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# GSU Event Portal

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## **ABSTRACT**

This project provides an event ticket buying service for the registered members of the service. This project will be engineered by a three-member team that will create the website, document the project, and define the constraints of the project. The website that will be developed will display current and future events given in major cities throughout the United States. Each city will have venues that the website will provide tickets for. The project will center on entertainment events. Entertainment events are defined as sporting, such as baseball, basketball, football and hockey, concerts and movies.

The project is intended to provide registered members first choice of entertainment tickets. Non-registered guests are unable to browse the website. The sponsor of the entertainment events is given a venue of distributing tickets of their events.

The project will be developed using HTML, CSS, jQuery, and .Net (C#). The application will aim to fulfil the above mentioned features, along with specific backend functions such as administrator access and database manipulation.

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## ***1 Project Description***

This project consists of services for consumers who are interested in buying tickets for entertainment purposes, (i.e., Sports, Movies, and Concerts). These tickets can be purchased all at one time, online at an affordable/competitive rate. This website will allow consumers to register and become members. Once a member, the consumer has privileges to create events of their own. We also have an Administrator backend site where we as admins/employees are able to monitor who logs in and what tickets are being purchased (this is one way of knowing what our BIG sellers are and if there is need for changes).

This website will have a simple flow and should be very easy to navigate. The creativity of this site will allow for users to get to other links as well as get information needed for each event offered. The way the site is structured helps with browsing specific venues, cities, and events without incident. There will be room for future enhancements as this site takes off and expands. There will be more on expansions throughout this document.

### ***1.1 Competitive Information***

This project, in comparison to other ticket vendors (i.e., Ticket Master, StubHub, & Eventbrite) will offer competitive rates, student discounts, and loyal customer incentives. This seems to be one market advantage that will be offered by GSU Event Portal and will hopefully help grow our business where we can expand nationally. No other vendor has programs as such, so we will be the first to offer these capabilities/features. We have narrowed our project to focus on the United State only and this alone is a disadvantage. This is only temporary. Below are samples of a few of our current competition.



### ***1.2 Relationship to Other Applications/Projects***

N/A

### ***1.3 Assumptions and Dependencies***

The payment part of the site is assumed to be implemented.

#### ***1.4 Future Enhancements***

The future of this project is to expand to various countries and venues for a broader audience. There will be continuous updates, software and website enhancements, and more options besides the current entertainment listed. The future expansion will grant discounted packages offered through our Loyal Customer and our Refer a Friend Programs. We will look to adding Google Maps to the site, Software, and functional enhancements.

#### ***1.5 Definitions and Acronyms***

##### ***Abbreviations***

Following are the abbreviations that have been used in the document:

- GSU – Governors State University
- 3NF – Third Normal Form
- C# - ASP.Net (C Sharp)
- IP – Internet Protocol
- DNS – Domain Name Server
- HTML – Hyper Text Markup Language
- Admin – Administrator
- CSS – Cascading Style Sheets

## **2 *Project Technical Description***

This project can be understood as an ecommerce application, where in a trade is performed digitally. Here, the project will maintain an event portal similar to online portals like “ticket master” where people can purchase passes and tickets for various events around their city.

The user must be able to traverse the site with ease, the design should be flat and easy on the eye. It should be easy to read. A user would have to register to avail of the site’s service. Registered users must be protected, sensitive information such as login and credit card information must be encrypted.

The database must be normalized to the third form. This allows for the database to be updated or edited easily. It will be protected by administrators, each of which will follow a hierarchy of priority when maintaining and updating the database. A fail safe must be created, thus there will be two copies of the database running on two separate machines. This will be utilized for fault tolerance, and big database changes.

## Database Schema

Event Table	
PK	ID
	StartTime
	EndTime
	StartDate
	EndDate
	Event Cost
FK	Event Address_ID
	<u>ImgURL</u>

Event Address Table	
PK	ID
	Line1
	Line2
FK	<u>City_ID</u>
FK	State_ID
	<u>Zip_Code</u>

Membership Address Table	
PK	ID
	Line 1
	Line 2
FK	<u>City_ID</u>
FK	State_ID
	<u>Zip_Code</u>

Member Table	
PK	ID
	Fname
	Lname
FK	Address_ID
	Email

Transaction Table	
PK	ID
FK	<u>Member_ID</u>
FK	Event_ID
	Date
	Amount



## ***2.1 Application Architecture***

The application can be simply broken down into the back and front end, where the back end is the database, and the front end is the sites user interface.

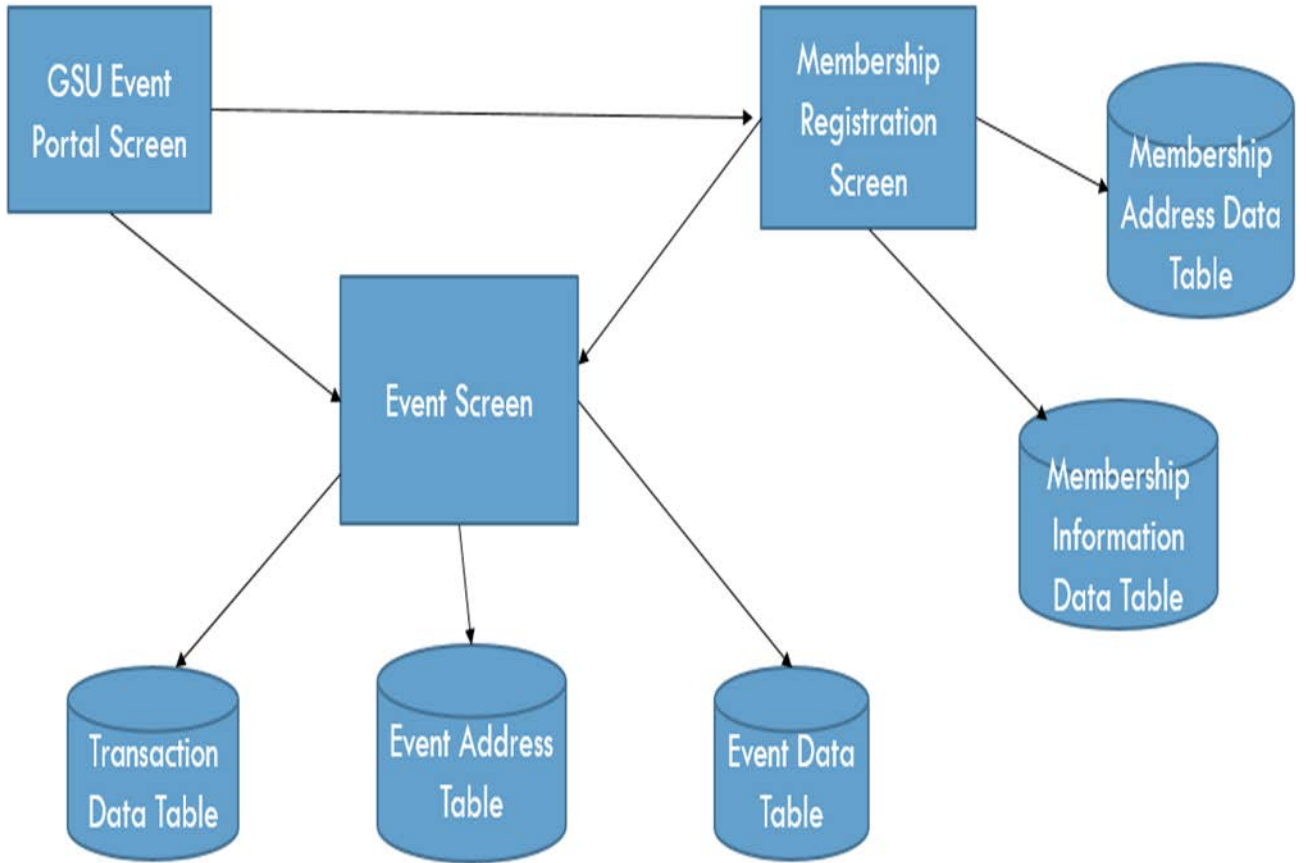
The database will be administered by two kinds of administrators, namely super and normal admins. Super admins will always have the final say on all reads and commits. They review maintenance completed by normal admins. Passwords and other such sensitive information are encrypted. The primary and fail safe databases will each run of their own IP, and each will lie on their own DNS over the network. This is to help bolster the database in terms of security internally (over the internet, hacking) or externally (social engineering, physical disasters such as a fire).

The sites interface will be built on HTML5, CSS3, and JavaScript. The markup is written in HTML, the style and responsive design is applied via CSS, and JavaScript helps with creating interactivity such as drop down menus, carousels, and so on. .NET will be used to provide the dynamic response the user will require when browsing and purchasing products via the site. This will be written in C#.

## ***2.2 Application Information flows***

- Browsing Content
- Searching Content
- Registration
- Purchasing a product or service

## Data Flow Diagram



### ***2.3 Interactions with other Projects (if Any)***

N/A

### ***2.4 Interactions with other Applications***

NIL

### ***2.5 Capabilities***

- The database should be 3NF to offer ease of updates.
- The database should be safe from concurrent writes, or commits.
- A clone of the database will exist on a separate machine to act as a backup.
- The front end should be easy to read and traverse.
- Secure purchasing of tickets.

### ***2.6 Risk Assessment and Management***

Data security and integrity is always at risk, this is why encryption techniques and recursive review of database commits will help preserve the data. A fall back of the database is also maintained, in scenarios of possible physical disasters, or an online threat where data loss is imminent.

## Identifying Risks

The key deliverables of this project is the event portal website along with several tables of an event portal databases. This project includes the development of an application that will allow for events, current and future, to be displayed. The portal gives user the option to buy ticket(s) for the event that are displayed. The web application will allow for membership records to be created, event records to be created and for transaction records to be created.

## Quality Risks

Software reviewed and code review must be performed on web and application software

No.	Rank	Description	Category	Trigger	Risk Owner	Probability	Impact
1	1	Website Server	Website	Security	Administrator	Medium	High
2	2	Web Page	Website	Web Page Infraction	Administrator	Medium	High
3	3	Database	Database	Database Infraction	Administrator	Medium	High
4	4	Application	Application	Application Error	Administrator	Low	Medium

## Managing Risks

Procedures will be in place to manage risk in the GSU Event Portal project. Managing risk of the project will be outlined the following sections:

The website server will be monitored 24/7 for security breaches. Database will be backed up every night and an audit trail will be created after all updates. Web Page or Website errors or infraction will be review by the administrator/employee. Web application programs will be reviewed by the computer programmer. Error messages are coded in the computer program. Error message are risk triggers.

## **Identify Plans**

- ✓ Administrators/employees will conduct code reviews on all software that is written
- ✓ Administrators/employees will review database design, modification procedure and operations
- ✓ Administrators/employees will review website coding and procedures.

## **Quality Management Plan**

The GUS Event Portal project deliverables are the Event website, Membership data entry screens and the Event data entry screen. The Event Databases consist of membership data table, membership address data, event data table, event address table and a transactions table.

Website – The website will be developed to display current and future events that was added to the event data table but registered members. The event information is stored in two separate tables the event data table and the event address table.

Event/Registration Entry Screen – Each data entry application, Event data screen and registration entry screen, are developed to insure the appropriate data is entered and entered with some assurance of correctness. All fields are required except for line 2 of the address field of the event address table and the registration address table.

Program testing and program code review will be done in the 10<sup>th</sup> week of the project. The result of the program code review and program test will be submitted to the programmer that wrote the program for debugging and correction. System testing will be performed by the Quality team in the 11<sup>th</sup> week of the project.



### **Quality Assurance**

The last phase of the project is to evaluate the results and to plan for future enhancement to the website. The Maintenance and Evaluation phase consist of continuous evaluation of the project status. Any minor computer programing errors will be corrected as well as system evaluation to make sure it still meets the end user needs. A checklist of the feature of the deliverable will be reviewed and used to when testing all applications. System evaluation should be done on a quarterly basis or as the need arises.

### **Quality Control**

The quality of the deliverables will be review by the administrator/employees. Errors discovered will be reported to the programmer. Written documentation will be reviewed by the administrators/employees for each segment of the project. The documents will be reviewed for clarity, correctness and to make sure it meets the established standards.

### 3 Project Requirements

#### 3.1 Identification of Requirements

#### User Capabilities:

Req.#	Capability	Description	Implementation
00100	Site	Members are able to navigate website	Mandatory
00101	Registration	Allows users to register authorized accounts	Mandatory
00102	Shopping Cart	Allows tickets to be placed in cart.	N/A
00103	Search	Allows members to search events by location, date, and times.	Mandatory
00104	Transaction	Allows members to purchase tickets via payment portal.	None



### Database Capabilities:

Req.#	Capability	Table	Description
00200	Add/Update/Delete	Membership	This table will store user registration information.
00201	Add/Update/Delete	Employee	This table will store employee related information.
00202	Add/Update/Delete	Transaction	This table will store all transaction on the site and have relationships with specified users.
00203	Add/Update/Delete	Event	This table will store all events and its related information.
00204	Add/Update/Delete	Credit Card	This table will store all user credit card information if advised by member.
00205	Add/Update/Delete	Member Address	This table will store user registration information.
00206	Add/Update/Delete	City	This table will store cities that are services are currently provided in.
00207	Add/Update/Delete	Event Address	This table will store event addresses.
00208	Log Revisions	N/A	Logging information will be revised when needed.
00209	Admins	N/A	Administrators maintain both primary and backups of the database. All commits go through the super admin and are passed onto back up by the same.
00210	Admins	N/A	Normal admins review and regularly maintain the database and all major commits are proposed to a super admin via logs.
00211	Security	N/A	Passwords, credit card numbers, and all other sensitive information will be encrypted.
00212	Backups	N/A	Clones of the database will be maintained to bolster the security from internal and external attacks.

### ***3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)***

- The integrity of the data stored by the site will be protected via encryption.
- A backup is maintained and monitored.
- Users may contact us for purchase and search related queries. This can be done via the sites contact form.
- Users may contact us for password resets, but will need to verify security questions and/or pertinent member information as a security measure.

### ***3.3 Security and Fraud Prevention***

Our security policy will not allow unrestricted access which will help keep our system more secure. All personnel will go through an extensive screening to help avoid a breach in confidentiality and other sensitive information. We will continue to update our security policies to promote day to day practices, which may include, but not limited to, password protection.

Making security a part of our daily routine and using data-protection as well as monitoring our system continuously is key to keeping internal and external threats at a minimum. However, if we place too much emphasis on one particular threat or vulnerability we risk exposing our database in more than one area. We need to find balance when dealing with threats, internal and external.

### ***3.4 Release and Transition Plan***

Company will maintain the website.

#### 4 *Project Design Description*

Team #5's GSU Event Portal Project Design will be explained. The GSU Event Portal is designed to display current events and allows for tickets to be purchased for the events that appear on the website. The website member will have the privilege of browsing events and to purchase tickets to selected events. For Team 5, the events that are displayed will be events for the United States where there will be at least one venue per city throughout the country.

### Members

Two types of users will be incorporate in the design of the website. The registered member will be one that will be allowed to browse events and purchase tickets. A guest user that desires to become a registered member must register via the website and submit the appropriate information. After submitting information such as name, address, city, state and zip and email address, the guest user becomes a registered member. A registered member is allowed to create events that will be displayed on the website. Events are created via event creation screen that can be access after a guest user becomes a registered member. Administrator user can make provisional changes to the website but a Super Administrator can make major changes to the website.

The image shows a web registration form. At the top, there are three navigation links: "Home", "Register", and "Events". Below these links is a form titled "REGISTRATION". The form contains four input fields: "First Name", "Last Name", "Email ID \*", and "Address Line 1". Each field is a simple text box with a label to its left.

## The Website Design

As previously stated, the website is designed to allow members only to browse events. After the initial screen comes up, the user is given the option to register or sign in. If the user indicate that they want to register on the website. The registration screen appears and allow for the user to enter registration information. After the input form has been completed, a new member data record and member address record are created. If the user signs in, an event input screen appears to allow for new events records to be added. When event information is added then new record is created in the event data table and in the event address table. If the user selects to browse, then they will be able to browse the events on the website. Members can search for events via portal (See below).

[Home](#)   [Events](#)   [LOGOUT](#)

Id	Name	Description	Address Line 1	Address Line 2	State ID	City ID	Zipcode	Unit Price
1	Suicide Squad	A movie about the Suicide Squad	Marcus Cinema		3	2	60440	10
4	CAVS VS GSW	Cleveland VS Golden State	Somewhere		3	1002	38274	10
1005	Bourne Identity	Movie	addsa	lsdkn	3	1002	239847	500

**SEARCH**

Search

**SEARCH**

**SEARCH RESULTS**

## The Data Tables

Admin table will contain the administrator and super administrator's password and username (See below). The transaction table will contain the ticket purchase transaction information. The member table will contain the member's data and the member address data will contain the address information of each member. The event table will contain the event information of all the events that are seen when browsing and the event address table will contain the address information of all the event that seen when browsing.

[Home](#)   [Register](#)   [Events](#)

### ADMIN LOGIN

User Name

---

Password

---

Admin

## ***5 Internal/external Interface Impacts and Specification***

Internal interface consists of the internal screen initiated by the user sign-on that allows for the modification of dataset records. The website administrator, the super administrator, is allowed to add, change or delete records of each of the datasets of the GSU event portal. The dataset is the event data table, event address table, membership data table, membership address table and the transaction table.

External interface consists of membership registration screen, the event input screen and the transaction processing screen. The membership screen requires the first name, last name, email address, home address1, home address2, city, state and zip code. The data that is entered will populate the membership data table and the member address table. The membership number will be generated when adding a new record. The event input screen requires event start date, event end date, event start time, event end time, event ticket cost, event address1, event address2, event city, event state, event zip code and an event image. Event number is generated when a new record is added. The data entered will populate the event table and event address table. The transaction input screen requires transaction date purchase, transaction amount and the transaction credit card number. The transaction event number is inherited from the event table (Event identification number). Transaction number is generated when a new record is generated.

The initial interface of the event portal will display images that represent the types of event that a user can purchase ticket for. A user can browse through the events from the event data table and select an event to purchase tickets to attend. All events are submitted to the portal by registered members. A registered member is a user that register as a member. Any member can input events to be display on the event portal.

## **6 Design Units Impacts**

Team #5 designs of the GSU Event Portal consist of three functional units. The units are the member registration, event record unit and the transaction processing unit. The main website page will be displayed with a link to the functional units of the GSU Event Portal.

Membership Registration Unit allows for a user to register as a member of the Event Portal.

After the user enters the appropriate information, a membership data record is created in the member data table. Also, a record in the member address table is created. As a member, the user can add, modify and delete events from the GSU Event Portal.

Event record unit allows for members to add, modify and delete events records from the event record data table and from the event address table. The event address table actually contains the address of the venue of the event. The content from the event data table will be displayed if the users choose to browse events. Some of the events are free and the other cost the price of the ticket to attend.

Transaction processing unit allows for user to purchased tickets for events that are displayed on the event portal. The transaction processing unit will keep a record for every ticket purchased. A transaction record is created when a user elects to purchase ticket(s) from the event portal.

### **6.1.1 Impacts**

The functional areas are the Membership, Event and Transaction process. Each functional area is depended on one another. Membership data information is linked to the membership address data information. The Event data information is linked to event address

information. Transaction data information is linking to event data information. All links have an impact on one another.

The membership number of the membership data table is linked to the membership address identification field. The Event number is linked to the event identification. The event identification is linked to the transaction event number. The links that are established creates dependency and an impact to the project and the data that supports each process.

### **6.1.2 Requirements**

The event portal project, written using ASP.Net and HTML5, requires the ability to be supported by several devices such as mobile smartphone, tablet and desktop/laptop. The website requires a security component to protect the sensitive data that is collected. A validation component is required for member sign in procedure, for the membership input record screen, for the event record input screen and transaction processing screen.

The website requires a security component to guard against hacking, where all websites that is linked to a server holds personal data. Membership data, membership address information and transaction information that include credit card number of ticket buyers must be protected against outside forces and viruses.

The Membership input screen requires several types of validations. Membership screen requires the user to input first name, last name, email address, address1, address2, city, state and zip code. The validation that is required is a valid email address, valid address1, optional address2, valid city, valid state code as well a valid zip code. The Event input screen requires a valid start and end date as well as start and end times. A valid address1, optional address2, valid city, valid state code as well as a valid zip code. The transaction input screen requires a valid



credit card number. The transaction table record will be populated for the other table fields in the database. The Transaction event number will come from the event table, date purchased will be the current date and the Transaction amount will be calculated from the Event cost field.

[Home](#)    [Register](#)    [Events](#)

---

### ADMIN LOGIN

User Name

---

Password

---

**LOGIN**

Admin

[Home](#)    [Events](#)    **LOGOUT**

---

### EVENTS

#### VIEW/EDIT EVENTS

	ID	Category ID	Name	Description	Address Line 1	Country ID	State ID	Address Line 2	Zipcode	City ID	Unit Price
Update Cancel	1	Cinema	Suicide Squad	A movie about the Suicide	Marcus Cinema	USA	California		60440	Carbondale	10
Edit Delete	4	5	CAVS VS GSW	Cleveland VS Golden State	Somewhere	1	3		38274	1002	10
Edit Delete	1005	2	Bourne Identity	Movie	addsa	1	3	/sdkn	239847	1002	500

#### INSERT EVENTS

Category

---

Name

## **7 *Open Issues***

No open issues at this time.

## **8 *Acknowledgements***

Professor Alex Liu, Project Manager

## **9 *References***

<http://www.eventbrite.com>

<http://www.stubhub.com>

<http://ticketmaster.com>

## **10 *Appendices***

N/A