Milestone 01: Project Initiation

1. **What is your name?**
   ZAKARIYA OULHADJ

2. **What is your Student ID?**
   OUL20475392

3. **What Programme are you on?**
   BSc Computer Science

TELL US ABOUT YOUR PROJECT SO FAR

- **What is the working title of your project (this can be changed at a later date)?**
  3D Earth Visualiser

- **What is the theme of your project?**
  Application Development (Native: e.g. Android, iOS, Windows, MacOS, Linux, etc.), Data Analysis and Visualisation, Games and Gamification, Networking, Other

- **Please give a very brief description of your project.**

  The “3D Earth Visualiser” project aims to combine the world of modern computer rendering (Vulkan) with pre-defined/custom data which would provide a platform that users can use for entertainment to accurate data representation and visualisation. Examples include an image locator, packet tracing around the globe, satellite/flight/ship tracking, server outages, weather simulations and much more within a 3D-rendered globe. The application will include a predefined set of datasets/live tracking capabilities. In addition to this, the project will allow users to create their own in order to visualise their own datasets.

  The project itself however will primarily focus on the live tracking of satellites and other vehicles.

- **Please outline the main aim(s) of your project. An aim is an expected outcome of your project (e.g., issues it will address, how it might improve or enhance a situation for stakeholders, etc.).**

  In our current world, there is data everywhere from cars, aircraft, outer space , infrastructure, communication, family pictures etc. Oftentimes, there is so much data that it can be hard to understand and visualise. This is where the 3D Earth Visualiser is meant to address these issues. A lot of software for planet rendering is outdated, and slow and makes understanding the world around us difficult.

  By using new rendering techniques (Vulkan rendering API) and an efficient, easy-to-use platform, users will be able to directly interact with the 3D world in first-person giving us a more realistic view of the world and data.

- **Please outline some artefact objectives of your project. Your "artefact" is what you are going build, deploy, evaluate etc. Objectives are typically steps/activities that you must complete in order to deliver your project successfully.**

  One of the main objectives is to Implement the core rendering engine. This is the backbone of the application and is responsible for rendering and displaying everything to the user. Once the backbone of the project is mostly implemented then the data visualisation aspect of the project can be worked on. Below is a list of some objectives that need to be undertaken for the final year project:

  - Implement a basic rendering engine
  - Gather data locally and/or via the internet
  - Visualise the data within the renderer
  - Implement a flexible platform that supports custom data
  - Ensure that the application requires as little processing power as possible in order to increase the number of devices that can smoothly run it.
  - Ensure the application can run on multiple different operating systems giving users the most flexibility.

TELL US ABOUT YOUR SUPERVISION PREFERENCES

9. **Please indicate your preferred supervisor. NOTE: Your choice cannot be guaranteed as supervisor allocation is based on availability and subject specialism.**
   Charles Clarke

10. **Have you contacted a prospective supervisor?**
    I am still in the process of contacting a prospective supervisor.

11. **Please indicate your preference for a second supervisor (marker). Please select one or more.**
    Arturo Araujo

    Wei Li

To be completed by the First Supervisor
It is the supervisor's responsibility to approve this project as meeting the requirements for the module. This includes professional body requirements, programme requirements, and module requirements. By signing the form, you are agreeing you have validated the suitability of the project.

I approve this Project Initiation Document: ☐

Supervisor's Name: _____

Date: ____ / ____ / _____