

Flight Simulation Game - Operating Instructions

1. Overview

The purpose of this document is to provide a brief description of the Flight Simulation Game applications, as well as guidance in starting and operating each application.

For detail regarding host names, login details, IP addresses and the like, refer to section: **Appendix A - Hardware List**

2. Initial Setup

All PCs and the Raspberry Pi connect to the office 3G router - or stand-alone router (without external internet access). Please note the sequence of app startup, as this is important.

Note: There are two setups detailed in Appendix A - Hardware List, this guide is written around the **condensed setup**, as shown in Table 8 - Condensed Setup.

Table 2-1 - Initial Setup Steps

1.	CONTROLLER LAPTOP Using piclublaptop03 : <ol style="list-style-type: none">1. Start the controller laptop2. Verify the laptop is connected to the network3. Verify the mysql-server service is running. If unsure, use the command below: <pre>> sudo service mysql-server start</pre>
2.	RASPBERRY PI <ol style="list-style-type: none">1. Turn on the Raspberry Pi2. Verify the Pi is to connected to the network

3. Pre-Launch Configuration Checks

In this section, you will verify the apps are configured correctly and ready to run. The steps below refer to host names, IP addresses and login credentials which are used in the apps' config files. These details can be found in section Appendix A - Hardware List.

Table 3-1 - Configuration Checks

1.	<div>THE GAME - CONFIG CHECKS</div> <div>Using the Raspberry Pi:</div> <div><ol style="list-style-type: none">Navigate to the game directory <pre>> cd ~/flightsim/picode</pre>Open the game's config file and verify the following settings are correct for the current database setup <pre>> nano digitalenginesimulator.cfg</pre><pre>[databaseconnection] hostname=<mysql server ip address> username=<db username> password=<db password> dbname=<database to be used></pre>Using the same config file opened above, verify the game is not in test mode, by setting the fakepeddling value to False. <pre>[testing] fakepeddling=False</pre></div>
----	--

2. REGISTRATION APP - CONFIG CHECKS

Using **piclublaptop03**:

1. Navigate to the app directory

```
> cd ~/flightsim/registration
```

2. Open the game's config file and verify the following settings are correct for the current app setup

```
> nano config.json
```

site	http://<local ip address>:<port> ¹
host	0.0.0.0 ²
port	5000

3. Open the game's database config file and verify the following settings are correct for the current database setup

```
> nano db_config.json
```

database	flightsim
host	<ip address of the database server>
user	<database user id>
password	<database password>

¹ This value **must match** the port key.

² Use 0.0.0.0 if running the registration web UI from a remote device. Use the the local IP address if running the web UI locally.

3. SCOREBOARD APP - CONFIG CHECKS

Using **piclublaptop03**:

1. Navigate to the app directory

```
> cd ~/flightsim/scoreboard
```

2. Open the app's config file and verify the following settings are correct for the current app setup

```
> nano config.json
```

host	0.0.0.0 ³
port	5001

3. Open the app's database config file and verify the following settings are correct for the current database setup

```
> nano db_config.json
```

database	flightsim
host	<ip address of the database server>
user	<database user id>
password	<database password>

³ Use 0.0.0.0 if running the scoreboard web UI from a remote device. Use the the local IP address if running the web UI locally.

4. PROFILER APP - CONFIG CHECKS

Using **piclublaptop03**:

1. Navigate to the app directory

```
> cd ~/flightsim/profiler
```

2. Open the app's config file and verify the following settings are correct for the current app setup

- a. The `dir_graph` and `dir_graph_player` keys must contain the relative path to the scoreboard app's images directory⁴

```
> nano config.json
```

<code>dir_graph</code>	<code>../scoreboard/static/images</code>
<code>dir_graph_player</code>	<code>../scoreboard/static/images/player_graphs</code>

3. Open the app's database config file and verify the following settings are correct for the current database setup

```
> nano db_config.json
```

<code>database</code>	<code>flightsim</code>
<code>host</code>	<code><ip address of the database server></code>
<code>user</code>	<code><database user id></code>
<code>password</code>	<code><database password></code>

⁴ If you don't know where the images directory lives in the scoreboard's structure, open the scoreboard's directory tree and do a recursive search for 'images'.

4. App Startup Instructions

The sections below contains guidance for starting the apps.

Tip: As all apps are run from piclublaptop03, it might be useful to use a **TMUX** session to launch and control the apps.⁵ Alternatively, you can open a new console session for each app.

Table 2 - Startup Instructions

1.	<p>DATABASE STARTUP</p> <p>If the MySQL service startup was preformed as part of step Table 2-1 - Initial Setup Steps, this step can be skipped.</p> <ol style="list-style-type: none">1. Start the controller laptop2. Verify the laptop is connected to the network3. Verify the mysql-server service is running. If unsure, use the command below: <pre>> sudo service mysql-server start</pre>
----	---

⁵ TMUX *should* already be installed on all laptops. If you have questions on how / why to use TMUX, see authors.

2.	<h2>REGISTRATION APP - STARTUP</h2> <p>Using piclublaptop03:</p> <pre>> cd ~/flightsim/registration > python app.py</pre> <ol style="list-style-type: none"> 1. Watch for the IP address and port to be output to the console - this will be the address used in Firefox to load the interface⁶ <p>Using FireFox:</p> <ol style="list-style-type: none"> 2. Open a new tab and enter the host's IP address and port (as observed when starting the application) into the address bar <ol style="list-style-type: none"> a. For example: 192.168.123.63:5000 3. Press F11 to change the browser to full-screen mode 4. Zoom in/out so the page content fits on a single page, without scrolling
3.	<h2>SCOREBOARD APP - STARTUP</h2> <p>Using piclublaptop03:</p> <pre>> cd ~/flightsim/scoreboard > python app.py</pre> <ol style="list-style-type: none"> 1. Watch for the IP address and port to be output to the console - this will be the address used in Firefox to load the interface⁷ <p>Using FireFox:</p> <ol style="list-style-type: none"> 2. Open a new tab and enter the host's IP address and port (as observed when starting the application) into the address bar <ol style="list-style-type: none"> a. For example: 192.168.123.63:5001 3. Press F11 to change the browser to full-screen mode <p>Zoom in/out so the page content fits on a single page, without scrolling</p>

⁶ If 0.0.0.0 is displayed as the IP, then use the PC's IP address in the browser. If 127.0.0.1 is displayed, use 127.0.0.1 in the browser. As an aside, 0.0.0.0 indicates the app is configured for 'public' access, i.e.: can be accessed from other (e.g. portable) devices on the network.

⁷ If 0.0.0.0 is displayed as the IP, then use the PC's IP address in the browser. If 127.0.0.1 is displayed, use 127.0.0.1 in the browser. As an aside, 0.0.0.0 indicates the app is configured for 'public' access, i.e.: can be accessed from other (e.g. portable) devices on the network.

4.	<h3>PROFILER APP - STARTUP</h3> <p>Using piclublaptop03:</p> <pre>> cd ~/flightsim/profiler > python profiler.py</pre>
5.	<h3>THE GAME - STARTUP</h3> <p>Using the Raspberry Pi:</p> <pre>> cd ~/flightsim/picode > sudo python digitalenginesimulator.py digitalenginesimulator.cfg</pre> <p>Alternatively, if the Pi is running in GUI mode, the game can be launched by:</p> <ol style="list-style-type: none">1. Double-click the Launch Pi.sh icon on the desktop2. Click “Execute” when prompted

5. Operating Instructions

The sections below contain guidance for operating the apps.

Table 3 - Operating Instructions - Registration

1.	<div><h3>REGISTRATION APP - USE</h3><h4>Application Overview</h4><p>The registration app is used to record each player's alias, details and avatar image in the database. The scoreboard app then uses this data to manage the player queue and high scores.</p><h4>Application Operation</h4><p>A new player will do the following, using the registration app's web UI:</p><ol style="list-style-type: none">1. Select their player alias (a combination of a colour, animal and a number)2. Enter their guardian's details3. Select an avatar image4. Click Register!<p>Clicking the Register! button will store the new player's information to the database, along with a status of 'QUEUED' and a gamehighscore of 0.</p><h4>Field Requirement Details</h4><table><tr><td>Colour</td><td>required</td></tr><tr><td>Animal</td><td>required</td></tr><tr><td>Number</td><td>required</td></tr><tr><td>Guardian's email address</td><td>optional</td></tr><tr><td>Guardian's phone number</td><td>optional</td></tr><tr><td>Avatar</td><td>required</td></tr></table></div>	Colour	required	Animal	required	Number	required	Guardian's email address	optional	Guardian's phone number	optional	Avatar	required
Colour	required												
Animal	required												
Number	required												
Guardian's email address	optional												
Guardian's phone number	optional												
Avatar	required												

Table 4 - Operating Instructions - Scoreboard

1.	<h2>SCOREBOARD - USE</h2> <h3>Application Overview</h3> <p>This dashboard is set to refresh every (2) seconds⁸; which will automatically pick up new players added to the queue, new high scores and the profile of the player who has just completed the game.</p> <h3>Queue Management: Options</h3> <p>Three options have been built into queue for easy management.</p> <ol style="list-style-type: none"> 1. Set a player's status to PLAYING 2. Move a player to the back of the queue 3. Remove a player from the queue <h3>Queue Management: Use</h3> <p>The following items provide further detail on the queue management options listed above.</p> <ol style="list-style-type: none"> 1. Set a player's status to PLAYING <ul style="list-style-type: none"> ○ In THE QUEUE section, click the QUEUED label <ul style="list-style-type: none"> ▪ This action will update the player's status to PLAYING, make the player appear in the NOW PLAYING section, and send the player to the Pi to begin the game 2. To move a player to the back of the queue: <ul style="list-style-type: none"> ○ In THE QUEUE section, click the player name <ul style="list-style-type: none"> ▪ This option will update the queueposition value in the database with the current epoch time; thus moving the player to the back of the queue 3. Remove a player from the queue <ul style="list-style-type: none"> ○ In THE QUEUE section, click the player's avatar and select Yes to the prompt⁹ <ul style="list-style-type: none"> ▪ This action will change a player's status to DELETED; while keeping the player's record in the database
----	---

⁸ The refresh rate on initial deployment is 2 seconds, and can be updated using the `<meta http-equiv='refresh' content='2' />` line in `./templates/scoreboard.html`.

⁹ Note: The prompt will disappear quickly, due to the screen refresh. It might take a couple attempts to catch the timing right.

Table 5 - Operating Instructions - The Game

1.	<p data-bbox="323 331 576 365">THE GAME - USE</p> <p data-bbox="323 405 616 439">Application Overview</p> <p data-bbox="323 445 1485 562">The Flight Simulation Game application is the game itself. As the player cycles, this is the program which tracks and displays the player's profile to the screen in front of the player. Player management is controlled by the Queue Manager / Scoreboard application.</p> <p data-bbox="323 595 624 629">Application Operation</p> <p data-bbox="323 636 1187 669">Once invoked, the application will wait until a player is selected for play.</p> <p data-bbox="323 703 1433 777">A player is selected for play using the Queue Manager / Scoreboard application. (For further instruction refer to section Table 4 - Operating Instructions - Scoreboard.)</p> <p data-bbox="323 810 1385 884">To start the game for a selected player, the player must press the "START" button on the handlebars of the bike.</p> <p data-bbox="323 918 1406 992">The game will run for 90 seconds. When complete, the player's score is displayed, and the program resets and waits for the next player.</p> <p data-bbox="323 1025 1120 1059">Function keys are used to control the behaviour of the application.</p> <ul data-bbox="371 1093 839 1126" style="list-style-type: none">• ESC = Exit the application and close
----	---

Appendix A - Hardware List¹⁰

Table 6 - Full Setup

FUNCTION	MACHINE TYPE	HOSTNAME	IP ADDRESS	USERNAME	PASSWORD
MySQL Database Server	Dell Latitude E5530	n/a	192.168.123.40	root	Password!1
MySQL Database Server				admin	Adm1n.01
Flight Simulation Game	Raspberry Pi 3	raspberrypi	192.168.123.50	piclub	Clubber5!
Queue Manager / Scoreboard	HP Probook 6560b core i5	piclublaptop01	192.168.123.61	piclub	Clubber5!
User Registration	HP Probook 6560b core i3	piclublaptop02	192.168.123.62	piclub	Clubber5!
Controller / Monitor	Dell Latitude E5530	piclublaptop03	192.168.123.63	piclub	Clubber5!

Table 8 - Condensed Setup

FUNCTION	MACHINE TYPE	HOSTNAME	IP ADDRESS	USERNAME	PASSWORD
Flight Simulation Game	Raspberry Pi 3	raspberrypi	192.168.123.50	piclub	Clubber5!
Controller	Dell Latitude E5530	piclublaptop03	192.168.123.63	piclub	Clubber5!
User Registration					
Queue Manager / Scoreboard					
MySQL Database Server				root	Password!1
MySQL Database Server				admin	Adm1n.01

¹⁰ All blank fields are 'same as above'.