COSC 412 Group Project

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**To Do list**

Ask client (Prof Broadwater):

Create Use Cases

1. MVA/DOT Data Access - Status: Started, Incomplete
2. Parent User Registration - Status: Started, Incomplete
3. Regular User Registration - Status: Started, Incomplete
4. MVA/DOT User Registration - Status: Not Started
5. Anonymous User Website Use - Status: Not started
6. Playing Driving Game - Status: Not started
7. Donating money - Status: Not started
8. Subscribing to Service - Status: Not started

Tasks and Outline

Product Creation

|  |  |  |
| --- | --- | --- |
| **Task ID** | **Task** | **Assigned to** |
| 1 | Create Login Landing Page for website   * Possibly utilize WordPress or 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   + Possibly use Wordpress plugin * Includes links for advertisers and donations **(See Task 4**) |  |
| 2 | Create User Registration Page   * Possibly utilize Wordpress or Java/Spring framework * **(Optional)** Use Social Media account to login/register * 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 Utilize Wordpress or 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   * Possible Utilize Wordpress or 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 * (Druv): Found possible game we could use   + Main idea of the game is to illustrate how driver’s reaction time reduces as driving speed increases, resulting in crashes |  |
| 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

|  |  |
| --- | --- |
| 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 |  |

Software Requirements

Purpose

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

Sequence Diagram

Pending

Functional Requirements

1. The system will store game scores associated to registered and non-registered users
2. Authorized DOT and MVA personnel will be able to access game score data and progress reports on registered users.
   1. Must enter Employee ID Number or name
3. System will accept the following Personable Identifiable Information:
   1. First and Last Name
   2. Birthday - under the age of 18 will need additional parental information
      1. Parent Name
      2. Parent Email
      3. Parent Address
      4. Parent Credit Card/Paypal
      5. Parent Social Media
   3. Email
   4. Address
   5. Social Media
   6. Credit Card/Paypal
4. Users will be enrolled in subscription based payments
5. Non-registered (or anonymous) users will have access to the game
6. User can view their results and compare to previous ones immediately after the test is completed using a graph
7. User should be able to retrieve their password by clicking forgot password, notification could be sent via:
   1. Email
   2. Text message
8. User will get a security alert on their email when an unrecognized device is used

Non-Functional Requirements

1. User data collected from on the website shall not be disclosed to any unauthorized entity
2. User data shall be stored in a secured database system
3. The product will run in a web browser environment (Google Chrome, Firefox, Microsoft Edge, etc.)
4. Game should be updated frequently with any new laws
5. Software Quality Assurance:
   1. Availability: System remains up and running with little to no downtime
   2. Usability: Web product is intuitive and easy to use
   3. Security: Product is patched against the latest threats and stable

Interface Requirements

1. Utilize PayPal….
2. Seperate User Interfaces based on login type
   1. StandardUser Interface
   2. ParentGuardian Interface
   3. MVA/DOT Interface
3. User Authorization interface….
4. Backend: Database interface….

## Use Case for Regular Users

|  |  |
| --- | --- |
| Name | Registration process |
| ID | UC\_01 |
| Description | To enable user to use the web resources for the driving test stimulation |
| Actors | Regular User |
| Organizational Benefits | Increase the chances of passing the MVA driving exam, educate users on the driving rules |
| Frequency of Use | Length of subscription, one time use |
| Triggers | Pass the driving test |
| Preconditions | Registration, Age, Name |
| Postconditions | Scores based on questions answered, graph comparison of result so far |
| Main Course | 1. Prompt for user login 2. Select if you are a User or Parent 3. User enters Personal information 4. Two factor authentication 5. Confirms authentication |
| Alternate Course |  |
| Exceptions | Ex1 User is under the age of 18   1. Parent information will be needed |

## Use Case for Parent

|  |  |
| --- | --- |
| Name | Registration Process |
| ID | UC\_02 |
| Description | To enable parents to sign up their minors. To use the web resources for the driving test stimulation |
| Actors | Parent |
| Organizational Benefits | To allow a minor to be able to use the quiz and to keep track of their progress |
| Frequency of Use | Length of subscription or one time use |
| Triggers | Helping their child pass the driving test. |
| Preconditions | Name, Email, Birthday, Credit Card/Paypal, Social Media |
| Postconditions | Score based on the result, which courses their children took, graph showing their work so far |
| Main Course | 1. Prompt for user login 2. Select if you are a User or Parent 3. User enters Personal information 4. Two factor authentication 5. Confirms authentication |
| Alternate Course |  |
| Exceptions |  |

## Use Case for MVA/DOT User

|  |  |
| --- | --- |
| Name | Data Access |
| ID | UC\_03 |
| Description | Gives the MVA/DOT employee the ability to modify, search, delete users. |
| Actors | MVA/DOT employee |
| Organizational Benefits | To access game score data and progress reports on registered users. |
| Frequency of Use | Unlimited |
| Triggers | Fetching Users information/scores, changing parent/user information, |
| Preconditions | Employee ID number, Test Scores, number of passed and failed user |
| Postconditions |  |
| Main Course | 1. Look up User in the system 2. Retrieve |
| Alternate Course |  |
| Exceptions |  |