

EECS 2311 Iteration 0: Planning Document

Group 6

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DriveAura

DriveAura Vision Statement

DriveAura is a web based learning platform that will help individuals who are preparing for driving tests of all licence levels (G1, G2, G) based in Ontario.

For those who are wanting to refresh their knowledge on driving or in need of a platform which efficiently prepares them for driving tests, DriveAura will be the most optimally designed resource. When first entering the website, users will be met with a diagnostic test which will assess their current levels of knowledge and areas of weaknesses/improvement. Based on this test, users will be given a learning pathway, full of modules and exercises that will adapt to their progress, which will help expand their theoretical and practical knowledge.

The targeted audience for DriveAura will be directed towards first time licence applicants, high school students and post secondary students, drivers with suspended or expired licences, and drivers seeking refreshers or confidence building with their driving skills. The region of focus will be users who are based in Ontario, as the resources given will be aligned with the driving regulations of Ontario. DriveAura will also target people who may have anxiety or limited exposure to driving, as the provided learning pathways will help with these cases as well.

DriveAura is a valuable project because instead of having users brute force their way to learning the information by memorization, DriveAura will specialize in actually preparing its users to be ready for all kinds of situations on the road. In addition to the theoretical knowledge that users will receive, DriveAura will give the user knowledge on how to use their cars interface for example. This website will also be up-to-date with modules on electric vehicles or also new technologies which have been introduced during these modern times. DriveAura also goes beyond the traditional websites, as users will have access to safety modules that will help them be mentally prepared and ensure a safe driving environment for all possible scenarios.

To help keep the users engaged long-term, the website will have a gamification twist with the introduction of “Aura” points. Users will be able to receive these points for completing tasks such as logging in daily and completing various modules. Other ways these points can be earned will be from doing timed-assessments that will improve/reinforce the users knowledge. These points can be seen on a leaderboard where users will be able to compete with the times of other users in completing practice assessments. The integration of aura points will help promote consistent learning for the users.

The success criteria which will be used will be: 1) Users receive correct feedback based on their initial diagnostic test. 2) Users' knowledge is shown to improve after going through the modules and doing the practice quizzes/assessments. 3) Consistent engagement from users and ensuring users are following the learning pathway. 4) This website will differ from the

existing resources through the various implemented features. 5) Users report positive results with their tests or driving experience in general after going through the learning pathways.

Big User Stories

1. G1/G2/G Learning Pathway

- A fundamental part to DriveAura will be its core learning features. DriveAura is an educational website that will be the foundation and guide for drivers of all licence levels. Its users will be able to go through interactive modules and practice opportunities which will help guide them through the required theoretical and practical knowledge for each respective driving test. Users will receive feedback based on their performance on the modules and be able to visually see their specific weaknesses and strengths. All of the learning exercises will ensure these users are ready to tackle each of the driving tests.

2. Safety Features

- Driving safely is essential in determining a driver's readiness to be on the road. This feature emphasizes safety by educating users on essential vehicle components, providing clear guidance for responding to emergency situations, and supporting informed decision-making under pressure. It also highlights the importance of mental readiness by offering step-by-step strategies to ensure drivers are alert, focused, and emotionally prepared before driving. Interactive activities assess reaction time, while accessibility considerations are addressed to promote safe and inclusive driving experiences.

3. Extra Features

- The Drive Aura platform offers several key features designed to enhance the learning experience. Users can locate nearby driving centers for professional in-car practice and access a personalized dashboard to monitor their test readiness. Engagement is driven through Aura Points and a community leaderboard, incentivizing progress across modules and competitive time trials. Additionally, the platform features a responsive, accessible design with theme toggles and an interactive manual transmission simulator, ensuring a comprehensive and user-friendly environment for mastering driving principles.

Iteration 1 detailed user stories

a. G1/G2/G Learning Pathway Features (RONAN/GABRIEL)

i. User becomes examiner (G2/G) (Ronan)

- The user will be able to simulate the test environments with the use of their own devices. This will help with giving users pointers on what to expect during the real test.

- The user will have access to tips and things to look out for during the test such as common mistakes
- Access to videos in which go through the various driving test routes can be watched to get familiar with the area.
- ii. Learning modules (All Licence Levels) (Ronan)**
 - The website will have structured learning modules like the traditional driving websites which will help build knowledge and understanding concepts related to the various licence levels (G1, G2, G). Here users will also be able to touch up on concepts from previous licence levels as well.
 - The modules will contain the required theory for driving in formats such as explanations, videos and graphic images
- iii. Quizzes (Inside modules) (All Licence Levels) (Ronan)**
 - At the end of each module, the user will be able to test their knowledge before moving forward to the next one
 - Quizzes will comprise of multiple choice, image-based, scenario based, true/false, drag and drop, and fill in the blank questions
 - At the end of each quiz, users will be given feedback in which they are able to reflect on their learning
- iv. Data Visualization (All licence levels) (Gabriel)**
 - The system will provide basic visual representations of user learning data across all licence levels (G1, G2, and G). Users will be able to view their completion percentage, current licence level, and quiz or practice test performance. Simple charts and progress indicators will help learners and instructors understand progress, identify strengths and weaknesses, and determine readiness for upcoming driving tests.
- v. Checklist (For passenger grading for G2/G Test) (Gabriel)**
 - The platform will include a structured checklist designed for G2 and G driving evaluations. The checklist will allow drivers to be assessed using simple yes/no criteria across driving categories such as passenger rules, safety practices, mirror usage, lane changes, and restriction compliance. At the end of the evaluation, the system will generate a score, highlight strengths and weaknesses, and provide a basic pass/fail readiness prediction
- vi. Routes of driving centres (Linked with YT videos for reference) (Gabriel)**
 - Users will have access to a list of driving test centres with associated practice routes. Each centre will include a map view displaying suggested practice routes for visual reference, along with embedded YouTube videos that walk through the routes in detail. The videos highlight intersections, lane changes, examiner expectations, and common mistakes, helping test takers become familiar with the area and prepare more confidently for their driving test. This feature also supports driving instructors by improving student preparedness, increasing pass rates, and strengthening their professional reputation.

Iteration 2 detailed user stories

b. Safety Features (TASHI/ROSS)

i. Know your car (Tashi)

- The website offers a feature where it helps the user develop a foundational understanding of vehicle components and basic components.
- Users are presented with a visual representation of a standard vehicle, where key components such as the engine, brakes, tires, mirrors, and dashboard indicators are highlighted. By selecting each component via a click, users can access concise explanations of the components' purpose, how it affects driving safety, and what to look out for during everyday use.

ii. What to do when an accident occurs? (Tashi)

- The website offers a feature where it equips users with clear, structured guidance for responding safely and effectively to accidents and other emergency situations.
- This feature uses interactive, scenario-based learning to expose users to a range of real-world emergency situations, including traffic collisions, encounters with emergency vehicles, roadside breakdowns, and police stops. Each scenario is accessed through a simple selection and presents logically ordered steps that guide users through assessing the situation, but making quick and informed decisions, and safely exiting or resolving the scenario.

iii. Strategies to stay calm (Tashi)

- The website offers a feature to help users assess their mental and physical readiness before getting behind the wheel.
- This feature provides clear guidance on when it is safe to drive based on the user's state of mind and outlines appropriate next steps if driving is not advised. These may include recommended rest periods, stress-reduction techniques, hydration, or postponing travel until the driver is fully alert and capable.
- This feature offers step-by-step strategies on how to regulate their mental state, such as controlled breathing, grounding techniques, and focus-building techniques, enabling them to regain composure and create safe driving decisions.

iv. Hazard Perception Training (Ross)

- This feature will include video clips that will contain hazard perception training. The user will click when they've spotted a hazard. Feedback shows the reaction time, missed hazards and a comparison to average users. Reaction time will depend on clicking at a specified timeframe. Having a good reaction time and missing hazards/having a slow reaction time will add or subtract aura points respectively.

v. Weather & Seasonal Hazard Training (Ross)

- This feature will include safety modules for harsh weather conditions such as snow & ice, heavy rain, fog, slush & black ice. Users are prompted to make driving decisions during these scenarios and will receive immediate feedback explaining safe practices and common mistakes.

Iteration 3 detailed user stories

c. Extra Features (SALIK/MOBEEN)

- i. Find nearby driving centres/driving instructors (Salik)**
 - This feature will allow the user to find nearby driver institutes and driver instructors. They would be able to get real-life practice and experience on the road with a professional instructor beside them.
- ii. Log in + Account Information (Salik)**
 - The user will be able to log-in into their account and have full access to your personal study data. This information is used to give the user a realistic look at their performance, showing them their strengths and identifying areas where they might need more practice before the test.
- iii. Aura Points (Salik)**
 - Aura Points serve as a reward system designed to recognize your progress. You can earn these points by engaging with various parts of the platform, including educational modules, quizzes, assessments, and interactive games.
- iv. Leaderboard (Salik)**
 - This feature serves as a formal ranking system for all Drive Aura users. By benchmarking your Aura Points against the rest of the community, the Leaderboard helps you track your performance levels and identify your current rank relative to the entire user base.
- v. Responsive Design (Easy to use website, e.g accessibility settings with light/dark mode) (Mobeen)**
 - Ensuring design is responsive amongst platforms desktop, mobile and tablet allowing a seamless experience amongst any mode of use
 - Users should be able to toggle between themes such as night mode and day mode to reduce eye strain during late night study sessions and or studying in bright environments
- vi. Gamification (Go against other learner's times) (Mobeen)**
 - To move ahead of boring static quizzes, introducing a competitive element to the learning pathway will improve user retention
 - Using Time Trial modules in which the user will be going against other learners times for a module and put them in a percentile
 - Users will also do time based modules such as identifying road signs and reacting to hazards in time against other users
 - Main attempt will include attempting to put users in a lobby in which they can compete against each other in these modules and they will gain aura points for placing higher than others

- Back up attempt will be everytime a user finishes a module we will collect this data and have the average time to beat with percentile of questions answered correctly and give aura points for beating the average user
- vii. **Manual game to teach manual transmission (Mobeen)**
 - Providing an image of a speedometer in a manual car we will allow the user using keyboard inputs and or mouse inputs to practice shifting the car at the right time and correctly with a view of only a speedometer and shifting at the right time
 - This will allow the user to increase their aura points and help them have a practice of the principles of driving a manual vehicle

G1/G2/G Learning Pathway

Iteration 1

TBD

TBD

User Becomes Examiner	
Priority: High	Time: 1-3 Days
Be able to simulate driving test environment so that user knows what to expect during real exam. Provide examiner-style tips and common mistakes. Include reference videos of real driving test routes	

Data Visualization	
Priority: High	Time: 1-3 Days
Show learning progress for G1,G2 and G	
Display completion %, licence level	
Show quiz & practice test results	
Simple charts and progress bars	
Helps identify strengths & weaknesses	
Indicates test readiness	

Ross and Ronan

Mobeen and Gabriel

Learning Modules For All Levels	
Priority: High	Time: 5-8 Days
Have structured driving modules for G1, G2, and G so that users can build knowledge and review concepts at their own paces. The modules will include explanations, images, videos. Users can revisit earlier level content.	

Checklist For Passenger	
Priority: High	Time: 1-3 Days
Checklist for G2 and G driving tests	
Yes/No grading per category	
Includes safety, mirrors, lane changes	
Passenger rules & restrictions	
Provides pass/fail readiness	
Highlights strengths & weaknesses	

TBD

Salik and Tashi

Quizzes Inside Modules	
Priority: High	Time: 4-7 Days
Users will have short quizzes at the end of each module so that they could test their understanding before progressing to the next one. Quizzes will be MCQ, scenario-based, and image-based. Users will receive feedback after.	

Routes of driving centres	
Priority: High	Time: 4-6 Days
List of Ontario driving test centres	
Map showing practice routes	
Embedded YouTube walkthrough videos	
Highlights intersections & lane changes	
Shows examiner expectations	
Helps reduce test anxiety	

Safety Features

Iteration 2

Know Your Car	
Priority: High	Time: 3-5 Days
Provides an interactive vehicle diagram that helps users learn key car components. Users can click parts like brakes, tires, and dashboard indicators to understand their purpose, safety impact, and basic maintenance.	

What To Do When An Accident Occurs	
Priority: High	Time: 3-5 Days
Offers interactive emergency scenarios that teach users how to respond safely in situations like accidents, roadside breakdowns, and etc. Each scenario provides step-by-step guidance for making quick, informed decisions.	

Strategies To Stay Calm	
Priority: High	Time: 3-5 Days
Helps users assess their mental and physical readiness to drive. Provides guidance on when it is safe to drive and offers practical steps—such as rest, stress reduction, or focus techniques—to support safe driving decisions.	

Hazard Perception Training	
Priority: High	Time: 3-5 Days
Includes hazard perception videos where users click to identify hazards. Feedback shows reaction time, missed hazards, and comparisons to average users, with points awarded or deducted based on performance.	

Weather & Seasonal Hazard Training	
Priority: High	Time: 3-5 Days
Provides safety modules for harsh weather conditions like snow, rain, fog, and black ice. Users make driving decisions in simulated scenarios and receive immediate feedback on safe practices and common mistakes.	

Extras

Iteration 3

Find Nearby DrivingCentres/Instructors	
Priority: High	Time: 3-5 Days
This feature will allow the user to find nearby driver institutes and driver instructors. They would be able to get real-life practice and experience on the road with a professional instructor beside them.	

Log-In + Account Information	
Priority: High	Time: 3-5 Days
The user will be able to log-in into their account and have full access to your personal study data. This shows them their strengths and identifying areas where they might need more practice before the test.	

Aura Points	
Priority: High	Time: 1-3 Days
Aura Points serve as a reward system designed to recognize your progress. You can earn these points by engaging with educational modules, quizzes, assessments, and interactive games.	

Leaderboard	
Priority: High	Time: 5-8 Days
This feature is a formal ranking system for all Drive Aura users. By tracking your Aura Points against the rest of the community, the Leaderboard helps you track your performance and identify your current rank against everyone.	

Feature: Responsive Design	
Priority: High	Time: 3-7 Days
Ensuring a seamless experience for users through smart design will increase retention rate on the platform and will encourage users to continue learning about the several big user stories we have to offer.	

Feature: Games & Competition	
Priority: Normal	Time: 3 Days
For people who enjoy competing against other users, having the ability to challenge others to modules and having games in which users can earn points will keep retention, especially for younger drivers.	

Feature: Manual Car Simulator	
Priority: High	Time: 7 Days
A simulator in which users can practice driving manual and learn when to shift and use the clutch. Simulator will include a speedometer and the ability for user to interact with a manual car.	