

## GUI Report:

The GUI report describes and justifies the design decisions taken for the initial implementation of the game. The report will summarise a range of GUI elements, such as the map, sector icons, highlighting of sectors and the control scheme.

The main interface that the user will encounter whilst using the game is the campus map (REQ-5.1). The map is separated into a number of sectors, which are outlined by thick, black lines to allow the user to easily see the sector boundaries. Also, sectors containing university colleges, which provide a player bonus, are highlighted in the colour of the college, for example Langwith sectors are yellow. The remaining areas of the map have not been highlighted, making the sectors clear for the user, as there is no confusion about which sector belongs to which college, improving playability.

To prevent the game from being overly complex and confusing for the user, the map was designed to be simple. This was achieved by using a minimal number of colours, for example, by ensuring that all of the buildings are the same colour. Also, the colours chosen are not fully saturated, so that the map does not stand out, and reds/ magentas are not used as these can cause more eye strain because they lie on the edge of the range of colours humans can see (NFRQ-1.2). Additionally, minor roads and paths have been removed and many of the residential buildings around the campus are not shown, making sure that the focus of the map remains on the university.

Each sector has a coloured circle in the centre, which identifies the player that the sector belongs to. This method has been chosen because REQ-6.2 states "the graphical user interface shall display ... a representation of the sectors, sector ownership and number of gang members in each sector," and these sector icons display ownership by changing their colour to match the player's colour. Additionally, the colours of the circles are not fixed and can change for every game. Although this does not have a crucial effect on the game, if a player has difficulty with some colours they will be able to start the game again to find colours they prefer.

Players allocate the number of gang members they want by using a simple text box that is clearly visible on the screen (REQ-1.2). The textbox is accompanied by a counter to show how many unallocated gang members a player has remaining, counting down from the maximum. This improves playability by allowing the player to always know how many gang members they have left to allocate.

The players control the camera to navigate the map by using a cursor, allowing the user to follow the map with their eyes more naturally than with a keyboard. The majority actions, including selecting sectors and interacting with the map, are performed using the cursor, although a keyboard is required when typing the number of gang members being allocated to a sector. Using a cursor instead a keyboard makes the game much more intuitive, meaning that there is no need to be told which keys to press for which actions and the user is more likely to already know how to conduct actions with a cursor. Also, both playability and usability are improved because it is a lot easier to share a mouse between a group of people, compared to a keyboard.

When playing the game, users have to click on a sector they own, which highlights the valid enemy sectors in red. This feature was included because REQ-2.1 describes how the system must show the available sectors that can be attacked from a selected sector. When attacking, the slider game appears on screen and is separate from the map, which allows the player to more easily focus on the mini game and improves playability.

Features such as pause/save the current game and other menu features would also be part of the GUI but at the current implementation stage, these features are not yet seen. Further implementation would also provide a warning message to the user to take breaks.