**Team 25**

**Client: NTT Data**

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

**Bi-weekly report Dated: 17/01/2020**

1. **Overview of the last month:**

In the last month, our team has constructed a prototype of the VR car simulator. This prototype consists of two main scenes - the Car Selection scene and the Car Simulation scene. Basic functionalities of the Car Selection page include selecting a car, customising its exteriors like changing its color, etc. For the Car Simulation, we have created a self-driving car that drives around a small city. The car currently has very basic interiors - an entertainment/infotainment system, a Dashboard/Instrument Panel with a speedometer, and a navigation panel. *Oculus Quest* and the *Oculus Touch Controller(s)* were used when developing and testing our prototype, instead of Haptic Gloves due to some logistic problems.

1. **Completed tasks:**
   1. 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
   2. [Project website](https://abirbhushan.com/systems-engineering-project-website/)
   3. Elevator Pitch Presentation
   4. Preliminary Work video/Lab Demo
2. **Project Status**:

We finished the prototype over the last two weeks and will try to improve the quality of our models. Our plan is to start working on the *self-driving* algorithm in the next two weeks.

1. **Future Plan:**

* Looking for new car models (a tailored self-driving car model would be better)
* Improve the Car's interiors
* Replace the *Oculus Touch Controllers* with Leap Motion to enable *hands capture*.
* Look for a larger, more detailed city map
* Research about algorithms relating to Car Navigation
* Create a UI for Car Navigation so that users can customise the route the car will take