ESCORT THE PRESIDENT

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Made with <3 by A1

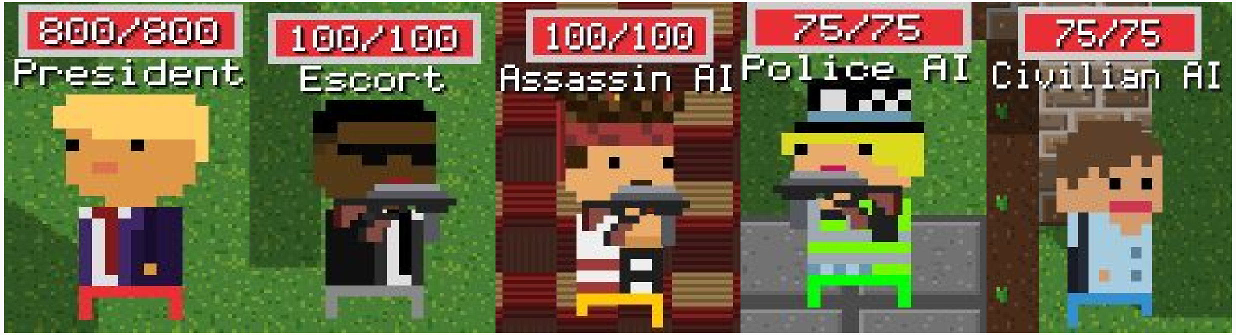
Game Concept

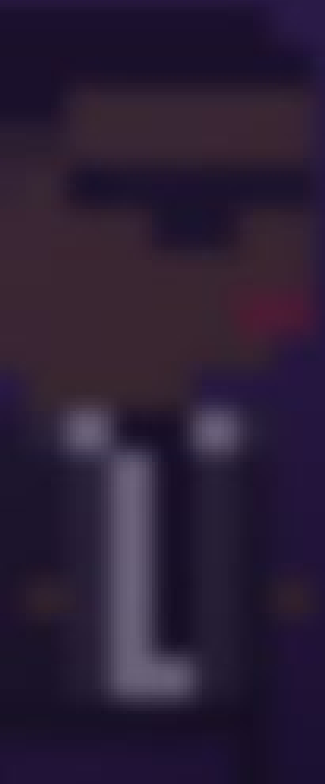
Escorts (with the help of the Police) must take the President to the safe zone before the Assassins kill him.

Characters are heavily armoured with weapons and grenades - **UTTER CHAOS!**

Do you have what it takes to **Escort the President?**

The Characters





Game Features

Weapons and Defense

Shooting is the main way to deal damage to your enemies and each offensive unit has a Pistol and Machine Gun in their possession.

Shields provide protection when it's needed most, by reducing incoming damage from bullets and grenades.

AI

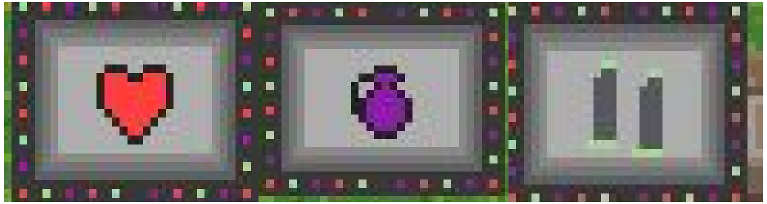
Our AI uses A* search to plan the best path to their desired target tile.

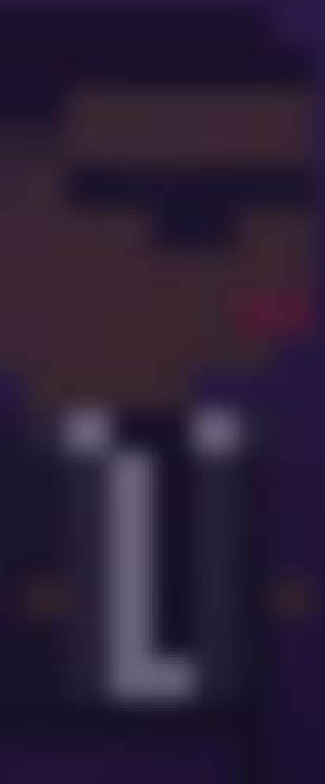
AI target based the closest enemy based on line of sight, with the assassins taking a preference for the president if he is in their line of sight.

Preference on simple but challenging.

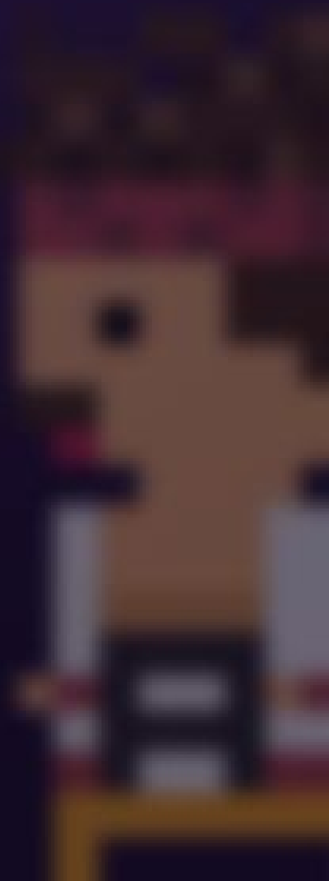
Power-ups

There are three power-ups that can be picked up throughout the course of the game:





Design and Style



Visual Style

Want to relive that **retro, arcade-y** feel?

2.D Graphics

UI components custom made for this game.

UI has gone through many iterations and evolutions.

Sound and Music

Sound effects tailored just for Escort The President.

You'll know exactly when you've stepped on that trusty Power-up.

Stereo-sound implementation relative to camera.

Music suited for intense moments of gameplay.

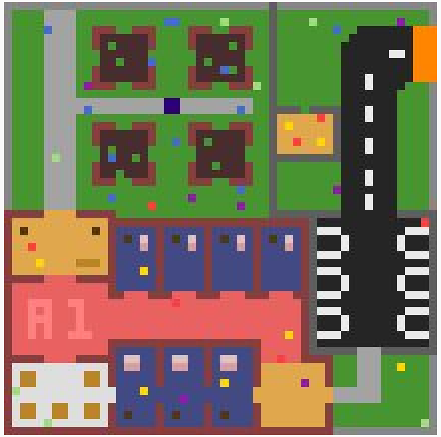
Map Design and Creation

Balanced game play for both Escorts and Assassins.

Want to create your very own map? **It's simple.**

Modifiable mapcode where each pixels corresponds to tiles.

Displayed on radar.

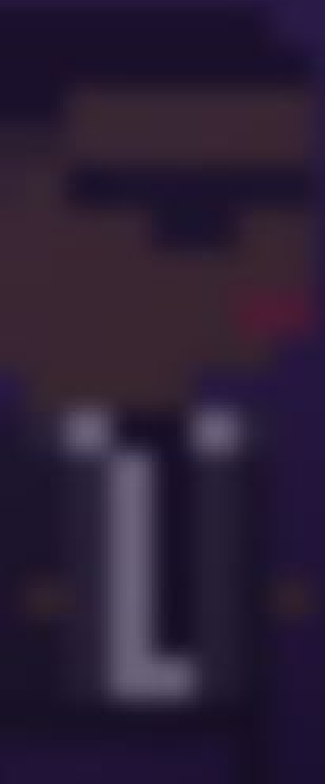


Camera and Spectating

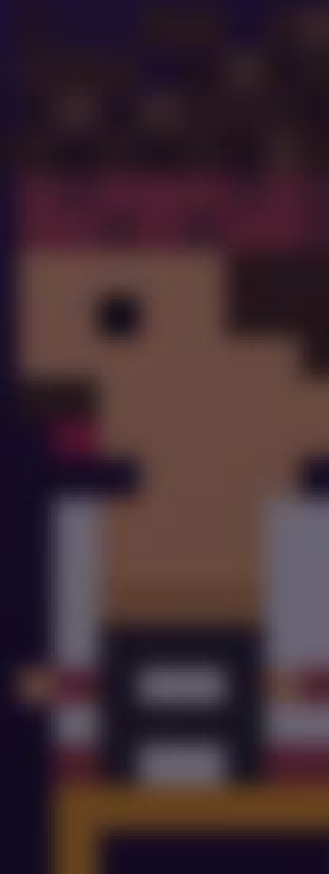
Hate dying in video games?

View any other player or AI in game when dead.

Press **Y** to make it stop following you, and use the mouse manually instead.



Networking



Server/Client Model

Mixed TCP and UDP usage for player experience.

A class for message objects.

Message type identifying the required operation.

Arguments such as integers, doubles, strings.

Common ServerSide object storing information of the server environment.

Lobbies

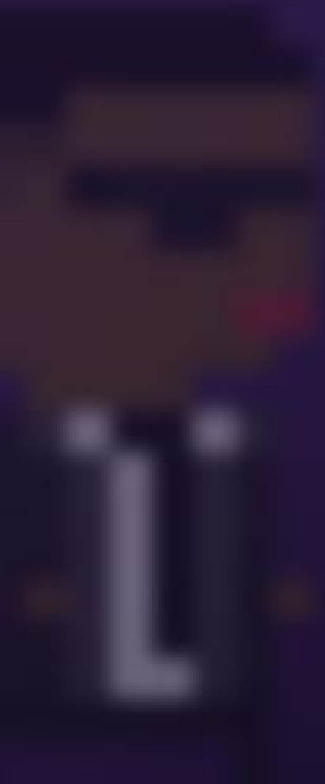
Creating a private or public lobby.

Configurable number of AIs.

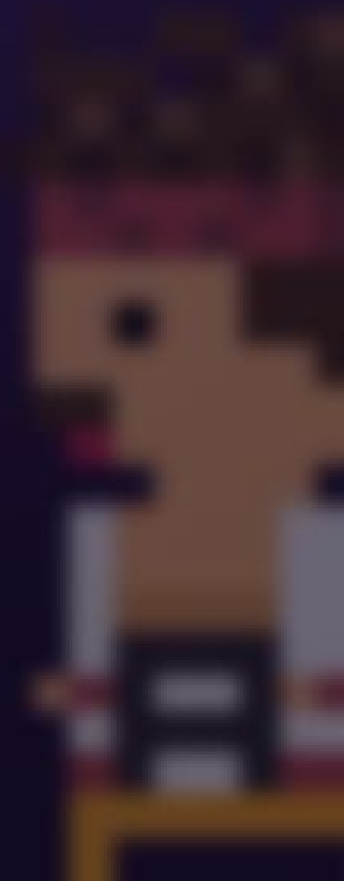
Joining lobby by providing lobby ID.

Kicking player by player ID.

Constructing an object for game logic when game start.



Security



Player Spoofing Protection

Identifying players by connection.

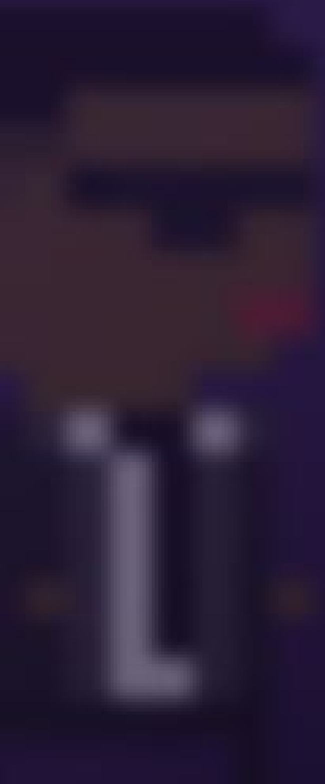
TLS encryption verifying messages.

Custom cryptographic protocol using RSA and AES on UDP.

Cheat Prevention

We have considered cheat prevention.

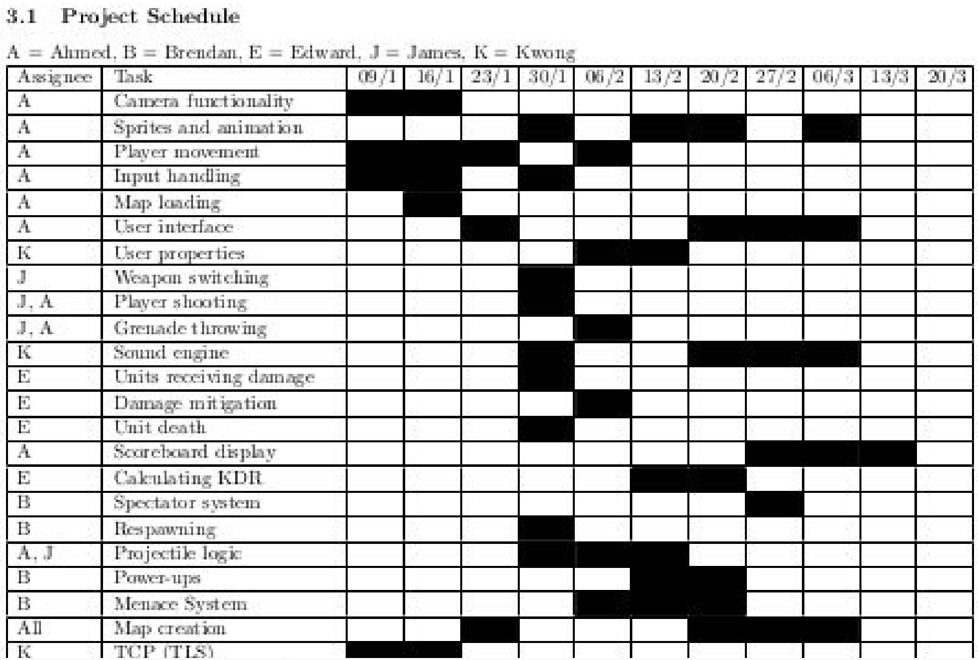
Verifying what the player have against the details on the server.



Development Process

Planning

- UML Diagrams
- Trello board
- Gantt Chart
- Sprint plan



3.1 Project Schedule

A = Ahmed, B = Brendan, E = Edward, J = James, K = Kwong

Assignee	Task	09/1	16/1	23/1	30/1	06/2	13/2	20/2	27/2	06/3	13/3	20/3
A	Camera functionality	■	■									
A	Sprites and animation				■		■	■		■		
A	Player movement	■	■	■		■						
A	Input handling	■	■		■							
A	Map loading		■									
A	User interface			■				■	■	■		
K	User properties					■	■					
J	Weapon switching				■							
J, A	Player shooting				■							
J, A	Grenade throwing					■						
K	Sound engine				■			■	■	■		
E	Units receiving damage				■							
E	Damage mitigation					■						
E	Unit death				■							
A	Scoreboard display								■	■	■	
E	Calculating KDR						■	■				
B	Spectator system								■			
B	Respawning				■							
A, J	Projectile logic				■	■	■					
B	Power-ups						■	■				
B	Menace System					■	■	■				
All	Map creation			■				■	■	■		
K	TCP (TLS)	■	■									

Principles of Development

DRY

YAGNI

SRP

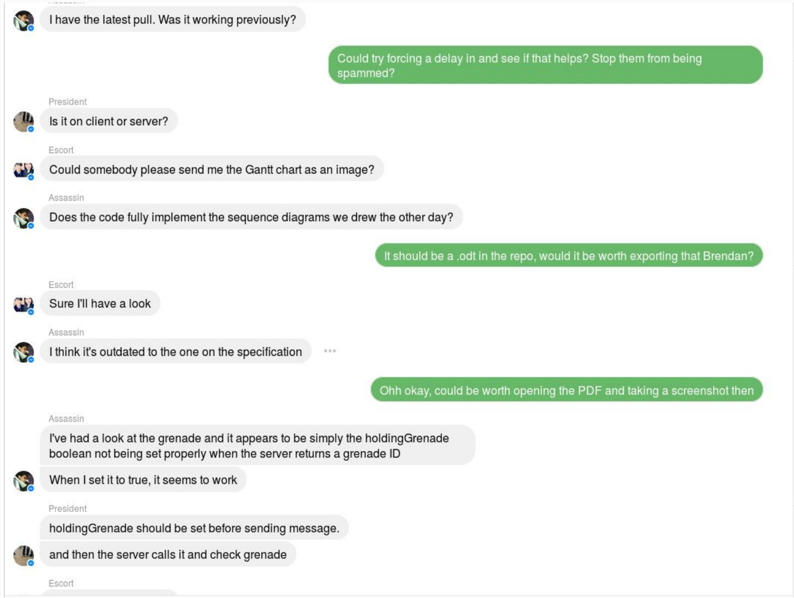
Continuous Integration

Teamwork

Facebook Messenger group chat

Weekly meetings

Mob programming



I have the latest pull. Was it working previously?

Could try forcing a delay in and see if that helps? Stop them from being spammed?

President

Is it on client or server?

Escort

Could somebody please send me the Gantt chart as an image?

Assassin

Does the code fully implement the sequence diagrams we drew the other day?

It should be a .odt in the repo, would it be worth exporting that Brendan?

Escort

Sure I'll have a look

Assassin

I think it's outdated to the one on the specification

Ohh okay, could be worth opening the PDF and taking a screenshot then

Assassin

I've had a look at the grenade and it appears to be simply the holdingGrenade boolean not being set properly when the server returns a grenade ID

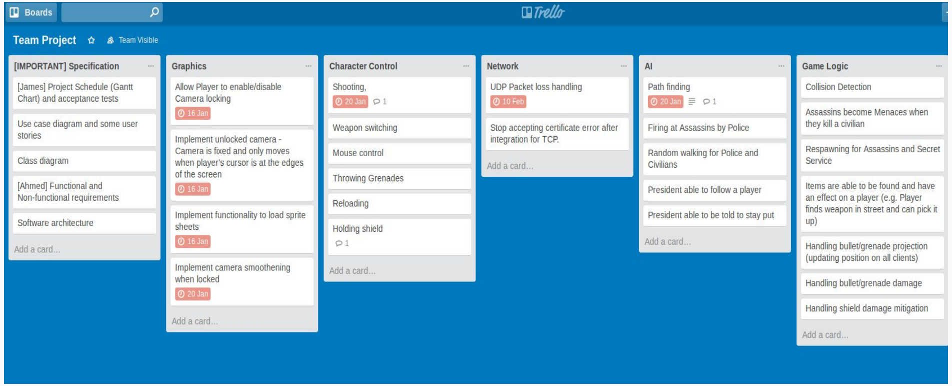
When I set it to true, it seems to work

President

holdingGrenade should be set before sending message.

and then the server calls it and check grenade

Escort



Team Project

[IMPORTANT] Specification

- [James] Project Schedule (Gantt Chart) and acceptance tests
- Use case diagram and some user stories
- Class diagram
- [Ahmed] Functional and Non-functional requirements
- Software architecture

Add a card...

Graphics

- Allow Player to enable/disable Camera locking — 16 Jan
- Implement unlocked camera - Camera is fixed and only moves when player's cursor is at the edges of the screen — 16 Jan
- Implement functionality to load sprite sheets — 16 Jan
- Implement camera smoothening when locked — 20 Jan

Add a card...

Character Control

- Shooting, — 20 Jan, 1
- Weapon switching
- Mouse control
- Throwing Grenades
- Reloading
- Holding shield — 1

Add a card...

Network

- UDP Packet loss handling — 10 Feb
- Stop accepting certificate error after integration for TCP.

Add a card...

AI

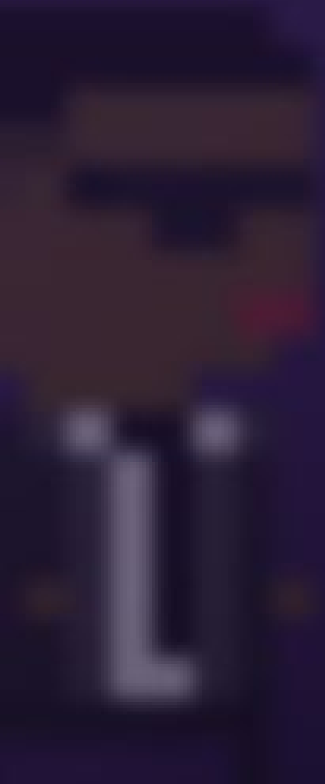
- Path finding — 20 Jan, 1
- Firing at Assassins by Police
- Random walking for Police and Civilians
- President able to follow a player
- President able to be told to stay put

Add a card...

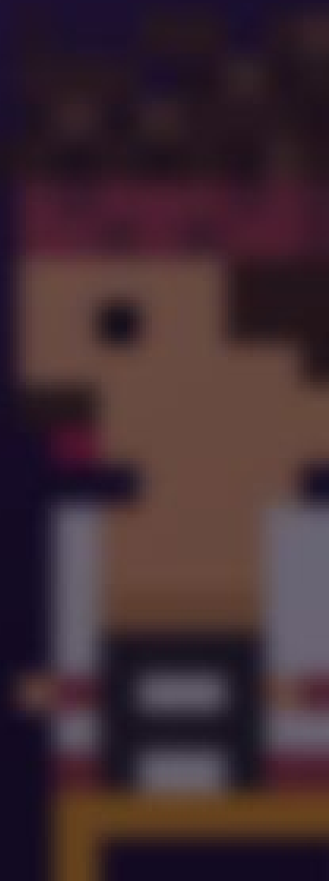
Game Logic

- Collision Detection
- Assassins become Menaces when they kill a civilian
- Respawning for Assassins and Secret Service
- Items are able to be found and have an effect on a player (e.g. Player finds weapon in street and can pick it up)
- Handling bullet/grenade projection (updating position on all clients)
- Handling bullet/grenade damage
- Handling shield damage mitigation

Add a card...



Testing



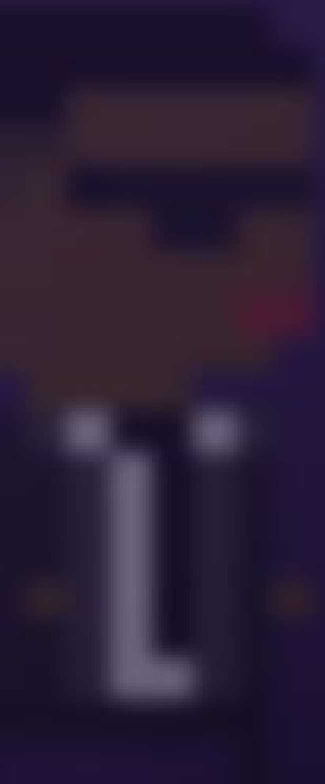
Testing Strategy

Programmatically with JUnit:

- Shooting, reloading, grenades, damage
- AI operations (route finding, following, the above)
- Input Handling

User Tests:

- UI
- Visual Animations
- Music and Sounds



Let's play a game!