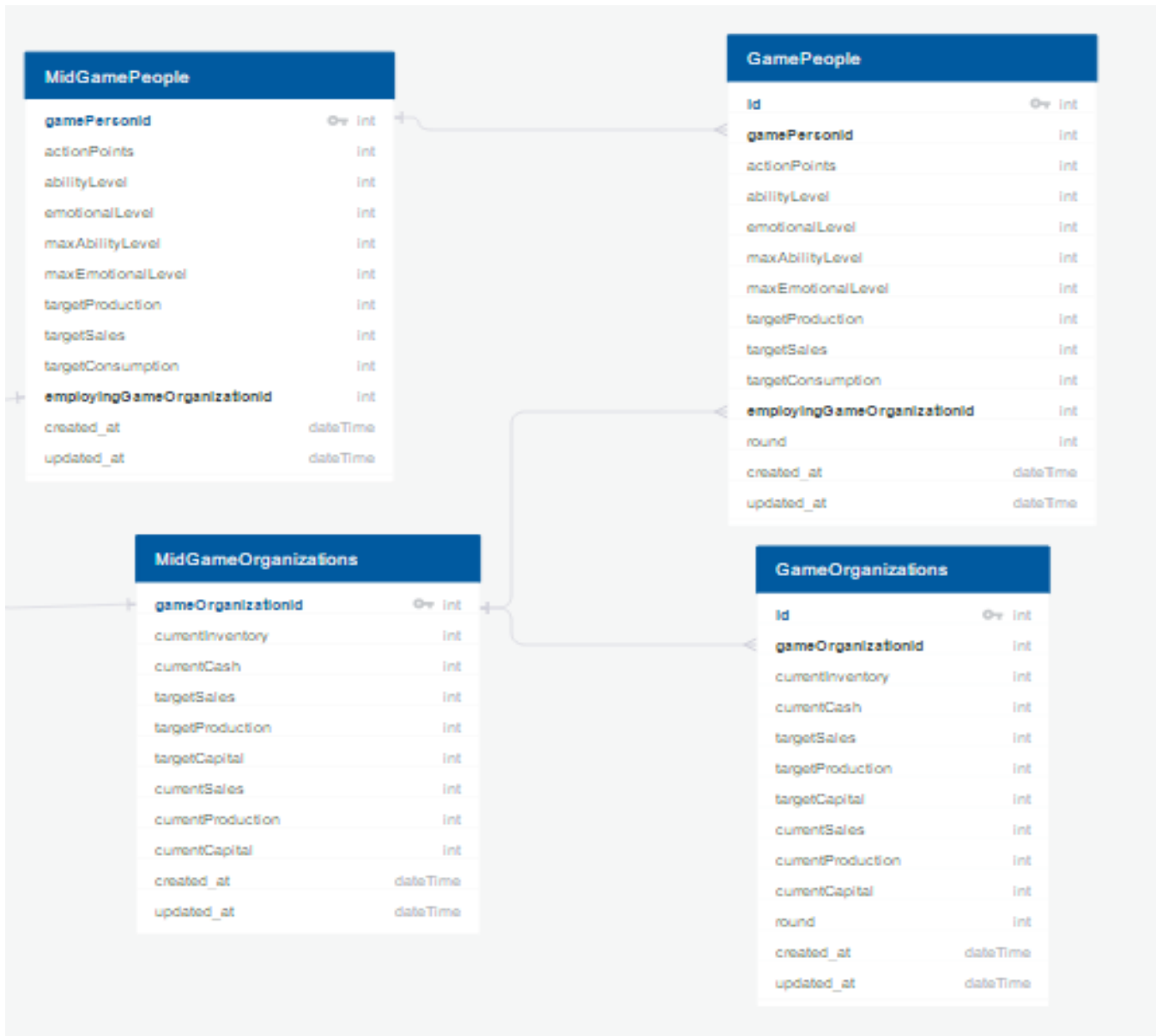
## 7.2.2 GameChanges table and its relationships



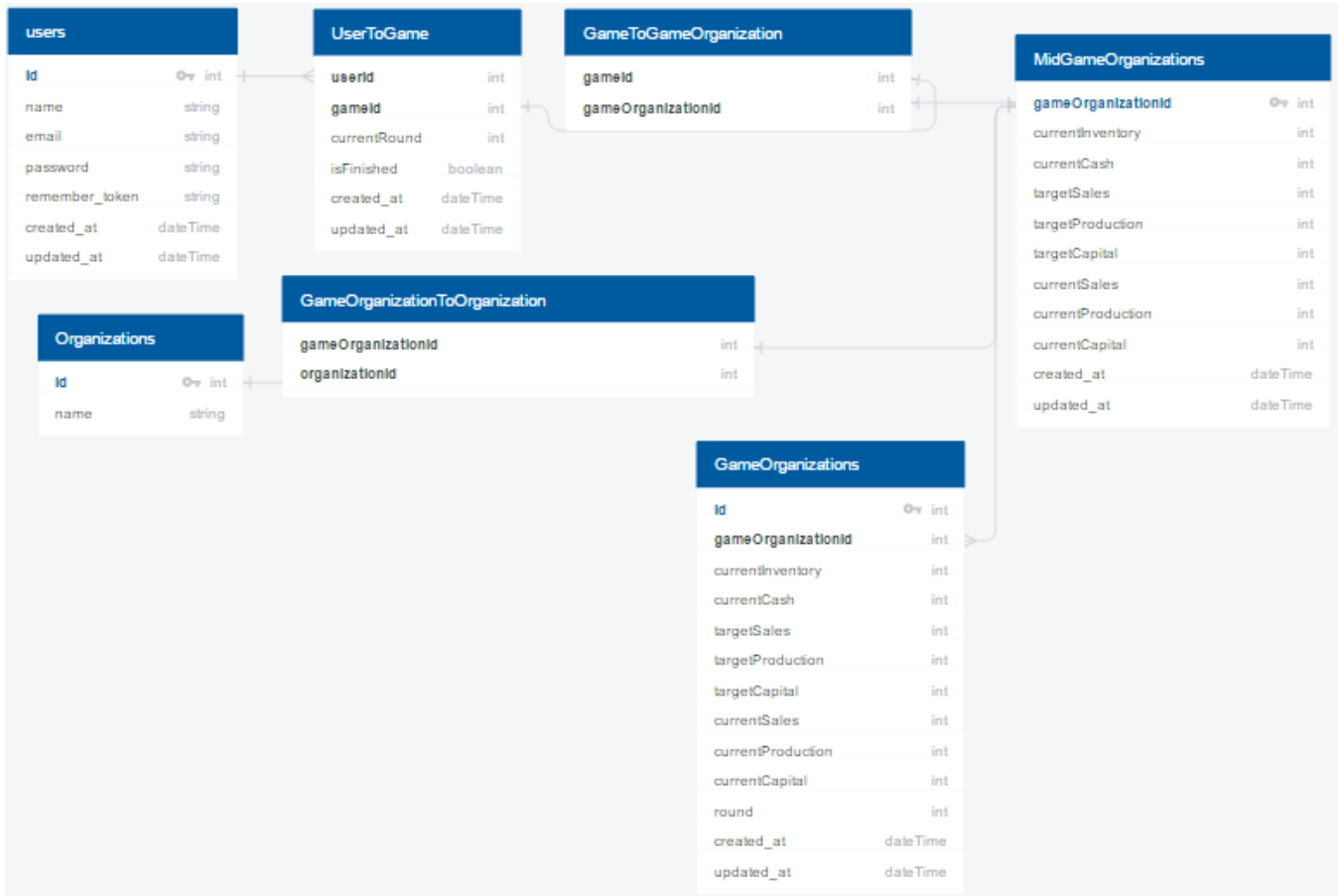
### 7.2.3 Organization workforce hierarchy



## 7.2.4 Relationship of Mid-Game and Historic Entities



## 7.2.5 Relationship between Users and their Business Games



## 7.2.6 Non-relationship dependent tables

### InstrumentalSupportRankings

id	int
minScore	int
maxScore	int
rank	string
detail	string

### password\_resets

email	string
token	string
created_at	dateTime

### TransparencyRankings

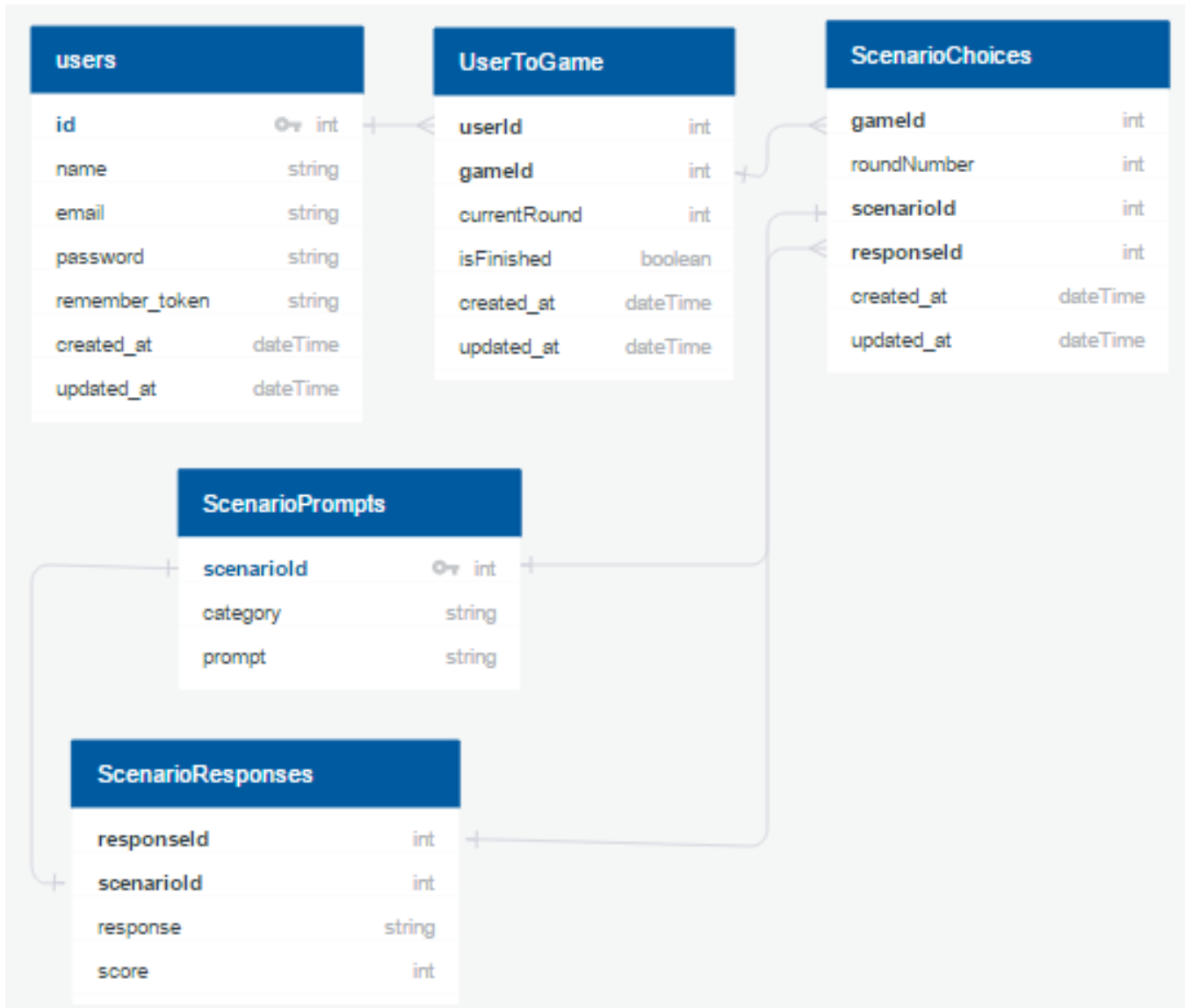
id	int
minScore	int
maxScore	int
rank	string
detail	string

### migrations

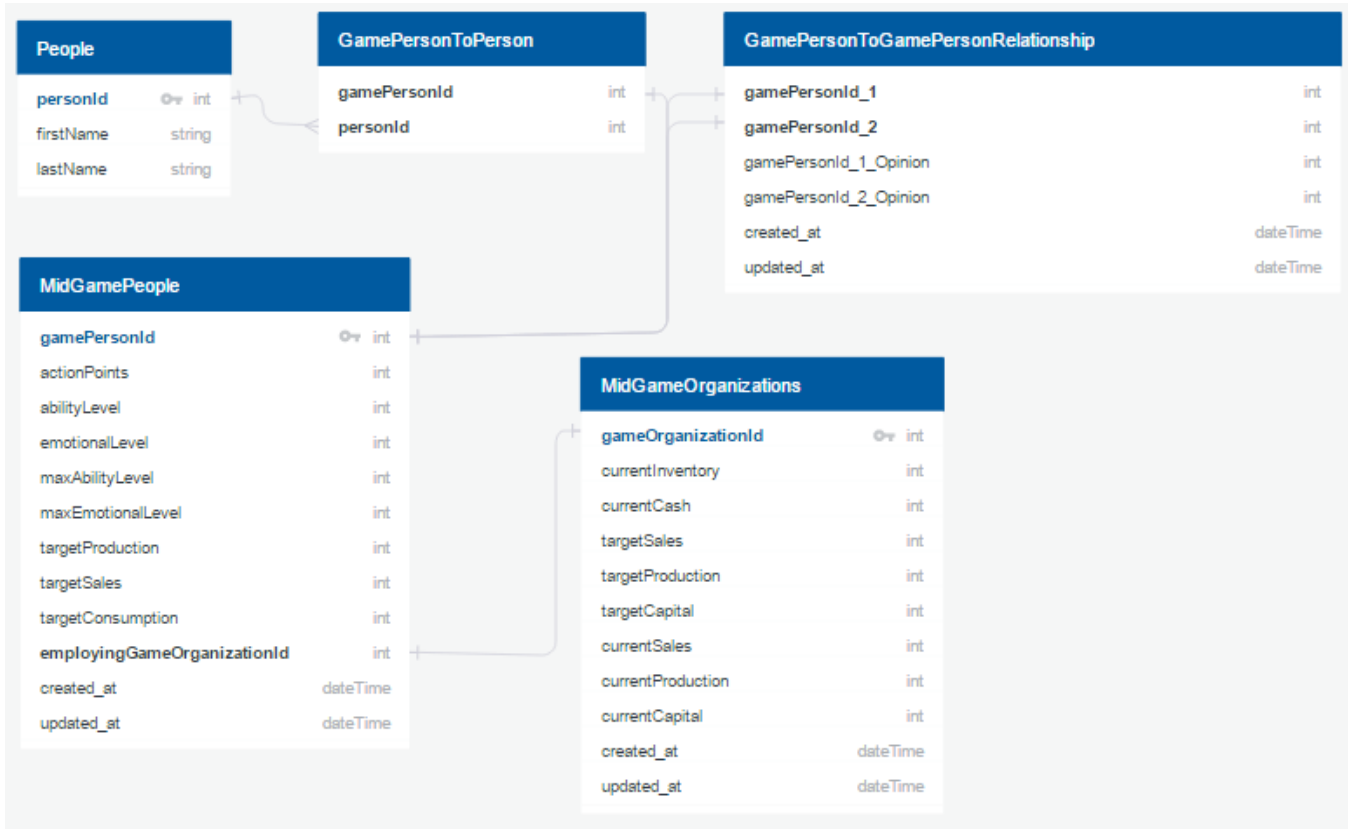
id	int
migration	string
batch	int



## 7.2.7 Situational Judgement Tests



## 7.2.8 Game Person Relationship



### 7.3 *Additional Code*

Due to the length of the application code – nearly 6 thousand lines of code-, all application code is hosted separately on GitLab.com Code for the classes, data generation, and controllers for the website can be found at the following link:

<https://gitlab.com/rhankin/honorsproject>

Classes can be found under the `/app` directory. Controllers may be found in the `/app/Http/Controllers` directory. Additional display components for the website can be found in the `/resources/views` directory. Routing information can be found under the `/routes` directory. For additional questions regarding the system architecture, software design, or code clarification, please email [rhankin@bgsu.edu](mailto:rhankin@bgsu.edu).

## **7.4 *Situational Judgment Tests***

The following is the two situational judgment tests that were developed, with the assistance of Dr. Barratt, for the virtual assessment center. Listed is the category, then the scenarios for the item, and then the 4 item responses. Inside of the brackets is a number corresponding to the score for that response. These items have not been validated and peer reviewed.

### **7.4.1 Instrumental Support**

---

Category: Instrumental Support

An employee of yours has come to you in confidence that they are having difficulty learning the new technologies of the job. They feel that this has led to them underperforming compared to others who have been able to adapt better.

A: Let the employee know that they need to accept the new technology and adapt to it.

[0]

B: Tell the employee that if they come up with another way to accomplish their work tasks, then you would permit them to use their way. [1]

C: Sign the employee up for a company supplied training program. [1]

D: Have the employee switch back to using the old processes for their job role. Connect the employee with training resources so that they can transition to using the new technology. [2]

---

Category: Instrumental support

News of another project setback was released and two employees got into yelling match in the hallway accusing each other of being the reason for the setback. Your company policy has rules defining employee conduct with each other. Both employees broke this policy by engaging in a yelling match.

A: Have the employees disciplined equally according to the company policy. [0]

B: Intervene between the employees and discuss moving them to different projects. [1]

C: Sit the employees down and talk to them about their actions and stress levels. Write them up for the incident but have them list several improvements that they both could make towards each other. [2]

D: Speak to the employees about relocating their work deadline to accommodate the number of setbacks they have had and to release some of the pressure they are under. [1]

---

Category: Instrumental Support

Several employees have taken over the common relax area and have made others to feel like they are not welcome.

A: Ask the employees to speak with their peers to resolve their differences. [0]

B: Speak to the employees directly and mention that they may have unintentionally monopolized the room from other employees. [1]

C: send out an email reiterating that the break room is a public area and everyone has a right to use it. [1]

D: Gather all the employees in the common relax area and work together a set a ground rules for fair use for all employees. [2]

---

Category: Instrumental Support

Two employees were recently caught stealing company property from a third employee. The two employees who committed the theft were terminated and the third employee was denied replacement for the stolen company property. The third employee feels like this was an excuse for them to lose use of company property.

A: Tell the third employee that it was their responsibility to secure the loaned company property but they can attempt to file a claim through work comp. [1]

B: Apologize to the employee but reiterate that the company does not have the ability to replace the property. [0]

C: Speak with the employee and offer your apologies about the situation. Provide a separate back up device until they are able get a replacement of their own.

D: Work with management to represent your employee about getting a replacement device. [2]

---

Category: Instrumental Support

A recent audit has shown that one of your employees has been stealing small amounts of money. When confronted about the theft, the employee said that they were denied a gas stipend to make their commute to work easier. They were simply taking what they felt was rightfully theirs so they could make it to work.

A: Forgive the employees offense but punish them by taking the money they stole from their pay. Let them know that you will take some time to see if you might be able to find a way to offer them more opportunity to make more money. [1]

B: Apologize for the employee's situation. Look to see if there is another employee that they could carpool with to reach work. [1]

C: Tell the employee that their actions is harming the company even more than before since there wasn't extra cash to provide them with a gas stipend when they requested one. [0]

D: Speak with management about the situation. Ask if there might be a way to institute a gas stipend or help the employee as they, outside of this incident, have been one of your best employees in terms of consistency and work ethic. [2]



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Category: Instrumental Support

You recently found out that an employee has not been clocking out for their lunch breaks. When confronted, the employee said that they don't take lunch breaks because they need all the money they can make.

A: Let the employee know that they are breaking both law and company policy by not taking their break and they must take their break. [0]

B: Tell the employee that you understand their concerns about money, however they are endangering the company legally due to laws. This can be a discussion to be had later but for now they must follow the law and take their break. [1]

C: Speak with the employee about their work assignments and any available business need that they might be able to fill. [2]

D: Apologize about the situation they are in but explain that you must enforce policy and reprimand them for not taking their lunch breaks. [1]

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Category: Instrumental Support

An employee was using a custom solution for a business process that had many shortcuts and guiding details that they used frequently. A vendor provided solution was recently bought and will be put in place, eliminating their custom solution. The employee is asking you not to do this because they spent a large amount of time perfecting their solution and that a large amount of their process knowledge will be lost if their solution is replaced.

A: Ask the employee if they might be able to transition to the new system if you had an IT professional sit down with them and provide a full tutorial of the software. [1]

B: Explain to the employee that the custom solution they had was only able to be maintained by them. The vendor solution will allow everyone a fair opportunity to share the workload in the business process. [0]

C: Sit down with the consultants and ask if there might be a way to integrate the work that was done by your employee. [1]

D: Provide the employee time to learn the new software and ask that the vendor provide customization tools for the employee to integrate their knowledge of the process with the generic solution of the vendor. [2]

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Category: Instrumental Support

The office refrigerator has recently caused a series of conflicts as members are fighting for limited space within the refrigerator.

A: Ask the employees if they would be willing to sacrifice a bit of their pay to have a second refrigerator bought for them to use. [2]

B: Explain to the employees that the conflict over the refrigerator is petty and that you will remove the refrigerator if it becomes too much. [0]

C: Explain to the employees that the refrigerator is a first come, first get basis and that they should arrive earlier if they wish to store their lunch. [1]

D: Have the refrigerator locked and provide a limited number of keys to access the refrigerator. Employees may take a key when they store their lunch, and keep it for themselves throughout the day. [1]

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Category: Instrumental Support

An employee's child has recently started school and they must be able to pick up their child from school, however they do not think they could risk losing any hours as money is tight.

A: give the employee a raise which would make them break even in the before and after income when their hours get cut. [2]

B: Try and find some way for the employee to work remotely so that they can take care of their kid's school needs. [1]

C: Explain to the employee that you cannot favor them over other employees and apologize about not being able to help. [0]

D: Ask management if they might be able to have a baby-sitting fund established for employees who have children and need them to be watched after school. [1]

---

Category: Instrumental Support

Your company is facing a legal battle over the products that your team produces. Several of your team members have felt implicated by internal and external legal persons.

A: Remind the employees that it is best to not discuss legal matters in the workplace and to let the company handle the court case. [0]

B: Let the employees know that it is a class lawsuit and that none of the employees are being targeted by the prosecution. It is best that they cooperate fully with both sides of the court. [1]

C: Arrange contact information for the company's lawyers to be given to your employees. Explain to the employees that you will stand with them during the court proceedings. [2]

D: Reach out to the management and ask them to release a statement of support for the employees to revitalize their spirit. [1]

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Category: Instrumental Support

The company IT department recently deleted the data from one of your employee's personal cell phones after worrying that the employee may have lost their phone. They made the decision in the efforts to protect the company data on the phone. The employee agreed that this may have been one of the consequences that could happen with having their work information tied to their personal device

A: Speak to the employee and let them know that you are sorry for the mistake and let them know you will try and convince management to provide a replacement device since IT did make the decision before reaching out to them. [2]

B: Apologize to the employee about what happened to their device but remind them that unfortunately that was one of the risks with associating their personal device with their work. [0]

C: Have the IT department extend their apologies to the employee about the device as it is their fault that the employee lost their device. [1]

D: Let the employee know that you will attempt to accommodate their work requirements until they either have a new workflow set up or their device has been replaced. [1]

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Category: Instrumental Support

Management is changing the method of pay to new employees from an hourly position to a salary position. Many employees are worried that they may not have the opportunity to be fairly compensated due to the change and inadequate methods to record how much time they spend doing their job.

A: Let the employees know that having the job be an hourly job will provide an opportunity for them to make what they work and so is fairer. [0]

B: Let the employees know that you will be watching the transition to the new system of time keeping to make sure that there is no loss of pay for any employee. [1]

C: Meet with the employees and discuss how they think would be the best way for them to keep track of their hours and how that might be best implemented with current resources. [1]

D: Speak with management and ask them if they have considered all available methods of time reporting for employees. Also, request that employees have the opportunity to pilot both sides systems of pay to demonstrate any differences in what they are being paid and how much work they are doing for the company. [2]

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Category: Instrumental Support

You have just recently come into your position as a mid-level manager. One of your employees wants to know if you would be willing to let them take some educational courses at the expense of the company. The previous manager would never let them because they said that there was no need for them to learn new skills in their role.

A: Explain to the employee that since you are new to your position, you do not believe that you would have the necessary pull to get something like that done. [0]

B: Explain to the employee that you encourage them to learn new skills and become a better employee, however those skills need to have a business need for the company before they could get reimbursed. [1]

C: Explain to the employee that the last manager was probably right in that there needs to be a business need for you to support their learning initiatives using company resources however you do have some old educational resources that the company acquired previously that they could use. [1]

D: Use some of your personal discretionary budget to help finance the employee taking the educational courses. [2]



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Category: Instrumental Support

An employee has been telling their child to walk to their workplace from school. The child comes into the workplace and is inside the office until the employee goes home. The child has been distracting to all the employees at times, and while they enjoy the interaction, sometimes the child can be a bit intrusive.

A: Ask the employee if the child could go somewhere else such as a family friend or a baby sitter. [0]

B: Explain to the employee that you have no problems with the child walking to their place of work, however the child needs to stay outside and away from the rest of the employees lest they continue to be a distraction. [1]

C: Ask the employee if they would be willing to come in a bit earlier so that they can leave work earlier and properly pick up their kid from school and take them home. [1]

D: Pool some money together and buy the child a new toy to play with on the stipulation that they stay in the employee break room. [2]

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Category: Instrumental Support

You've noticed that an employee regularly waits up to 30 minutes for the public transportation bus to arrive so that they can take the bus home. Winter is coming up and from what you remember last year, you don't think they have very much in the way of heavy clothing.

A: Ask the employee if they are prepared for winter or if they might be able to find some other way to get home during winter. [0]

B: Find another employee that leaves at the same time as them and suggest that they offer them a ride home during the winter. [1]

C: Speak to management to see if there might be anything that could be done for the employee with regards to them having reliable transportation. [1]

D: Speak to the employee if they would be willing to have a different schedule which would match yours. This would allow you to give them a ride home so that they don't wait on the bus during the winter. [2]

---

Category: Instrumental Support

An employee was recently hospitalized. They wish to still work remotely from the hospital, however their productivity will be severely diminished and they might prove to be more of a detriment to the company's goals for the time being.

A: Tell the employee that their job is to get better as soon as possible. Their job will still be there for them when they get out of the hospital. If they do so wish, they can do small, individual work related tasks for things that they may have fallen behind on. [2]

B: Let the employee do menial tasks for the team remotely while they get better. [1]

C: Speak to the employee and wish them well in their recovery but tell them that you do not want them working for the time being. [1]

D: Have the team sign a card wishing the employee a speedy recovery and that they get out of the hospital soon. [0]

---

Category: Instrumental Support

An employee mentioned to you that they have felt left out by another peer in the workplace. They think that their peer may not like them and is purposefully leaving them out:

A: Ask the employee if they would like you to sit down with both and facilitate a conversation between the two. [2]

B: Let the employee know that you will speak with their peer and remind them to be inclusive of everyone. [1]

C: Tell the employee that you cannot intervene unless they have taken steps to address the issue themselves. [1]

D: Tell the employee that they need to handle this on their own as you don't have time for this. [0]

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Category: Instrumental Support

One of your employees had an argument with an important business client over the business deals.

A: Punish the employee for acting out of line with the business client. [0]

B: Ask the employee what happened that lead to the argument. Listen to their story and attempt to minimize the likelihood of the same circumstances occurring. [1]

C: Meet with the employee and ask them how they are doing and if the client had treated them wrongly. [1]

D: Bring the employee into your office and discuss with them in confidence how the argument occurred and how they would like their relationship with the client to be going forward. [2]

---

Category: Instrumental Support

An employee has been showing up for their shift late continuously. They finish their work tasks on time.

- A. Write the employee up for not arriving on time. [0]
- B. Speak with the employee about their showing up late and offer to work with them to find a new schedule. [1]
- C. Meet with the employee and ask them for their reason for showing up late. Find an appropriate punishment for what they say. [1]
- D. Meet with the employee and speak with them about their lateness. Explain that there will be consequences for being late but you want to work with them to see if you can provide an easier schedule for them to maintain. [2]

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Category: Instrumental Support

Employee evaluations are going to be sent to employees soon. One of your employees did not do well on their evaluations.

A: Provide the evaluation to the employee and let them know that you would like to see them perform better on the next evaluation. [0]

B: Meet with the employee and discuss where they are deficient in their evaluation and what they should target most to improve on. [1]

C: Ask the employee how they feel about their evaluation and if there is anything that they might have to explain portions of their evaluation that are lower than expected. [1]

D: Review the performance metrics with the employee and discuss with them what they might need to improve their performance rating. [2]

## 7.4.2 Transparency

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Category: Transparency

During an annual performance review of the team, 3 members were selected for pay increases. Others believe that they do not deserve these pay raises and that the process was unfair.

A: Let the employee know that there was a limited number of raises that could be offered and they were not able to get one because of this. [1]

B: Let the employees know that the pay increases were subject to a review. [1]

C: Explain the pay increase was subject to the available funds and employee performance rankings. [2]

D: Remind the employees that they should not be discussing nor using the pay of others against each other. [0]



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Category: Transparency

Management has decided to implement reduced wages for everyone for a period of time to help with business costs.

A: Post a bulletin in public areas notifying employees that their pay will be reduced. [0]

B: Hold a meeting during work hours to explain that the company has been facing lowered revenues and this will allow the company to avoid layoffs until business picks back up. Provide printouts showing an employee's new expected income based on their current working hours. [2]

C: Hold a meeting to review how the wage decrease will impact their paychecks after the pay reduction is implemented. [1]

D: Ask management to address the workers to announce the pay decrease and how it will affect the company going forward. [1]

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Category: Transparency

There was a recent training opportunity for employees to take part in. One employee was not selected to take part in the training opportunity and wants to know why they weren't allowed to attend.

A: Ask them to speak with the training organizations to get an answer. [1]

B: Contact the training program organizers and ask them to speak with your employee about why they were not selected. [2]

C: Explain to the employee that spots for the training was limited. [1]

D: Let the employee that there will be new training opportunities for them within the company and that they will have a chance to participate in those, too. [0]

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Category: Transparency

An employee feels that the project they are currently working on is morally wrong.

A: Let the employee know that the projects they are working on had to go through an approval process. [1]

B: Review the project requirements with the employee to confirm their understanding of the project. [1]

C: Work with the employee to review the business need of the project and their role inside of the project in the grander scope. [2]

D: Speak with the employee and reassure them that the project has the best intentions in mind with respect to the company and its customers. [0]

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Category: Transparency

Your team had a very successful year and helped grow the company more than any other business unit. Management has decided that, instead of rewarding your team with a monetary bonus, that they would use the money to invest in other company projects. Your team has voiced, collectively, that they feel used by the company.

A: Mention to the employees that they work under management and that they must trust managements judgment in deciding what is best for the company. [0]

B: Highlight the success that your team had and explain that your team's success is only a part of the picture. The company is a group effort of all teams and success must be distributed for the good of the company. [1]

C: Speak with management about their decision to forego any reward for your team's effort. [1]

D: Call a team meeting and invite a manager to come and speak at the meeting to congratulate your team for their work. Explain to the manager that the employees are looking for reasoning behind their feelings of betrayal. [2]

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Category: Transparency

A customer has a business request of you which is outside your normal business scope. While you are able to fulfill the request, management has forbidden you from doing so, saying that it is not the responsibility to fulfill that request.

A: Let the customer know that you are unable to help because of internal company policy. [1]

B: Let the customer know that you cannot, unfortunately, fulfill their business request at this time. [0]

C: Inform the customer that you wish you could help them directly however your business capacity is restricting you from doing so. [1]

D: Inform the customer that you are not responsible or capable for handling the type of requests that they are making. Refer them to another business unit which is designed to handle their request. [2]

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Category: Transparency

An employee was promised compensation for business expenses on a recent trip that they did for the company. After reviewing the receipts, the company decided to only compensate a portion of the expenses due to the nature of some of the purchases. Management has decided to deduct the difference from their pay. The employee feels wronged that the company has gone back on their promise and is threatening legal consultation.

A: Tell the employee, that while the company did go back on their word, it still reserves the right to do with their money what they like. [1]

B: Let the employee know that it is unfortunate that the company went back on its word but its decision is final. [0]

C: Explain to the employee that they were using company money and there were unreasonable purchases on the card at the expense of the company which it they do not feel obligated to pay for. [2]

D: Remind the employee that the company reserves the right to review all the purchases that they made and determine whether they are reasonable or not. [1]

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Category: Transparency

The employees are participating in a new, companywide training program. After completing this training, they take an open-ended questionnaire which will be used to evaluate whether they are successfully trained. Management wants your opinion on the training process.

A: Let management know that a new training program will elevate some of the deficiencies that your team has. This method will help in determining whether they are trained or not without endangering business operations. [0]

B: Let management know that there needs to be something more beyond a final evaluation which the employees can see and understand. [1]

C: Explain to management that an open-ended questionnaire is not something you feel will adequately reinforce the training. They should do a live demonstration of what they learned from the training. [1]

D: Congratulate management on their efforts but explain that you believe the training program is unnecessary and unfulfilled in its current setup. Your team's skills are already well vetted and you believe that this would be redundant waste of resources and the questionnaire won't do well to cement training concepts. [2]

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Category: Transparency

Several of your team members will need to be on call to support the new business model that the company is implementing. Management wants you to build a schedule for your team members and report back to them as soon as you can.

A: Have a lottery raffle to determine the scheduling order for the employees. [1]

B: Inform the employees of the new requirements. Apologize about the potential upheaval it will cause. Ask them to hand in their preferred hours so you can create a schedule for the team. [1]

C: Look at everyone's schedule and develop a comprehensive schedule before releasing it to the employees. Let the employees make swaps and switches amongst themselves until they reach a set schedule or the deadline for you to submit the schedule is up. [0]

D: Bring everyone together and explain that the business is changing, and while it may negatively impact the moral of the workers, everyone will be on the on-call rotation and will work together to make it easier on each other to share the load. Have everyone take turns picking times that they would wish to be on call in a round robin format. [2]



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Category: Transparency

Your team is looking to upgrade some of your production systems to a new vendor. However, management has decided to go with an alternative vendor than the one that you and your team wanted. Many see the alternate vendor product as cumbersome and unwieldy. Management noted that the alternate vendor has more features and better support services.

A: Explain to your team that you will all collectively have to work through this together.

Do a combined business analysis on both vendor products as a team. [2]

B: Have your employees submit a collective statement to pass on to management in the hopes of changing their minds. [0]

C: Meet with your employees to read through the alternate vendor documentation of their product and focus on why management decided they were a better choice. [1]

D: Discuss with your employees about how best to adopt the alternate vendor's product and if there is any way to emulate the old vendor's product. [1]

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Category: Transparency

One of your employees was frustrated by their recent evaluation. They are confused about several of the marks that were against them and some of the vagueness of the feedback form.

A: Ask them for their suggestions at how the form could be improved [0]

B: Schedule a meeting with them to review their feedback and see if you can clear up any misinterpretations of the form [1]

C: Explain to the employee that the form is a catch all general form and that the vagueness is intended so that they can reflect and discover their own deficiencies [1]

D: Contact the evaluator of the form and ask that they redo the feedback form they submitted to provide a much clearer response [2]

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Category: Transparency

A business client is speaking out front inquiring about recent shortcomings on a joint venture.

A: Meet with the client outside and inform them that the shortcomings are temporary and that everything else is on track [0]

B: Meet with the client briefly and gather what shortcomings they are interested in and reschedule for a later date. [2]

C: Ask the client if they would be willing to wait while you go over the books and refresh your memory about what might be the deficiency [1]

D: Apologize to the client about the recent shortcomings. Explain that the fault is your own with a few recent business setbacks. Emphasize that you are still on track to complete your side of the project. [1]

---

Category: Transparency

You have an opportunity to give out bonuses to a limited number of employees.

A: Do a random raffle in front of the employees to determine who gets the bonuses [1]

B: Have the employees nominate each other for who should get the raises [2]

C: Give out the bonuses to the employees you believe deserve the raise [1]

D: Request that management handle awarding the bonuses to prevent conflict [0]

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Category: Transparency

You have started implementing new monitoring techniques to track your employee's productivity levels as well as aggregate certain costs together. This will hopefully allow you to make better business decisions with regards to your team. Your employees are apprehensive about the new system and feel that management may use it to impose layoffs.

A: Explain to the employees that the data you are collecting is for your management information only and that upper management does not know about your efforts. [1]

B: Show the employees that you are aggregating the data together for release to upper management and that individual results will not be reported. You wish to provide a clearer picture of the business and not to impose a witch-hunt. [1]

C: Apologize to the employees but let them know that their actions on the job have always been subject to reporting and that this is nothing that should surprise them. [0]

D: Explain to the employees that it is not your intention to provide individual reports to management and that you will not entreat management to request that information. At some level that information will be stored and you will attempt to use it to the best of your ability to balance the needs of the business and team. However, if management requests the data, you will give it up. [2]

---

Category: Transparency

A major redistribution of labor is occurring in the company and employees will be shifted around between departments and teams. Employees are nervous about their role in the company, job security, and what their new positions may be.

A: Inform the employees that their new positions will be ready for them when management has made their decisions. [1]

B: Apologize to the employees for the chaos and that their new appointments when be made public shortly. [1]

C: Have the employees fill out a request form for what new position they would be interested in. [0]

D: Explain to the employees that management is working to determine the needs of the business and where people with the skills can be placed and who may be able to be retrained internally. Apologize as this will take some time. [2]

---

Category: Transparency

The company is implementing a new tier based pay grade in which employees can graduate up the scale based on seniority and position.

A: Post the new pay grades and related information used to justify the pay grades throughout employee frequented locations. Also, send them the information to their personal work emails and address boxes. [2]

B: Request that more information be provided about how the pay grade levels were decided upon. [1]

C: Have a meeting management to discuss the justification for pay levels based on previous employee wages. [0]

D: Speak to the employees and ask them if they consider the pay grade fair to their old system. Let them ask any questions they might have. [1]

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Category: Transparency

The employees have been asking for an update on a new benefits initiative. Management had tried investigating increasing benefits but have failed to remain committed to it. Management had identified a few benefits which they could provide, however they have not released any of their findings since their investigation is technically still on going.

A: Call a meeting with your employees and share the details of management's investigation. Highlight that some benefits were discovered however none are in the process of being implemented because the investigation has stalled out. [2]

B: Tell your employees that you know the investigation is still ongoing with management. [1]

C: Ask management to share an update about the investigation into the new employee benefits. [0]

D: Let your employees know that there were some benefits that have been found but you aren't sure what their status is beyond that. [1]



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Category: Transparency

You overhear some office gossip while taking your lunch. An employee has been telling others that a recent new hire was only hired to meet an HR quota. You remembered the name as you were part of the committee that screened applicants for that role.

A: Explain to the employee that you are not allowed from talking about other candidates.

[1]

B: Meet with the employee and explain to them that the process used limits any potential favoritism towards any candidate. [1]

C: Meet with the employee and explain that you cannot talk about the hiring details of any however you are open to talking about the hiring process. [2]

D: Interrupt the employee and explain that office gossip like this does not do well with building team camaraderie. [0]

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Category: Transparency

The company is deciding to get rid of some employee benefits. Several employees have stated that they are angry at this.

A: Explain to employees that the benefits cost the company money that it doesn't have.

[1]

B: Send out a company correspondence detailing what benefits are being lost and how it will affect the employees. [1]

C: Hold a meeting with the employees to review the financial process that was determined about which benefits cost the company and which benefits are going to be taking away based on this review process. [2]

D: Tell the employees that management is making these decisions and that neither of you have control over the process. [0]

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Category: Transparency

A fellow manager asked if you could handle the exit interview for an employee who is being laid off. They do not think it would be wise if they were the ones to handle the interview since they were the direct supervisor of the employee.

A: Meet with the employee and explain that the company's decision to lay them off was driven by money needs. [2]

B: Explain to the employee that they are being laid off because of company mandate. [1]

C: Inform the employee that they will be getting laid off in the future as the company consolidates itself. [1]

D: Prepare a termination letter to be handed to the employee on the day of their lay off.

[0]