

Requirement Tests

Requirement ID	Test Description/Success Criteria	Result	If fail: Additional Notes	Evidence ID	Related Unit Tests
C1	The game must be complete and delivered by 7th May 2018.	N/A	The game's code was completed on the 30th March 2018 and has been tested during and since its coding development. The game will be delivered on the 7th May.		
C2	The game shall be run 100 times. The game will pass the test if it crashes once or less.	Pass			
C3	The frame rate when running the game will be measured. To pass the test the game must run at 26 frames per second or greater at all times.	Pass		C3	
C4	The game shall be played on a computer. To pass this test, the computer should not be damaged afterwards and the user should suffer no health issues resulting from the game.	Pass			
C5	The executable for the game must not exceed 1GB.	Pass		C5	
C6	The game will be launched on a computer running windows 10. To pass the game should function as intended.	Pass		C6	
N1	All documentation must have a minimum size of Arial 10px and at least 2 cm margins. The code's spacing and indentation must follow the same format. Naming of methods/attributes must be consistent, and all methods should be commented.	Pass		See appropriate files.	
N2	Look through the code. It should be separated into a number of classes, each with a distinct role. The code should not contain "god" classes.	Pass		N2	
N3	Test if there can be 4 human players in each game.	Pass		N3	G1, G2, G3, G4, G5, G13,

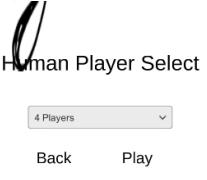
					G14, P10, P11, P12, P13, P14, P15
N4	Test if the game map represents the University of York campus.	Pass		N4	
N5	The game map should be divided into sectors. To pass there should be at least 4 sectors.	Pass		N5	
N6	Some sectors must be designated as landmarks. Each landmark must be associated with an amount of resources.	Pass		N6	G11, P1, P2, P3, P4
N7	Each of the four landmarks within the game must outline university landmarks. The position of each landmark was compared with a map of the campus to see if it was on top of a university building.	Fail	The landmark in the center of the map and the landmark in the top center of the map are not recognisable, possibly due to their incorrect position.	N7	
N8	Run a new game and see if the sectors are clearly outlined. Then test if units are visible on the screen, and then see if it is clear which player owned which sector.	Pass		N8a, N8b.	S3, S4, S10, S11
N9	To test if conflicts are resolved correctly using weighted random the extremes will be tested. A level 5 unit with 4 beer will attack a level 1 unit with no knowledge 20 times. A level 1 unit with 0 beer will attack a level 5 unit with 4 beer 20 times. If the attacking level 5 unit wins more than it loses and the attacking unit loses more than it wins the test will pass.	Pass		N9	P5, S6, S7, S8, U2, U3
N10	To test that all players (human/computer) can obtain both types of unit, play the game with 2 human players and 2 computer players, allowing them to level up a unit to 5. Then see if all players own postgraduate units.	Pass		N10	
N11	A new game will be started with four human players and each punishment card will be activated. When this occurs, it is	Pass		N11a, N11b, N11c, N11d.	C4, C8, C9

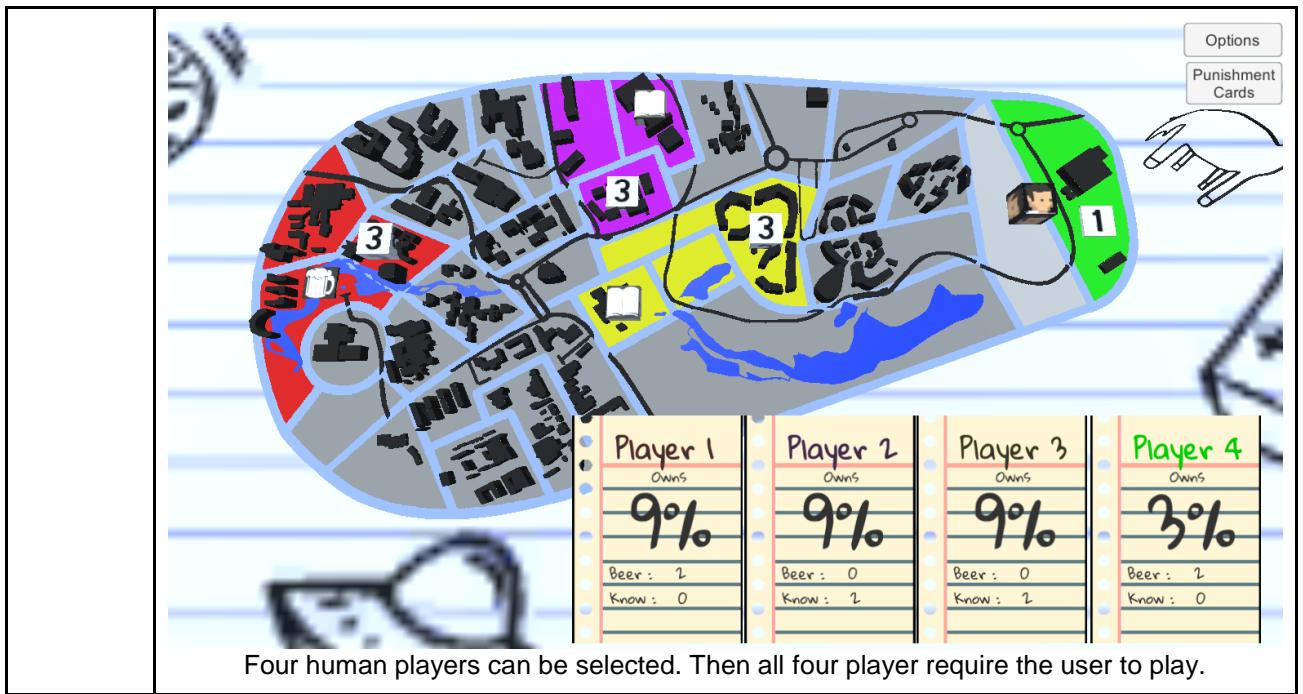
	recorded whether the punishment card penalises one or more players.				
F1	The game will be launched with two human players. Test is passed if the 2 players not controlled by humans are controlled by the computer.	Pass		F1	G1, G2, G3, G4, G5, P10, P11, P12, P13, P14, P15
F2	Test if minigame launches correctly by trying to enter the minigame.	Pass		F2	G16, G17
F3	The game will be launched with 4 human players and the players will cover all unclaimed sectors to check for the PVC. Test is passed if the minigame launches upon capturing a sector containing the PVC	Fail	Once the sector containing PVC is captured, the player who captured it has to click on it to launch the minigame. If it's the second move, the player does not get a chance to play the minigame until it's their turn again.	F3	V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11
F4	The PVC will be captured by a player. The test will be passed if capturing the PVC and winning the minigame results in a bonus for the player.	Pass		F4	V5, V6
F5	A player will click on a sector that is occupied by their unit. They will then try to move their unit into an unoccupied sector. The player will then try to capture a sector occupied by another player that contains no units. If both these sectors are captured successfully the test will be passed.	Pass		F5	G15, P1, P2, P3, P4, P5, P10, S1, S5, S6, S7, S8, S9, U4, U5, U6, U7, U9
F6	The test will be passed if upon starting a new turn players receive a new unit at landmarks they don't already have a unit on.	Pass		F6	P7, P8, P9
F7	The game should be able to be paused, loaded, and saved.	Pass		F7	
F8	Load a new game with four human players. Play the game for 3 turn cycles, activate a freshers flu card, then save the game. Exit the game and load the save. Test whether the player's card deck is the same and if the freshers flu card is still	Pass		F8	

	active.				
F9	Play a new game until Player 1 receives a postgraduate unit and then save the game. Load the saved game and test if the postgraduate exists and is able to use it's ability.	Pass		F9	
F10	Play a new game until a player has both an undergraduate and a postgraduate unit. The units are moved to see if the postgraduate unit can move to any player-owned sector, as well as adjacent ones.	Pass		F10	U10, U11, U12
F11	The system should provide at least 3 types of punishment card.	Pass		F11	D1, D2, D3, D4, D5, D6, D7, D12, C1, C4, C8, C9
F12	The system shall provide a mechanism for players to obtain punishment cards.	Pass		F12	P16, D1, D2, D13
F13	Both human and computer players must be able to activate punishment cards.	Pass		F13	P17, P18, P19, D1, D13, D14, D15, D16, C4, C5, C6, C7, C8, C9

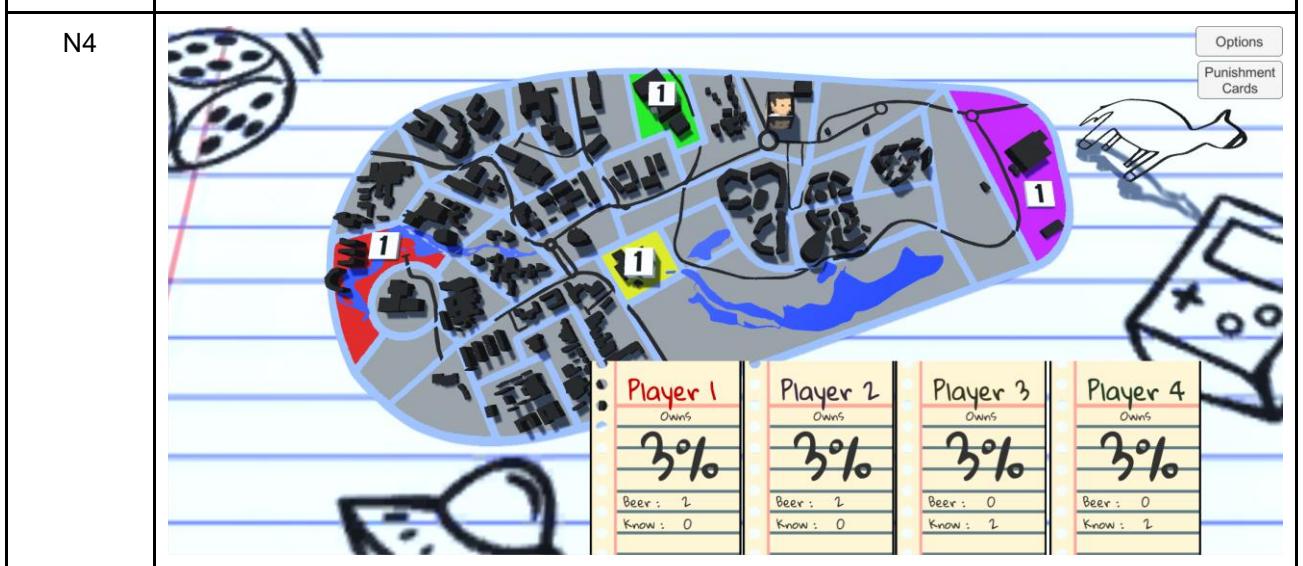
Evidence ID Evidence Of Testing

C3	<p>The number in the left bottom corner of the game represents the number of frames per second. It can be seen that it is greater than 26.</p>
C5	

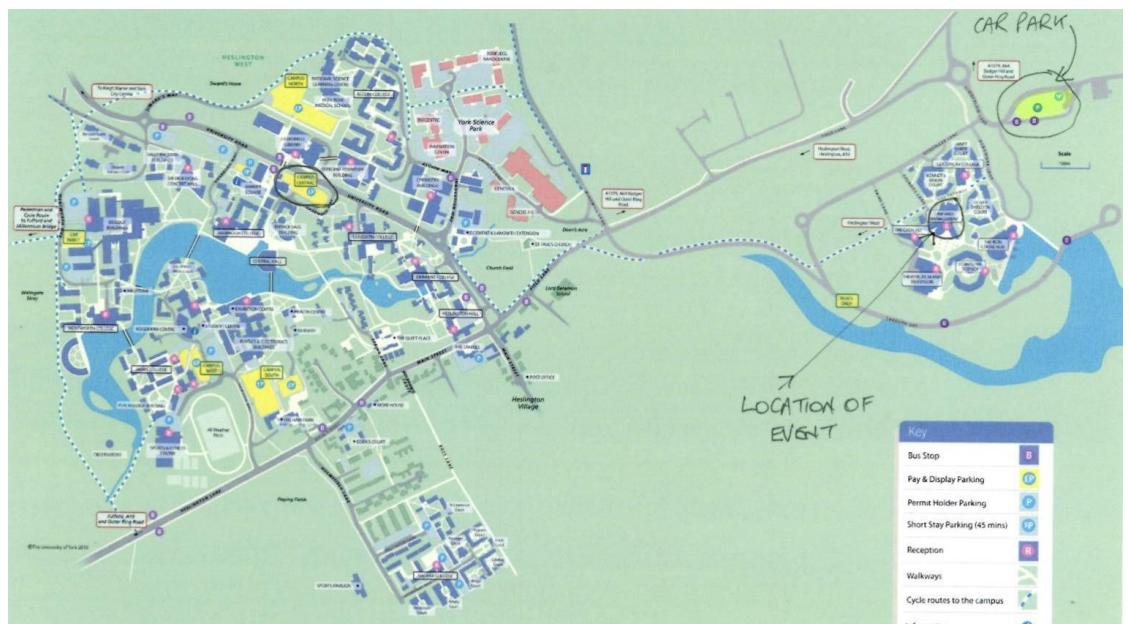
C6	 <p>The game was designed on and runs on windows 10 computers</p>
N2	<p>Going through the code, it can be seen that:</p> <ul style="list-style-type: none"> • Card.cs only performs actions that are directly related to the functionality of individual cards. • CardDeck.cs only displays the card deck of each player and manages all of their cards. • FreshersFluCard.cs implements the functionality of the freshers flu card, nothing more. • Game.cs manages the state of the game, i.e. player turn, displaying the winner, spawning the PVC, initializing the map, nothing more. • GameControl.cs only implements the saving and loading functionality. • KillerHangoverCard.cs implements the functionality of the hangover card, nothing more. • Landmark.cs allows clicking on landmarks and entering the minigame. • LecturerStrikeCard.cs implements the functionality of the lecturer strike card, nothing more. • MainMenu.cs implements the main menu (selecting the number of players and loading a game), nothing more. • Map.cs only stores the information about the map, nothing more. • NothingCard.cs implements the functionality of the nothing card, nothing more. • Player.cs stores data about a player and implements some of the functionality (capturing a sector, using a punishment card) • PlayerUI.cs only manages the player UI, nothing more. • Sector.cs stores data about each sector and implements various functionalities that can be performed on a sector (e.g. selecting, deselecting a sector) • Unit.cs implements actions that can be performed with units, nothing more. • VolumeChanger.cs only changes the volume in the audio listener.
N3	



Four human players can be selected. Then all four player require the user to play.

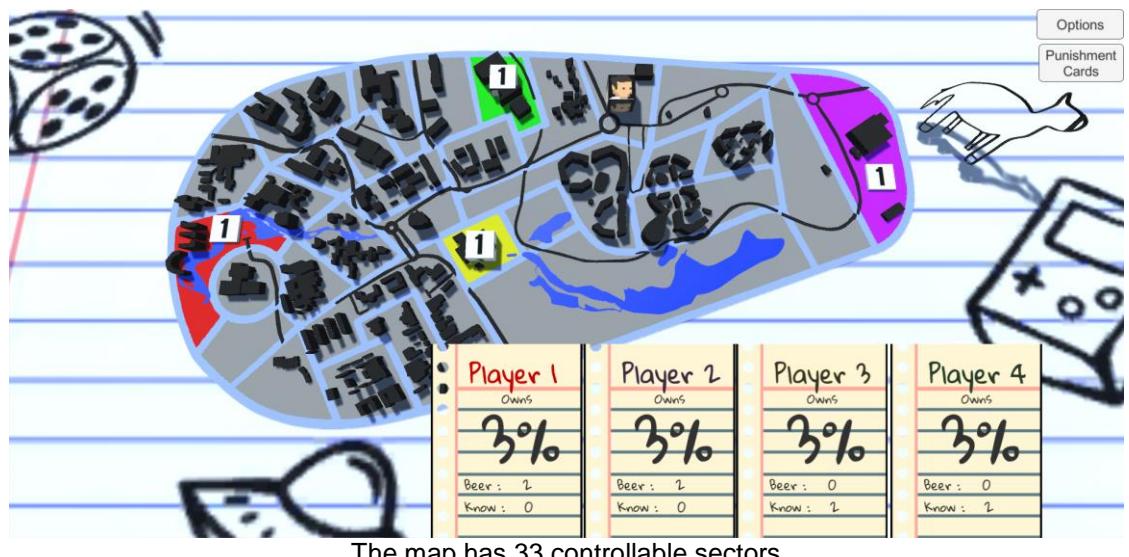


N4

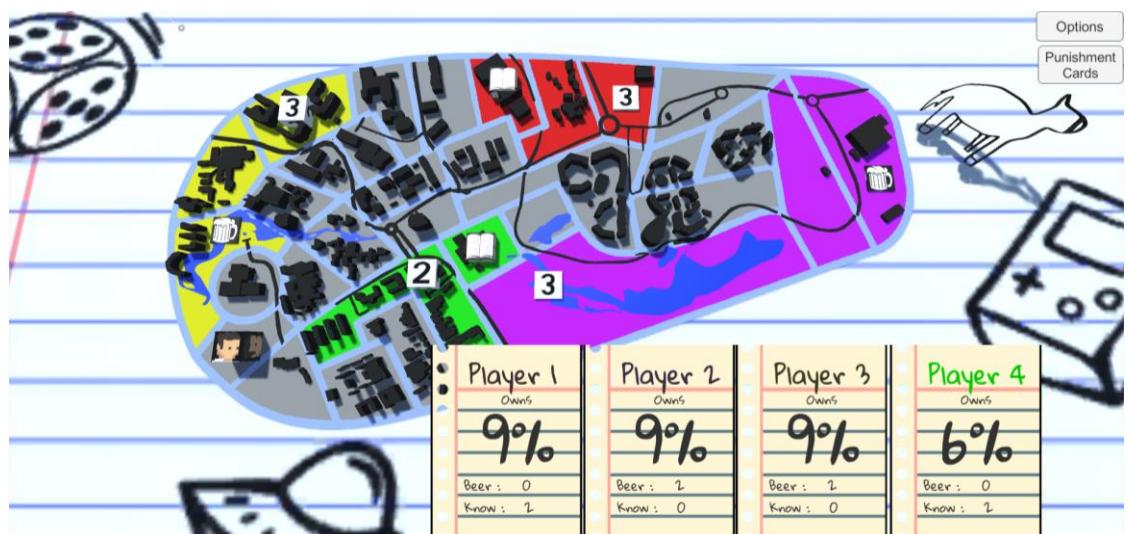


This shows the game map vs an accurate map.

N5



N6

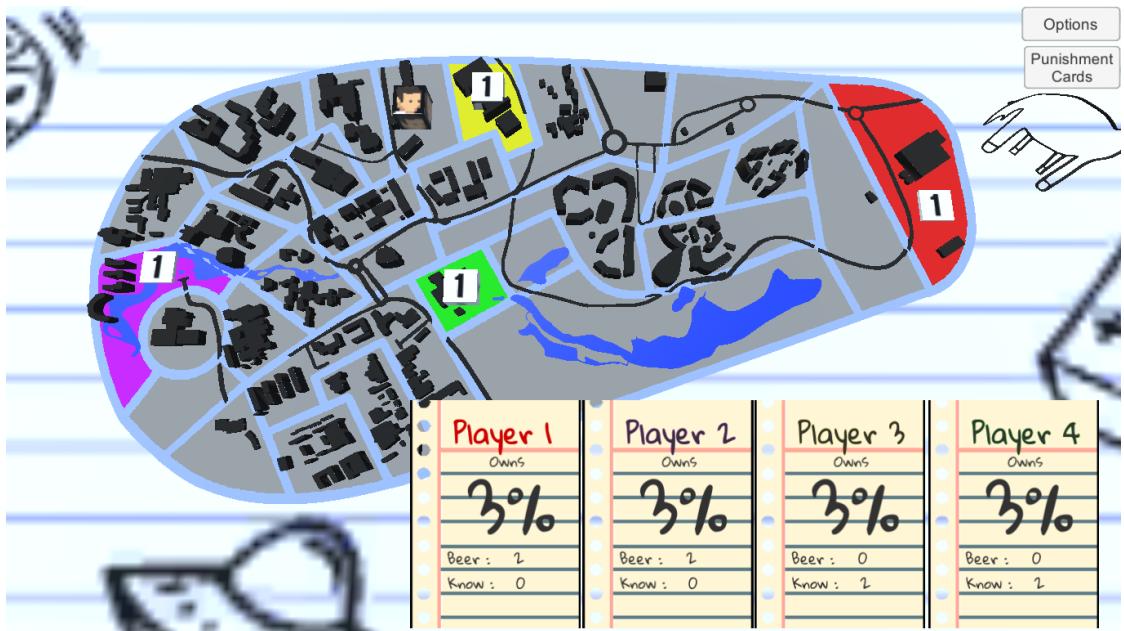


	<p>of beer or a book and give corresponding bonuses as seen on the score cards.</p>																				
N7	<p>It shows the locations of the four landmarks in the game</p> <table border="1"> <thead> <tr> <th></th> <th>Player 1</th> <th>Player 2</th> <th>Player 3</th> <th>Player 4</th> </tr> </thead> <tbody> <tr> <td>Owens</td> <td>3%</td> <td>3%</td> <td>3%</td> <td>3%</td> </tr> <tr> <td>Beer :</td> <td>0</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>Know :</td> <td>2</td> <td>0</td> <td>2</td> <td>0</td> </tr> </tbody> </table> <p>This is the equivalent location of the landmark, which is in the center of the map, in the real map. There is no landmark there.</p>		Player 1	Player 2	Player 3	Player 4	Owens	3%	3%	3%	3%	Beer :	0	1	0	1	Know :	2	0	2	0
	Player 1	Player 2	Player 3	Player 4																	
Owens	3%	3%	3%	3%																	
Beer :	0	1	0	1																	
Know :	2	0	2	0																	



This is the equivalent location of the landmark, which is in the top center of the map, in the real map. There is no landmark there.

N8a



Player 1

Owns

3%

Beer: 2

Know: 0

Player 2

Owns

3%

Beer: 2

Know: 0

Player 3

Owns

3%

Beer: 0

Know: 2

Player 4

Owns

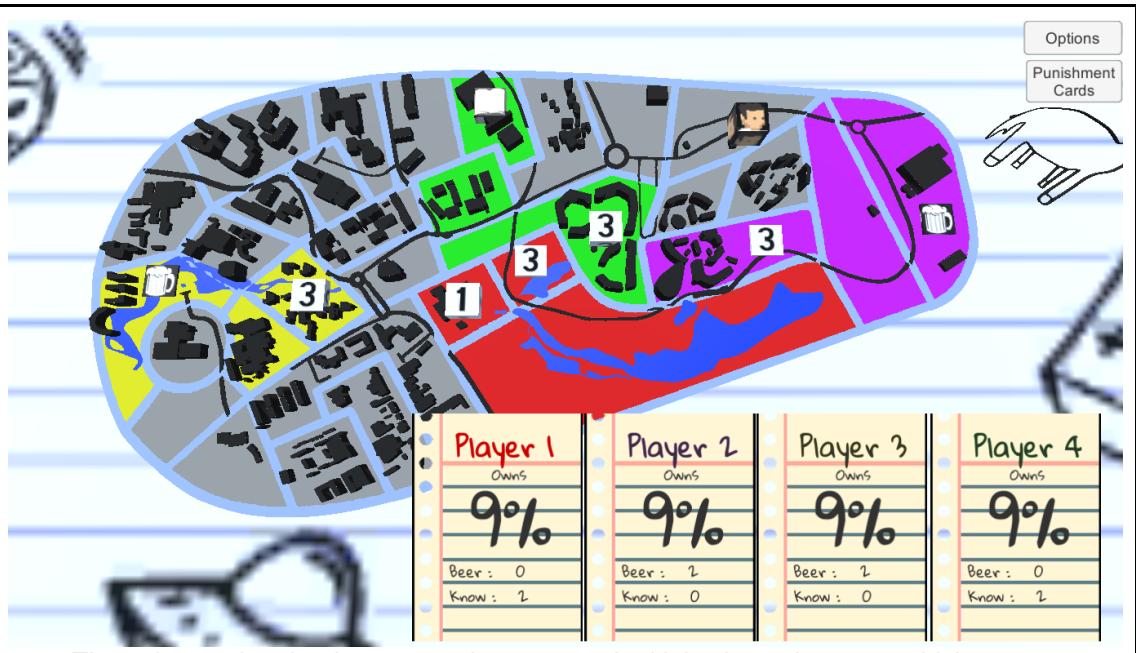
3%

Beer: 0

Know: 2

Sectors are clearly outlined.

N8b



The units can be clearly seen on the sectors. And it is clear who owns which sector.

N9

Level 5 with 4 beer against Level 1 with 0 Knowledge- level 5 won 20 times
Level 1 with 0 beer against Level 5 with 4 Knowledge- level 1 won 1 times

N10



The screenshot above shows that all four players can obtain postgraduate units.

N11a

Strike:



The game before player 1 activates the strike card.



Now Player 2 selects its unit to move.



Player 2 moves the unit once and their turn ends. Player 3 can now have their turn.

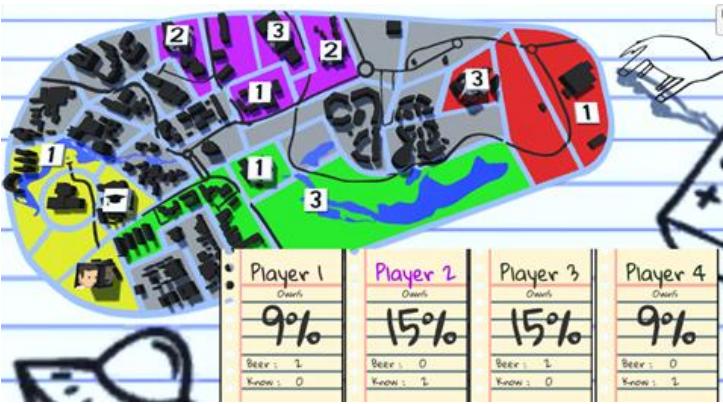
N11b

Freshers Flu:



Screenshot showing the game's state before Player 4 activates a fresher's flu card.



	<p>Screenshot showing the game after the freshers flu card has been activated. Player 1, 2 & 3's bonuses (beer and knowledge) have been set to zero.</p>
N11c	<p><u>Killer Hangover:</u></p>  <p>The game before Player 2 activates the killer hangover card.</p>  <p>The screenshot shows the game after Player 2 makes two moves (1 turn). The current player remains equal to Player 2.</p>  <p>Screenshot displaying the game state after Player 2 completes a second turn. Player 3 is now able to move.</p> <p>Nothing:</p>



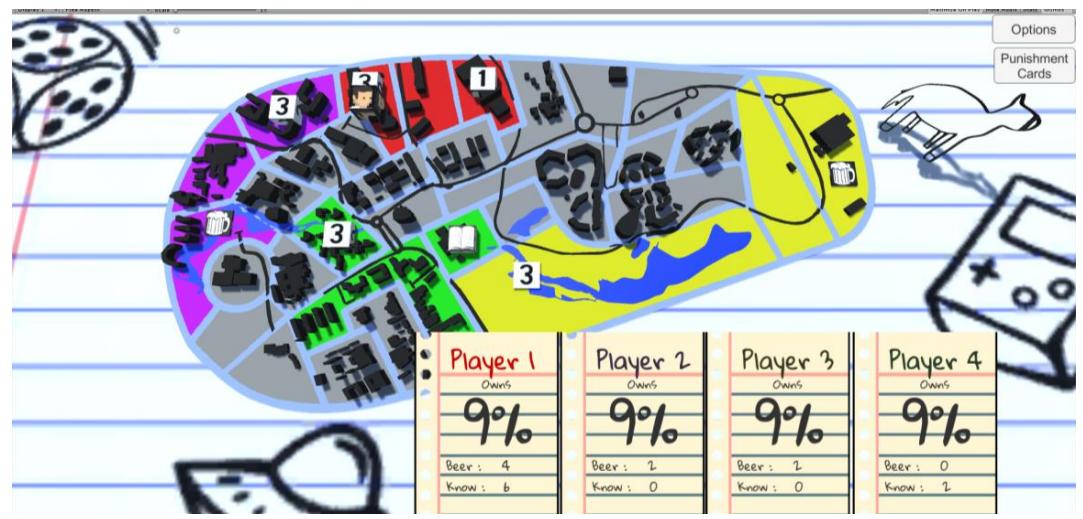
Screenshot showing the game immediately after Player 1 activates a nothing card. Player 1's turn ends, and Player 2 gets to move.

F1



Upon launching a 2 player game the players will be entered into a game where player 3 and 4 are controlled by AI

F2

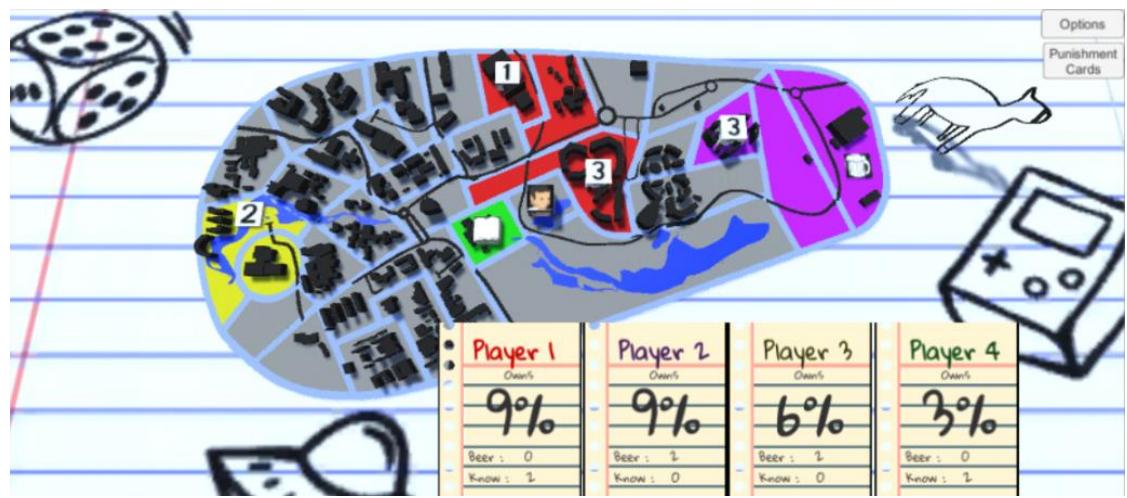


Game state where vice-chancellor is discovered



The minigame is entered upon clicking on the PVC.

F3

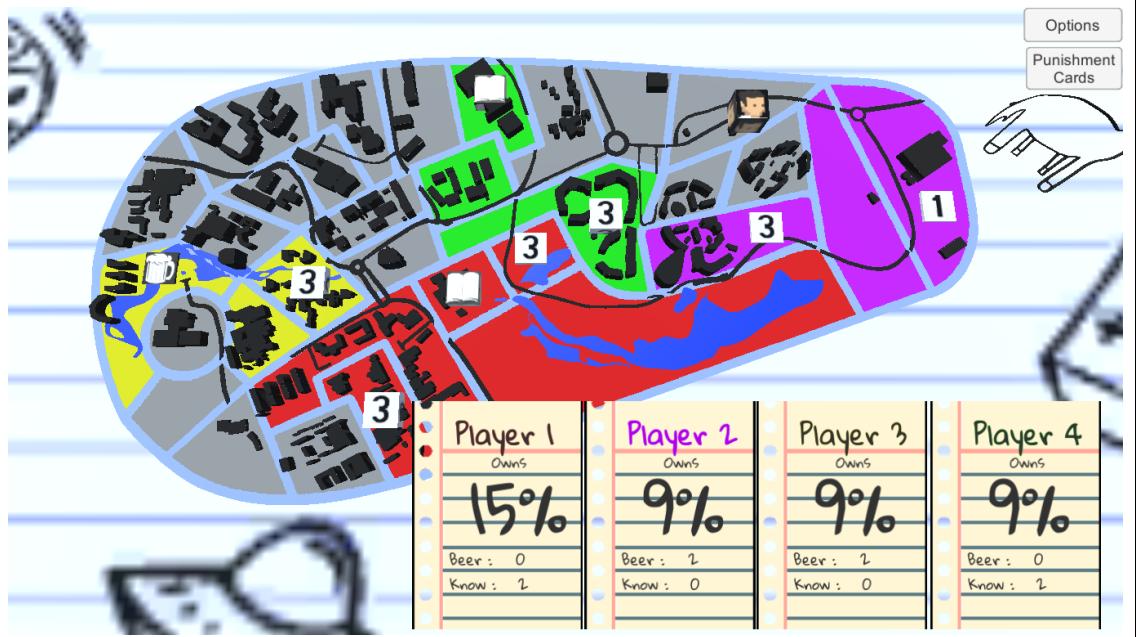


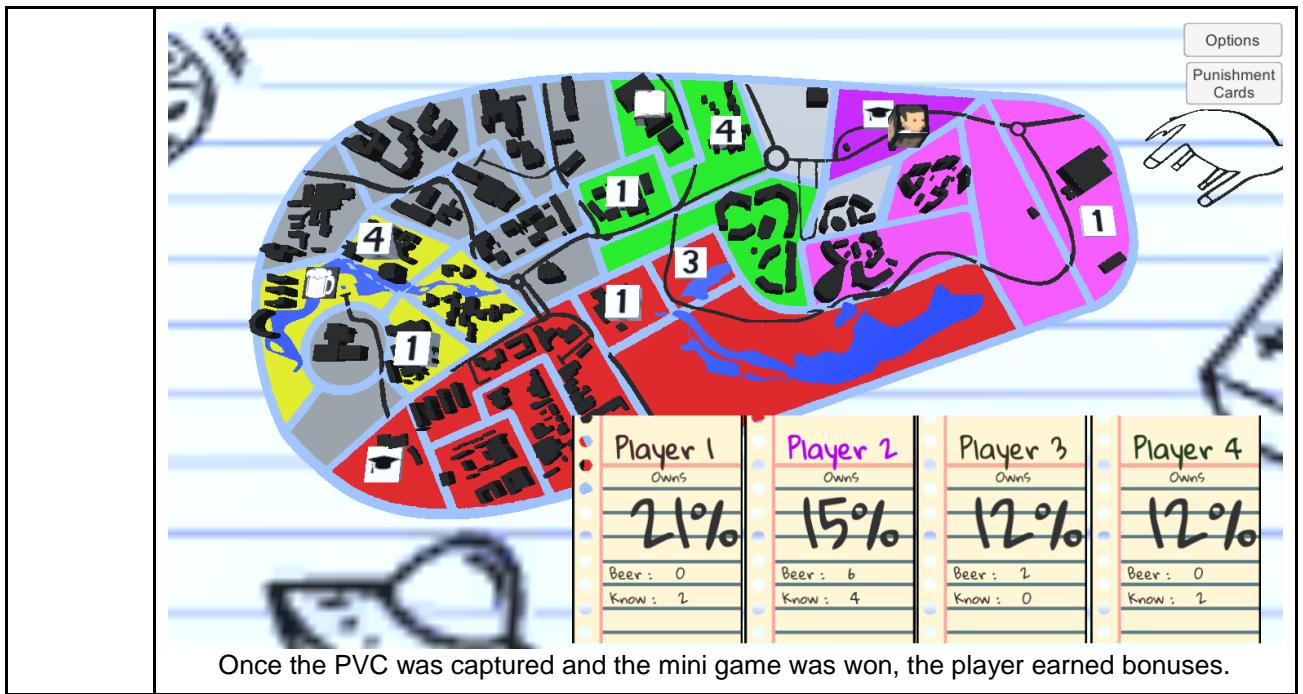
The state of the game just before the red player captures the sector containing the PVC



The state of the game after the red player has captured the sector containing the PVC. The minigame did not start after that. The player has to click on the little head to start the game.

F4

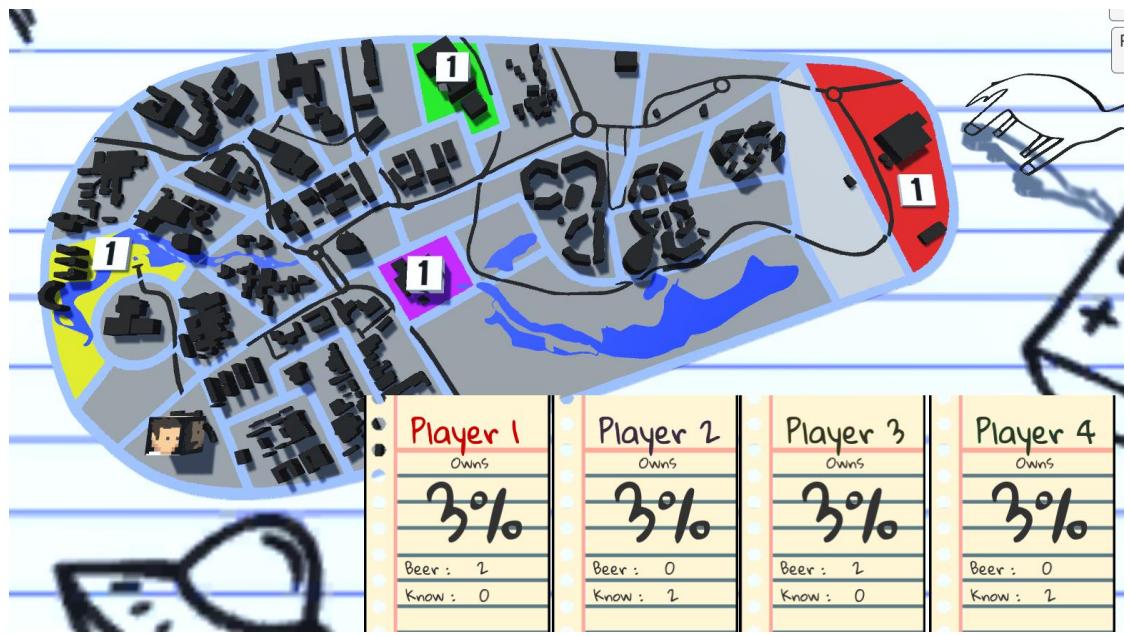


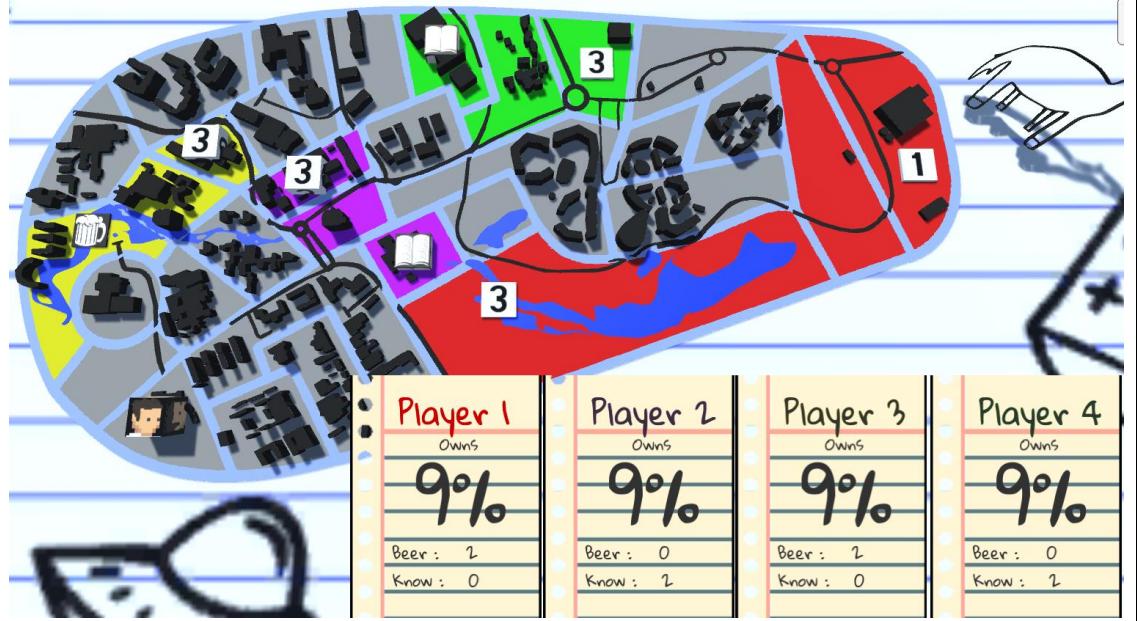




This show yellow first attacking an unoccupied territory and then a territory owned by red but with no units within

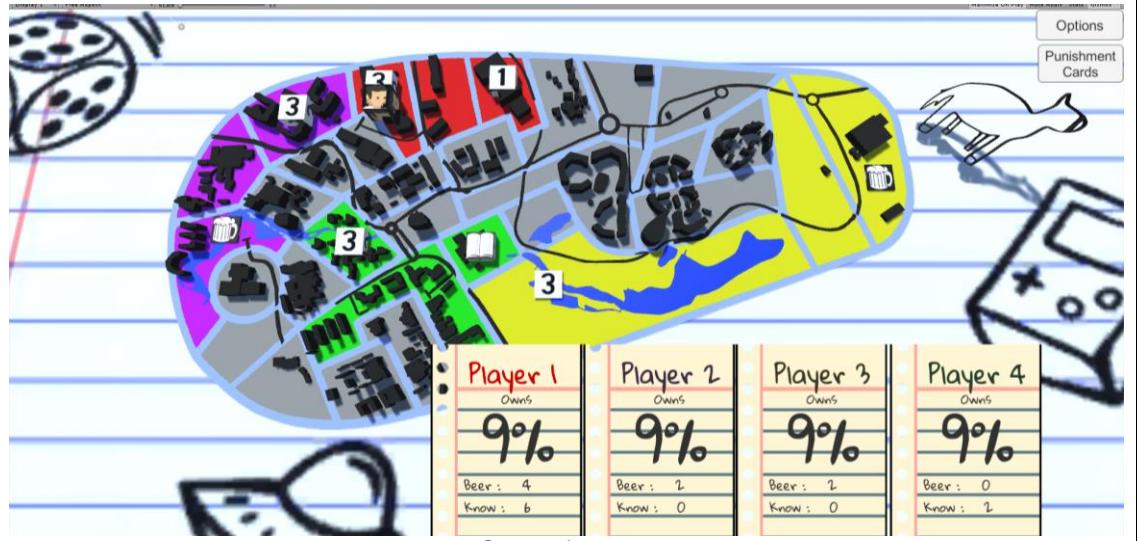
F6



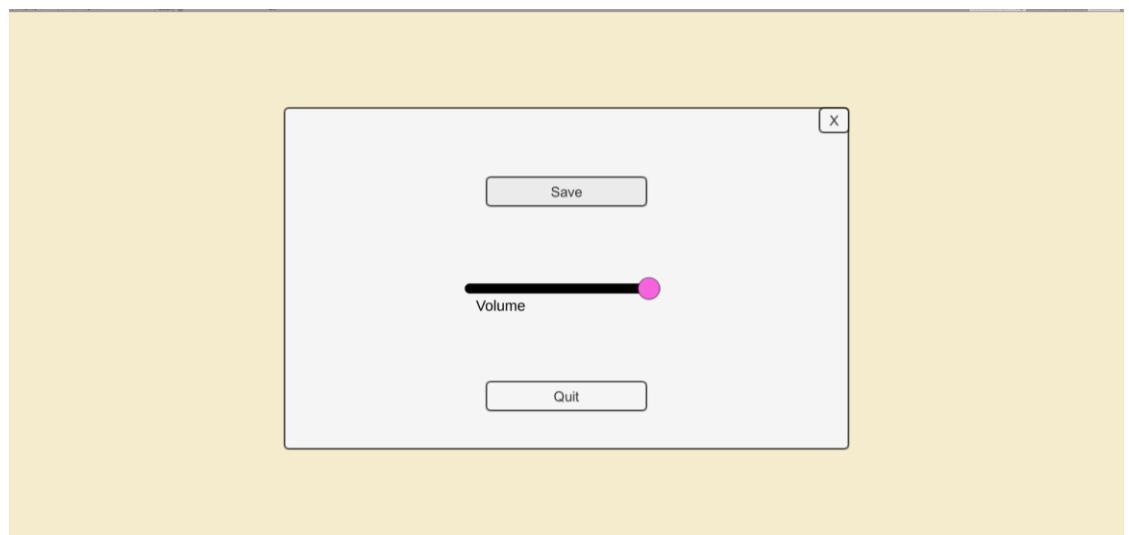


The game state after cycling back to Player 1's turn. A new unit has spawned at the landmark they own.

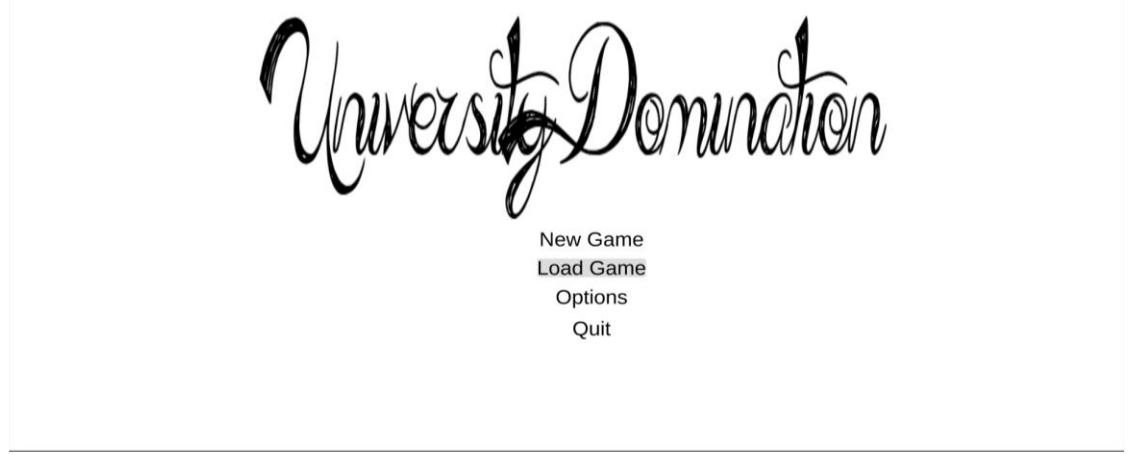
F7



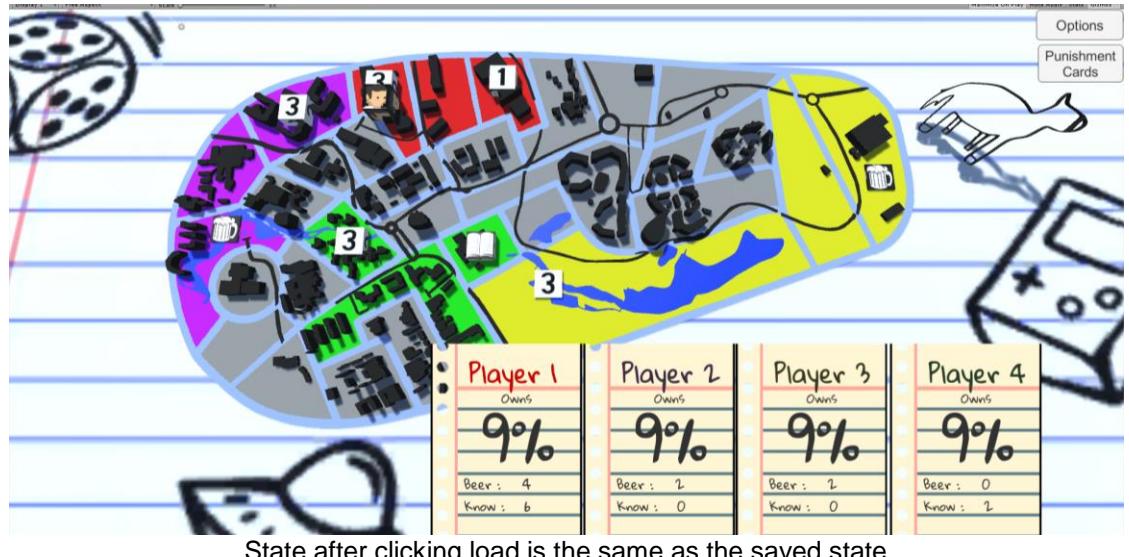
State of game.



Menu with save button



Main menu with load button



State after clicking load is the same as the saved state

F8



The game state before Player 1 activates a freshers flu card.



The game state immediately afterwards.



Screenshot displaying Player 2's punishment card deck.



The game state of the loaded game: The bonuses for Players 2, 3 & 4 remain zero.



The card deck for Player 2. It is identical to the deck before the game was saved and loaded.

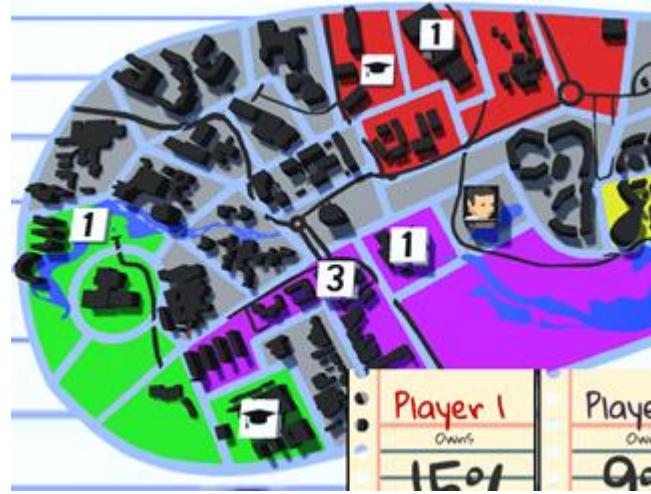
F9



Screenshot showing Player 1 with a postgraduate unit before the game is saved.

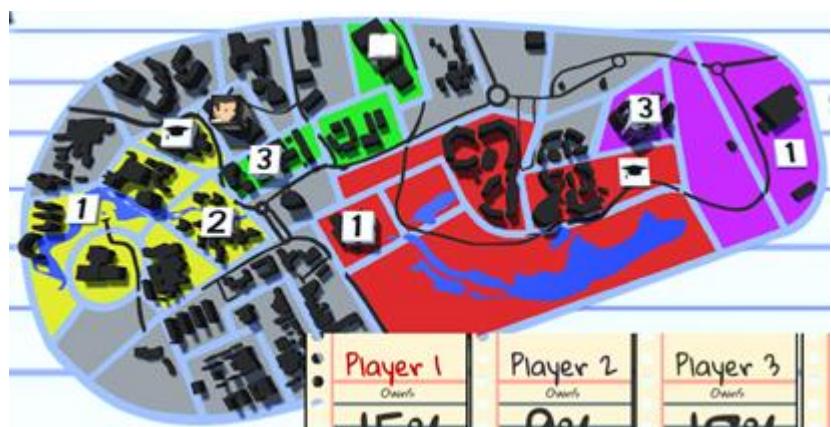


Screenshot displaying the game state after the save game is loaded. Player 1 and Player 4 still have their postgraduate units.

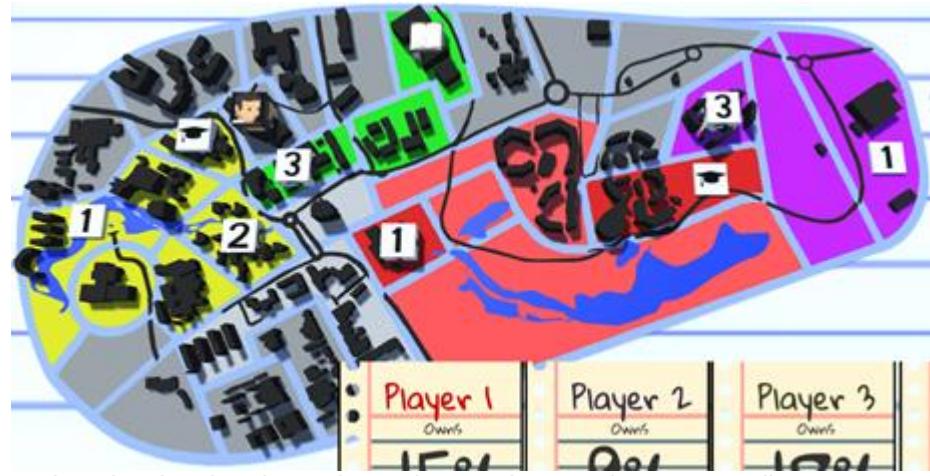


Player 1's postgraduate unit is moved 3 sectors left using its special teleportation ability. Therefore, postgraduate units still work after they have been loaded.

F10



Screenshot showing that Player1 has two types of unit: a level 1 undergraduate and a postgraduate.



Screenshot showing that the undergraduate unit can only move to adjacent sectors (the sectors that are highlighted).



Screenshot showing that the postgraduate unit can move to any player-owned sector, plus it's adjacent sectors.

F11

The screenshot shows a card deck interface with the following elements:

- Options** and **Punishment Cards** buttons in the top right corner.
- A row of four cards:
 - Strike**: Gang members against freshmen.
 - Killer Hangover**: Long night. They could have slept... ...but the killer hangover will keep going.
 - Fresher's Flu**: Infecting gang members with the always-freshener's flu.
 - Strike**: Gang members against sophomores.
- Player 1**: Owns 21% of the map. Beer: 2, Know: 0.
- Player 2**: Owns 21% of the map. Beer: 0, Know: 2.
- Player 3**: Owns 9% of the map. Beer: 0, Know: 2.
- Player 4**: Owns 21% of the map. Beer: 2, Know: 0.

The text "The card deck of one of the players" is centered at the bottom of the interface.

F12

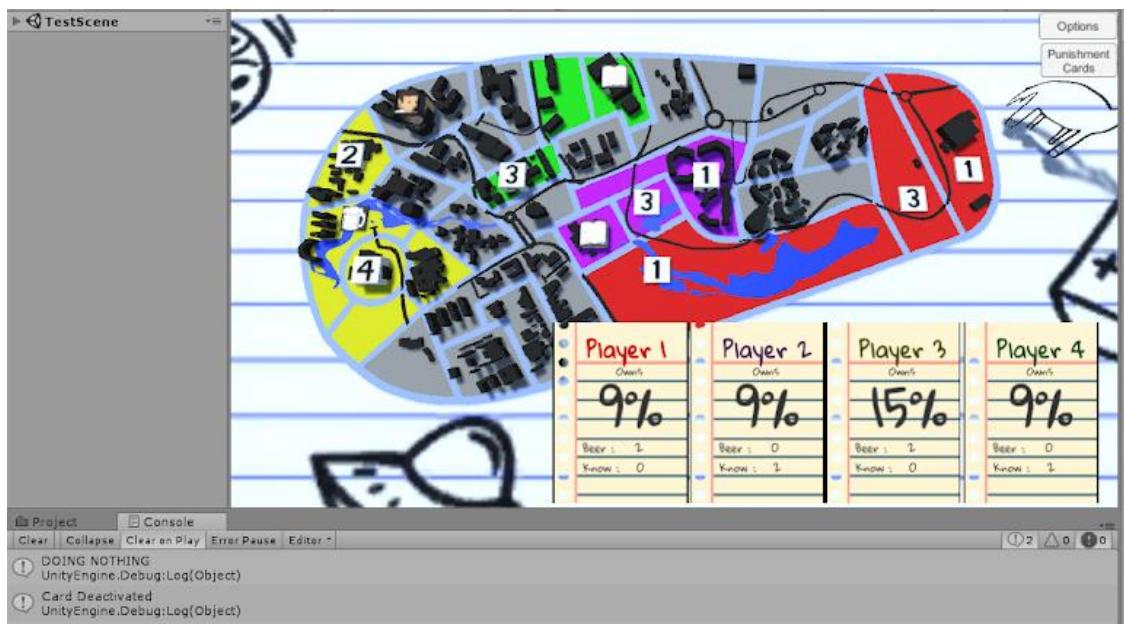


Screenshot showing Player 1's card deck at the start of a new game.

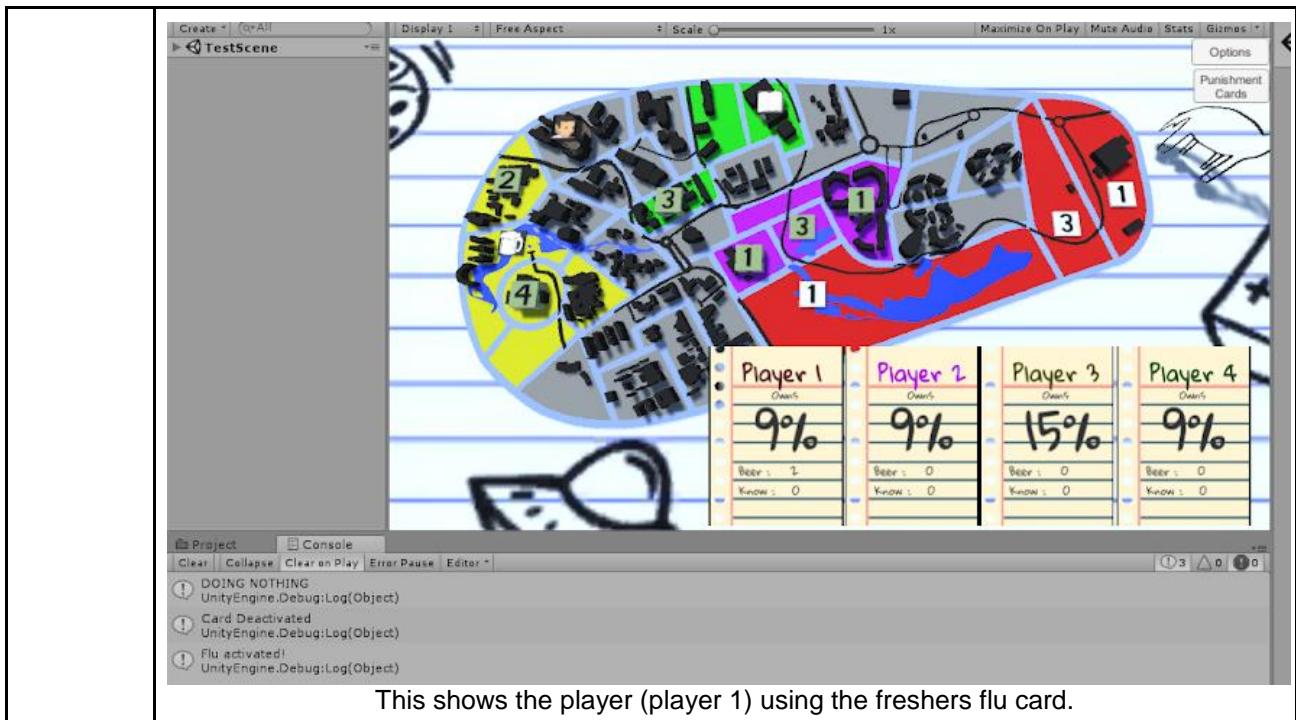


Screenshot showing Player 1's card deck after one turn cycle. Player 1 has gained a Nothing Card.

F13



This shows the computer(player 4) playing the do nothing card



This shows the player (player 1) using the freshers flu card.