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Innovative low-code tool for Systems Analysis and Design

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ABSTRACT

The background of the students coming into Systems Analysis and Design classes is diverse and broad. During the curriculum they are introduced to Unified Modeling Language (UML), Business Process Modeling Notation (BPMN) and other various components to build systems. The tools used to teach these concepts are diverse and sparingly used in the industry. In addition, they do not offer students a tangible and working system solution that resolves business challenges. This disconnect is most noticeable upon graduation when many students are unfamiliar with common integrations used in industry. The Mendix platform allows these concepts to be introduced early on at an applied level; it showcases business and IT alignment in addition to allowing students to develop a working solution within one semester.

Keywords

Programing languages, education, systems analysis and design, low-code, no-code

INTRODUCTION

In the industry, collaboration between business and IT is critical for a company's success. The business understands business problems and needs technical and digital solutions to fix those problems. The IT department needs to support the business by delivering solutions that work. Collaborating and speaking the same language is essential. In order to deliver applications rapidly - in weeks vs months - the iterative process within the agile methodology is the best fit (Frydenberg, Yates and Kukesh 2017). The agile methodology allows for iterative development and for the business to provide input and shape the product before it is delivered. When students create a Mendix project, the collaboration workspace is automatically created with built-in agile process. The students have the ability within a semester to build a collaborative project and showcase fully functioning system that resolves real business problems.
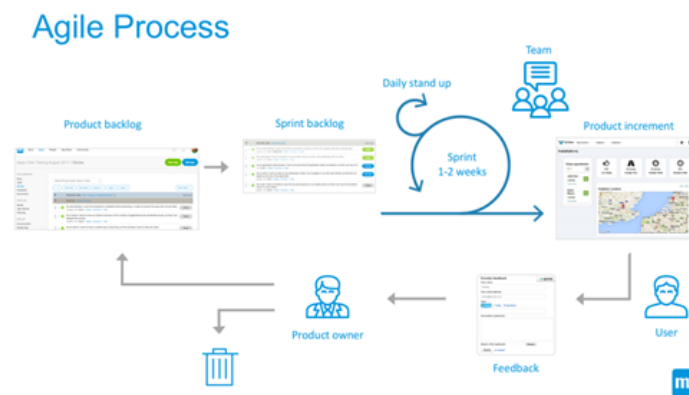

Figure 1 Showcasing the development cycle using the Agile Methodology

Mendix platform has the Agile process built in. Most importantly, it is a full stack platform designed to rapidly develop applications. The platform gives developers control of the various application development layers from front end to back end. It abstracts the main app development components, such as data structures, business logic and user interface. Thus, students are enabled to think more critically about the design and solutions versus focused on learning a programming language with limited capabilities.

DESIGN OF THE WORKSHOP

The main objective of the workshop is to introduce the professors to the platform and showcase how the tool is applied to teaching subjects such as database structures, business logic, user interface, design and agile development principles. Participants are new to the Mendix platform and interested in gaining skills to see what the industry latest technologies are. Professors attending the workshop are welcome to bring their laptops and build their own application in less than 60 minutes.

Flow of the workshop

The workshop will feature the following breakdown, based on a 60-min structure. The components can be revised as needed and based on time limit.

- Introduce Agile Process (5 min) Brief introduction to the agile development process.
- Learn the basics of building your data structure fundamentals (10 min) Hands-on with building a basic data structure through the platform
- Learn the basics of building pages and user experience (15 min) Hands-on with building pages and overviews for application end-users
- Learn the basics of business logic (10 min) Hands-on with building business logic and calculations and workflows following the Business Process Modeling Notation principles
- Deploy and View your app (5 min) Publish your application in the cloud and walkthrough the application and summary of the what we learned
- Syllabus Samples (15 min) Examples of various professors and how incorporating Mendix has enriched their classroom experience. Professors will be provided with sample Syllabuses and Classroom Projects.

ACKNOWLEDGMENTS

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