Software Project Management Plan

COSC 412 Group Project

Fall 2019

**Group Members:**

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Angina Shrestha

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Kenny Vu

Max Moore

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Overview

Purpose and Scope

The purpose of the online educational game is to help prepare new drivers for the written and practical driving tests given by the Maryland Motor Vehicle Administration (MVA). The system will provide a racing game for drivers to gain practical experience and a quiz game to assist with driving concepts. Data and results from these games will be collected and stored on a Relational Database Management System (RDMS) which will be accessible to MVA and DOT personnel through a specialized login. Further features will be detailed later.

Product Features

1. Online games providing education on the practical and written aspects of the MVA driving exam
2. Supports verified and anonymous users
3. Subscription-based payments for using services
4. Allow appropriate DOT & MVA personnel access to records
5. Allow parents/guardians of minors using the system to view their child’s progress
6. Integrate with popular social media platforms
7. Support donations & advertising
8. All data persisting in a centralized location
9. Easily scales to allow expansion of the program across the country

Assumptions and Constraints

The project will be conducted with the following assumptions:

* Work will be periodically reviewed and updated by group members and client
* A working prototype will be constructed by the end of the semester

The following constraints are observed:

* Inexperienced team working with new technologies requires a steep learning curve
* Scheduling difficulty between team mates
* Working in virtual environment
* Short time span

Communication Plan

Project members will communicate regularly via the mobile application GroupMe. In-person meetings will occur frequently on Mondays at 10:00A.M Eastern Time.

Members and stakeholders will utilize GitHub to coordinate production and submit deliverables.

Link to GitHub: <https://github.com/maxthedog21/412FinalGroupProject>

Point of Contact for GitHub: Max Moore

Staff and Contacts

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| --- | --- | --- |
| Name | Role | Notes |
| Professor Rebecca Broadwater | Client | Office Hours (virtual): Mondays/Thursdays: 6PM-6:30PM (Please contact me to schedule a WebEx)  Phone: 410.598.3483 (text message preferred)  Email: rbroadwater@towson.edu |
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| Olashupo Ajala | Programmer | Email oajala2@students.towson.edu |

Tasks and Outline

Weekly Deliverables

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| --- | --- | --- |
| Item # | Description | Date Due/Accomplished |
| 1 | Requirements | 9/28/2019 |
| 2 | HLA, Class Diagram and Interface Spec | 9/28/2019 |
| 3 | Use Cases and Sequence Diagram | 9/28/2019 |
| 4 | SPMP | 9/28/2019 |
| 5 | Repo Setup | Due 9/30/2019 |
| 6 | Create skeleton of unit tests   * Fill in skeleton of unit tests as code is written * Unit tests completed by end of project   Create skeleton Integration tests   * Fill in skeleton of integration tests as code is written * Integration tests completed by end of project   Write end-to-end System Test Procedure  Write Regression Test Procedure (Use **Prioritization** Method | Due 10/9/2019 |

Product Creation

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| --- | --- | --- |
| **Task ID** | **Task** | **Assigned to** |
| 1 | Create Login Landing Page for website   * Possibly utilize Java/Spring framework * Include the following user options:   + Guest login   + User login   + User registration **(See Task 2)**   + MVA & DOT login   + Password reset * Directs to main web page based on user option **(Seet Task 3)** * Provides Disclaimer about data being collected * Includes advertisement * Includes links for advertisers and donations **(See Task 4**) |  |
| 2 | Create User Registration Page   * Possibly Java/Spring framework * Include following fields   + Username   + Password   + First and Last Name   + Birthday   + Parental Guardian name   + If Parental Guardian (yes/no)     - If yes enter username of child   + If DOT & MVA personnel (yes/no)     - If yes enter employee ID # * **(Optional)** Includes Terms & Agreement * Leads to main web page **(See Task 3)** |  |
| 3 | Create Main Web Page for non MVA/DOT   * Possible Java/Spring framework * Includes following options:   + Launch Driving game **(See Task 5)**     - Note: Fulfills practical exam topics   + Launch Driving quiz game **(See task 6)**     - Note: Fulfills written exam topics   + Link to see scores associated with account     - **(Optional)** Implement web page for link   + Link to change account details     - (**Optional)** Implement web page for link   + Link to share progress/score on social media     - **(Optional)** Implement widget/plugin |  |
| 4 | Create Donation and Advertiser registration page   * Java/Spring framework * PayPal donation plugin * List contact information (email) for advertisers |  |
| 5 | Create Driving Educational Game (Practical)   * Possibly created using HTML/CSS/Javascript to ensure compatibility with website/browsers * Reuse existing game source code with altercations * Keeps track of scores |  |
| 6 | Create Driving Quiz Game (Written)   * Possibly created using HTML/CSS/Javascript to ensure compatibility with website/browsers * Displays multiple choice questions using questions similar to MVA written exam * Keeps track of scores |  |
| 7 | Create Database System   * Possibly using MySQL server in Linux environment * Setup tables for user information and PII * Create table for test scores * Create View SQL object for MVA/DOT personnel   + Prevents manipulation of data in table |  |
| 8 | Create Web Server   * Possibly using Apache Web server in Linux environment * Hosts website and games |  |
| 9 | Build data bank of MVA driving exam questions   * Multiple choice * Used for quiz game |  |
| 10 | Host web and game content   * “Plan” is to host it on own web server on the cloud * Actually use free web host for demo |  |

Product Presentation

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| --- | --- |
| Section | Presenter |
| Intro to Problem and Solution   * General Product Overview * Challenges faced * Constraints * Overview of collaboration tools |  |
| Intro to Product   * Features * Product Demo |  |
| Technical Aspects of Product   * Programming Languages Used   + Advantages/Disadvantages * Infrastructure Used   + High level Architecture Diagram   + Ex) Linux, Apache, MySQL, AWS Cloud environment   + Show and Tell * Database demo |  |
| Plan for Expansion   * Addresses scalability and adaptability of the system * Possible additions to the program |  |

Code Review and Testing