**Team 25**

**Client: NTT Data**

**Project Abstract: A Virtual Reality Simulation of riding in a Self-Driving Car**

**Bi-weekly report Date: 28/02/2020**

1. **Overview of the last two weeks:**

In the last month, our team has continued to improve our prototype of the VR car simulator (constructed and presented in January 2020). This prototype consists of two main scenes - the *Car Selection* scene and the *Car Simulation* scene. For the *Car Selection* scene, we are using the [Ultimate Sci-Fi UI Components Pack](https://assetstore.unity.com/packages/2d/gui/ultimate-sci-fi-ui-bundle-109073) to improve our UI and our home page for the application. For the Car Simulation, we are currently in the middle of finalising our *City Environment* (created using [Urban Construction Pack](https://assetstore.unity.com/packages/3d/environments/urban/urban-construction-pack-8081)) and are testing our Car Navigation algorithm. This algorithm will be further tested when the environment is completely constructed. Along with this, we have completed our car designs and our currently customising their interiors (car models used: [#067 Sportscar](https://assetstore.unity.com/packages/3d/vehicles/land/067-sportcar-149095) and [Realistic Mobile Car #06](https://assetstore.unity.com/packages/3d/vehicles/land/realistic-mobile-car-06-149519)) Finally, we have also successfully integrated Oculus Hand Tracking with our project application.

1. **Completed tasks:**
2. Project functionalities (taken from the MoSCoW list)
   1. A user-friendly interface that allows the user to choose a car
      1. User-friendly elements include buttons for choosing a color for the car and arrows for navigating car options
      2. User must also be able to view information about a car - it's specifications, description, and performance figures
   2. A user-interface for customising the car
      1. A menu that lists out all available cars with additional customising options like choosing the colour of the car
   3. A feature-complete simulation of riding in a self-driving car
      1. Users must be able to see the cars moving from a start point to a destination along a specific track
      2. The car must have basic elements of a car’s interiors; must have a driver's seat, a front-passenger seat, and a Dashboard/instrument panel with at least a speedometer
      3. A navigation system for the car - a virtual map with real-time updates of the car’s position
3. [Project website](https://abirbhushan.com/systems-engineering-project-website/)
4. Elevator Pitch Presentation
5. Preliminary Work video / Lab Demo
6. Chosen and requested the following Unity Assets:
   1. Car (future self-driving car with car interior assets)
      1. [#067 Sportscar](https://assetstore.unity.com/packages/3d/vehicles/land/067-sportcar-149095)
      2. [Realistic Mobile Car #06](https://assetstore.unity.com/packages/3d/vehicles/land/realistic-mobile-car-06-149519)
   2. Map
      1. [Urban Construction Pack](https://assetstore.unity.com/packages/3d/environments/urban/urban-construction-pack-8081)
   3. UI Icon Kit
      1. [Ultimate Sci-Fi UI Components Pack](https://assetstore.unity.com/packages/2d/gui/ultimate-sci-fi-ui-bundle-109073)

**Total Cost: € 116.14**

1. Replace the *Oculus Touch Controllers* with Hand Tracking
2. Research about algorithms relating to Car Navigation
3. Complete the self-driving algorithm
4. **Project Status:**

We are currently following up on our prototype application - improving its usability, user-experience, adding functionalities, and testing for delivery.

1. **Future Plan:**
   1. Test the car navigation algorithm
   2. Create a UI for Car Navigation so that users can customise the route the car will take
   3. Finalise our simulation environment
   4. Further improve our *Car Selection* scene and add UI components using the aforementioned asset
   5. Completely test our project for delivery
   6. Complete all documentation for our project