Updated Requirements for Assessment 2

Relevant requirements for this assessment have been colour coded, indicating the degree of their completion.

- Red text represents a requirement that has not been met or only partially completed.
  A description of the issues that stopped the requirements from being completed will follow (in italics).
- Completed requirements will be colour coded green.
- Requirements that have been altered will be colour coded purple.
  An explanation of the changes will follow (in italics).
  The new requirement will follow below (colour coded blue).

ID	User Requirement	ID	System Requirements	Fit Criteria	Justification, Assumptions, and associated NFR(s)
1	The amount of violence the user experiences in the game shall be minimal.	**NF1.1**	The game shall not display any graphic violence.	The customer shall be satisfied that the game is not too violent.	Extracted from the brief and discussed with the customer.
2	The user shall be able to save and pause the game at any time.	**F2.1**	The system shall store the current state of the game to a file when the user saves.	After saving a save file shall be present on the user's drive.	Extracted from the brief and developed from Use Case 2. This assumes that the game has appropriate file system permissions. **(NF2.4)** The save operation shall be completed in under 10 seconds.
		F2.2	Save files created should contain all information needed to reload a game.	A loaded save shall mirror the game at the point that save was created.	
		F2.3	Pausing the game shall pause the game timer and display a pause menu with basic options.	Pressing the pause button shall cause the game to pause as described.	
3	The game shall have a sector containing the PVC (Pro Vice Chancellor) and the user shall be awarded a bonus for capturing it. The PVC shall be a member of university staff.	**F3.1**	The map shall have one AI controlled sector containing the PVC (Pro Vice Chancellor).	Between the start of a game and the elimination of the neutral AI, the PVC shall be captured.	Extracted from the brief, discussed with the customer, and developed from Use Case 3.
		F3.2	The sector containing the PVC shall be randomly determined at the start of the game.	Multiple game loads shall produce different PVC locations.	
		F3.3	The location of the PVC is initially hidden and only revealed on first capture.	A new game map shall not indicate the PVC location.	
		F3.4	The system shall award a bonus for both initial and subsequent captures of the PVC.	All captures of the PVC sector shall trigger the award of a bonus.	

4	When the user captures the sector containing the PVC a mini-game shall be unlocked.	**F4.1**	The system shall include a mini-game, which is playable after the initial capture of the PVC.	Capturing the PVC shall unlock the mini-game.	Extracted from the brief, discussed with the customer, and developed from Use Case 3.
5	The user shall be able to choose which UoY college they want to play as.	**F5.1**	The system shall display a list of playable colleges before the game starts.	When a new game is being started, the list of colleges displayed shall match those the user can play as.	Extracted from the brief, discussed with the customer, and developed from Use Case 1.
		F5.2	The system shall allow the user to select which college they want to play as.	Selecting a college from this list shall start a game with the user playing as that college.	
		F5.3	The system shall represent different colleges in the game using identifiers such as logos and colours.	Each in game college's logo and colour shall match those of the real-world college.	
6	The game shall start with both players having an equal number of sectors and gang members. All sectors not under player control shall be controlled by the game until they are taken over by a player.	**F6.1**	At the start of each game the system shall randomly allocate sectors to the two players and a neutral AI.	Multiple game loads shall produce different sector allocations.	Extracted from the brief, discussed with the customer, and developed from Use Case 1. **(NF6.5)** The game shall take no longer than 30 seconds to generate and display the starting conditions of the map.
		F6.2	The neutral AI shall start with more sectors than the players.	At the start of the game the number of AI controlled sectors shall be greater than the number controlled by each player.	
		F6.3	The neutral AI shall not receive reinforcements.	The system shall never allocate new gang members to AI sectors.	
		F6.4	The neutral AI shall only defend its sectors.	The AI shall never attack a player controlled sector.	
7	The user shall be able to receive new gang members on each turn and also by converting collected bonuses.	**F7.1**	Each turn the system shall calculate how many new gang members to allocate to the player and then allocates those gang members. *This has been partially implemented because, at this stage in the assessment, we have not implemented the player class. At present, the system calculates the number of gang members to allocate, but does not allocate them.*	The number of gang members allocated should match the calculated number of gang members to be allocated.	Extracted from the brief and discussed with the customer.

		F7.2	The system shall show the user the number of gang members they are eligible to receive based on the quantity of bonuses they have collected.	The number of gang members a user is eligible to receive shall match that calculated by the system based on bonuses.	
8	Each turn the user shall be able to end their turn by attacking a sector held by another player, moving within held sectors or passing.	**F8.1**	The system shall present the user with multiple options on each turn, though one of attack, move or pass is needed to end the turn.	The turn shall only progress if attack, move or pass is selected by the user.	Extracted from the brief, discussed with the customer, and developed from Use Case 1.
9	When the user attacks another sector, they should get control of that sector and a bonus if they win or potentially lose gang members if they lose.	**F9.1**	The system shall be able to calculate and compare the relative strengths of the opposing teams to calculate the outcome of the conflict when one team attacks a sector held by the other.	The outcome of conflict shall be reflective of the strengths of the opposing sides.	Extracted from the brief and discussed with the customer. **(NF9.5)** The system shall calculate and return the outcome of an attack within 2 seconds.
		F9.2	An attack shall be considered successful if all of the defending gang's members are lost in the conflict.	An attack where all of the defending gang members are lost shall trigger the relevant events, such as sector reallocation.	
		F9.3 (Old)	If an attack is unsuccessful, then one or both gangs shall see a loss of gang members but no sector control changes shall occur. *For game design reasons we decided that, when conflict occurs, one side should lose all of their units on the relevant sector.*	An attack where both teams are evenly matched shall result in both teams losing some gang members.	
		F9.3 (New)	If an attack is unsuccessful, then the attacking gang should lose all units used in the attack.		

		F9.4	When the user successfully attacks a sector, the system shall reallocate the sector to being under the user's control and the user shall receive a bonus at the end of their turn. *This has been not been implemented as the conflict resolution class does not perform reallocation. Instead the class that calls conflict resolution will perform the sector reallocation, this class is not yet implemented as it is not required for this part of this assessment. The bonus has not been implemented as the player class is required to assign bonuses and we have not implemented the player class in this part of the assessment.*	An attack where the player is successful shall result in the relevant bonuses being awarded and sector reallocation.	
10	The user shall be able to allocate new gang members to sectors under their control.	**F10.1**	The system will keep track of the number and affiliation of gang members in each sector.	The stored information relating to the number and affiliation of gang members shall match with what's displayed on the map.	Extracted from the brief and discussed with the customer.
		F10.2	The system shall allow users to add new gang members to sectors under their control and move gang members between them. *This requirement will not be implemented in this part of the assessment as it is dependent on the player class, which is not implemented in this part of the assessment.*	There shall be options that, when selected, shall result in a change in the position or number of gang members in sectors.	

11	The user should be able to view and interact with the map	**F11.1 (Old)**	The game shall display a map of the UoY campus, split into a number of unequal sectors each representing a campus landmark, along with information about the current state of the game. *The map has changed as a result of difficulties we encountered in designing and programming the GUI. Using square tiles to represent the sectors made designing and programming the GUI easier. We also made the design choice that that not all sectors should represent landmarks.*	Correct information relating to the current state of the map and game shall be displayed to the user; this shall match the information stored by the system.	Extracted from the brief and discussed with the customer. The assumption is that the player is using a monitor to view the game, and a mouse and keyboard to interact with it. **(NF11.3)** Any delay when the user interacts with the map (or interface) shall be minimised.
		F11.1 (New)	The game shall display a map of the UoY campus, split into a number of sectors, represented by square tiles. Some of the sectors shall be situated on university landmarks. The map shall display information about the current state of the game.		
		F11.2	The game shall provide an interface through which the user can interact with the game. *The requirement has been completed to the extent that we have created a functioning GUI. However this GUI cannot be used to affect changes to the game as this requires the implementation of classes that were not required for this part of the assessment.*	When running, the game shall display interfaces that match what is set out in the design documentation.	
12	The game shall end when only one gang remains, the turn limit has been reached (in which case the winner is the player with the most sectors at that point) or a player forfeits the game.	**F12.1**	When the system detects that the end condition has been met, the game shall end and a summary of the game statistics shall be displayed to the user.	Reaching an end condition shall trigger the ending events of the game.	Extracted from the brief, discussed with the customer, and developed from Use Case 1.

Bibliography

[1] Customer interview questions Link

[2] Use Case Download Link

[3] A. Cockburn, *Writing Effective Use Cases*. Addison-Wesley, (2001).

[4] K. Wiegers, *IEEE Software Requirements Specification Template*, (1999). Available: https://www.ce.yildiz.edu.tr/personal/kalipsiz/file/28827/IEEE830.pdf [Accessed 18th October 2017]

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