## Project Proposal

#### Title: RC-PC

#### Language: C++

### Overview:

* Use of OpenGL for 3D rendering
* Inputs from joystick type controllers
* Definition of file formats to store aircraft .aircraft (.zip file)
  + Contains the .obj
  + Contains UV and texture data
  + Contains a self defined .bfp (.xml file) to store pre-baked flight profile arguments
* A method of editing the files

### Potential to add complexity

* Shaders
* Performance
* Calculate flight characteristics based on the 3D model file for use with the physics engine
* Editor for the new file types
* Support for the use of a VR headset using OpenVR

### Suitability

* 3D rendering and physics engine for flight should provide complexity
* Definition of file formats, reading and writing will add file handling
* Physics engine for the flight aspects will add physics beyond the rigid body engine built into one of the libraries I will use
* Interaction with different input devices will add the need for a number of configuration menus

### Success criteria

* Aircraft is simulated using predefined/pre-baked characteristics from a file
* Aircraft is controlled using an input device besides a keyboard and mouse
* Aircraft is rendered in full colour from a .obj and related texture files
* Flight control surfaces can be moved and are animated beyond the simulation
* Users can follow documentation and be able to create their own .aircraft files using a .obj from Blender

### Documentation

* Use of GitHub for versioning
* Use Obsidian note taking software for documentation