

Computer Games Laboratory

Custodian by Qoogle

VI Final Release

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6. Final Release

6.1 Targets from Last Milestone

6.1.1 Suggestion Taken

- Story telling
- Card choose indicator
- Duplication notice

6.1.2 Future Work

- New World Map
- Movement blocked by unwalkable environment (needs more work)
- Energy recovery
- Future move showing of enemy (in discussion)

6.2 Game Summary



Figure: Start menu



Figure: Game setting menu

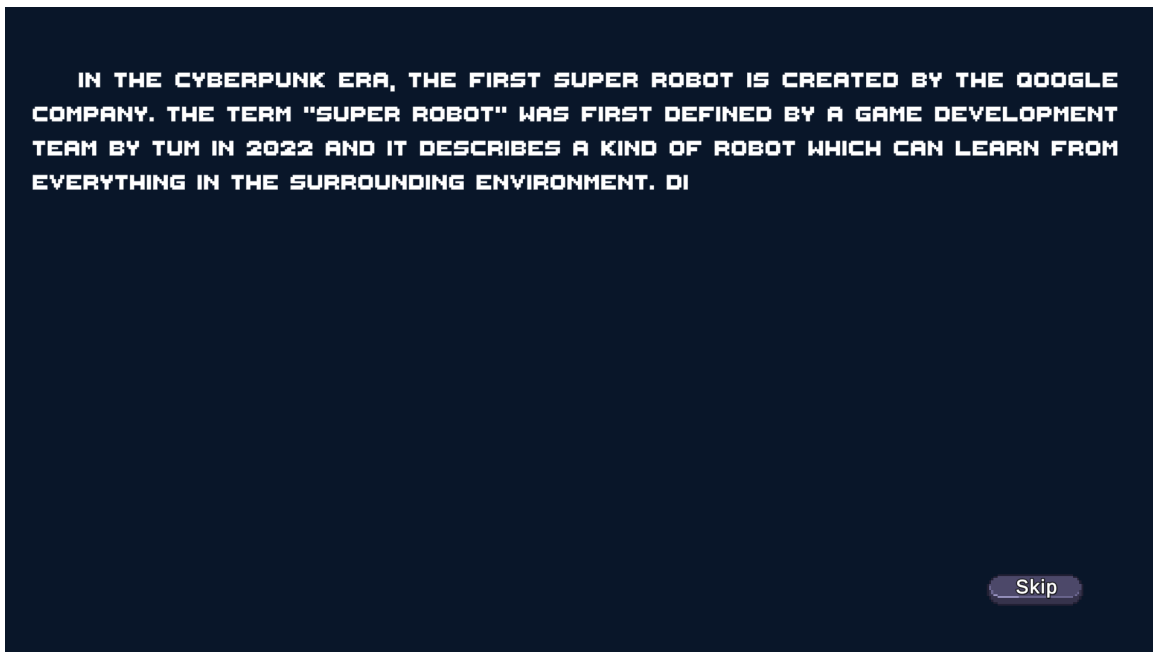


Figure: Story telling



Figure: Tutorial



Figure: Battle UI

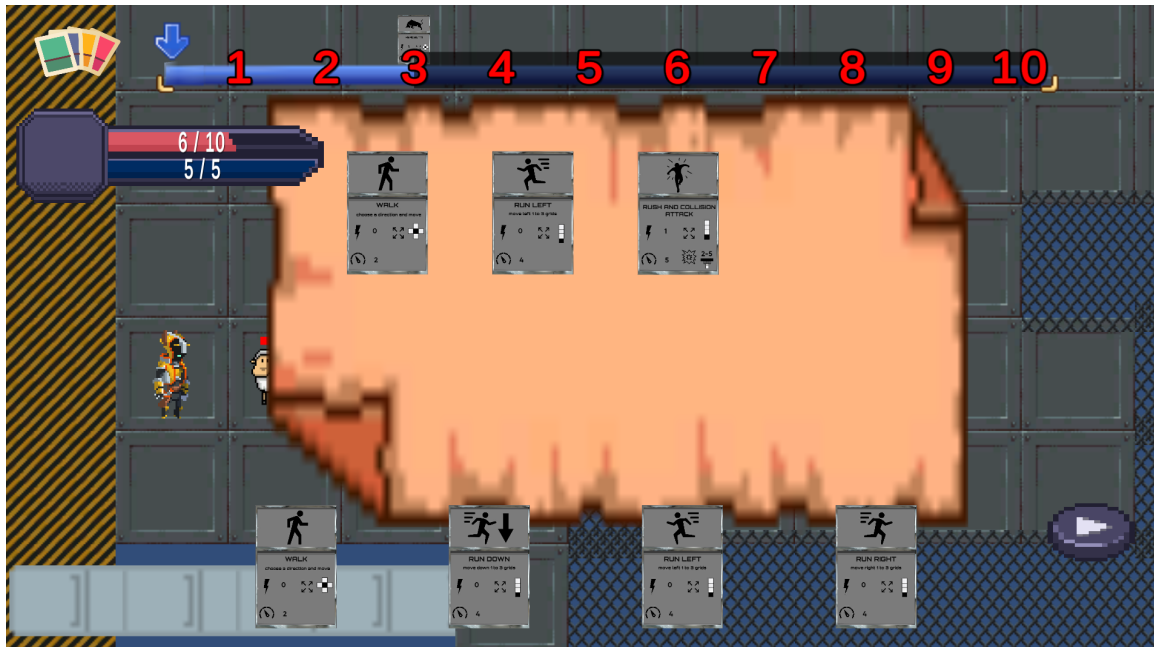


Figure: Duplication mechanism



Figure: Duplication finish

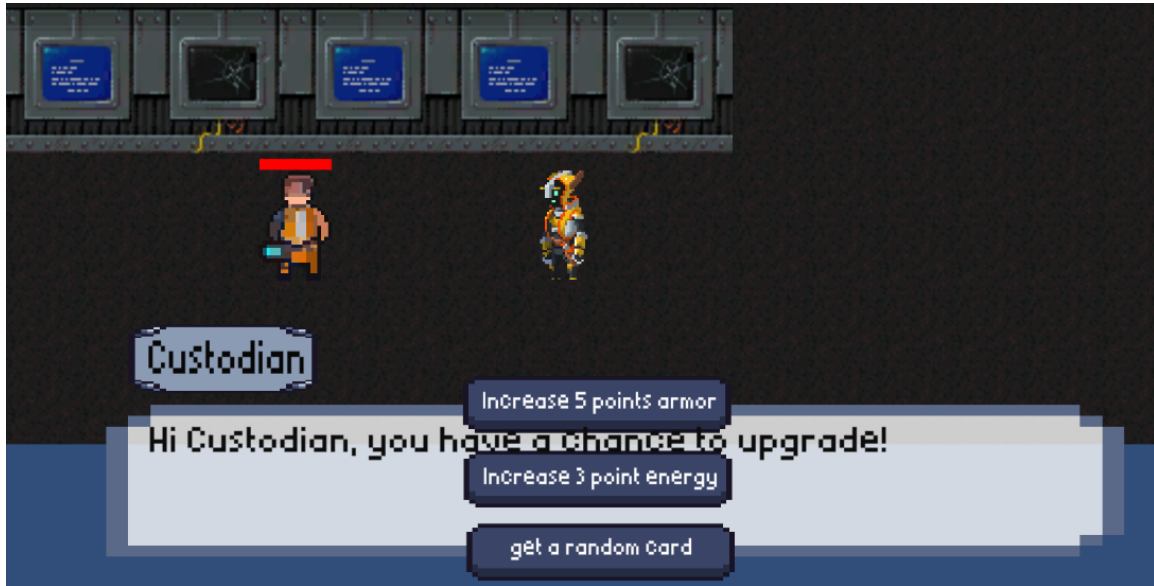


Figure: Event level upgrade

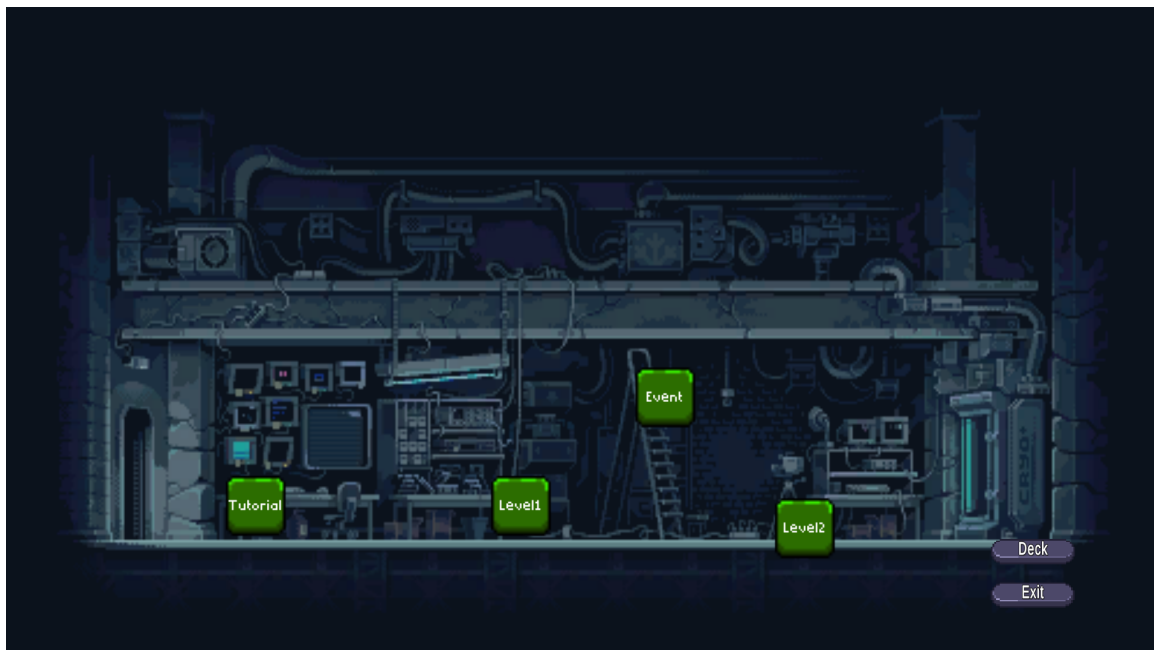


Figure: World Map



Figure: Deck build



Figure: Various cards and enemies

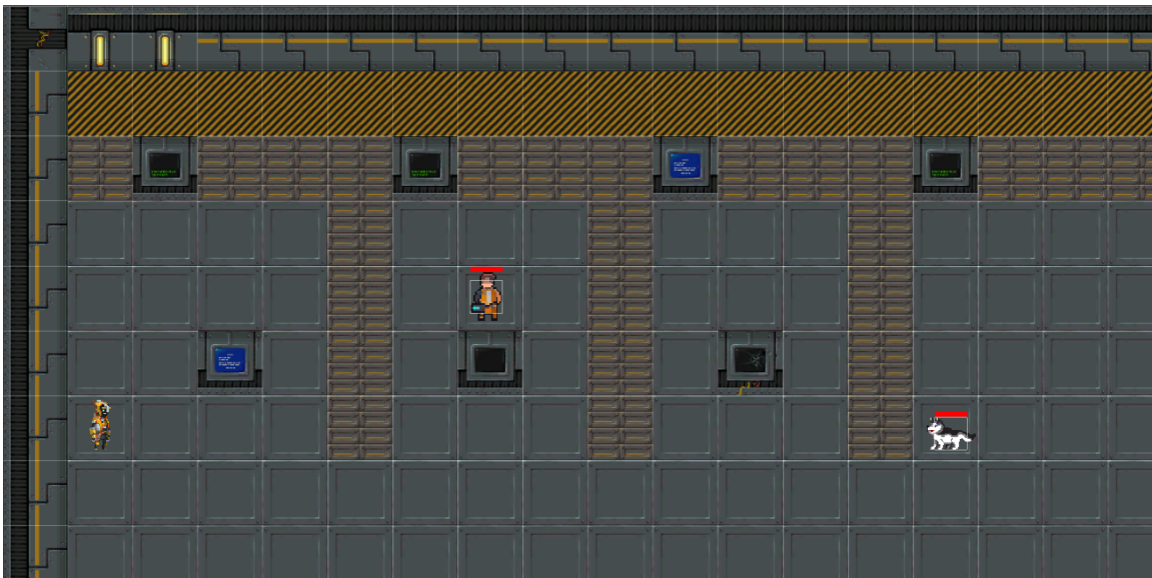
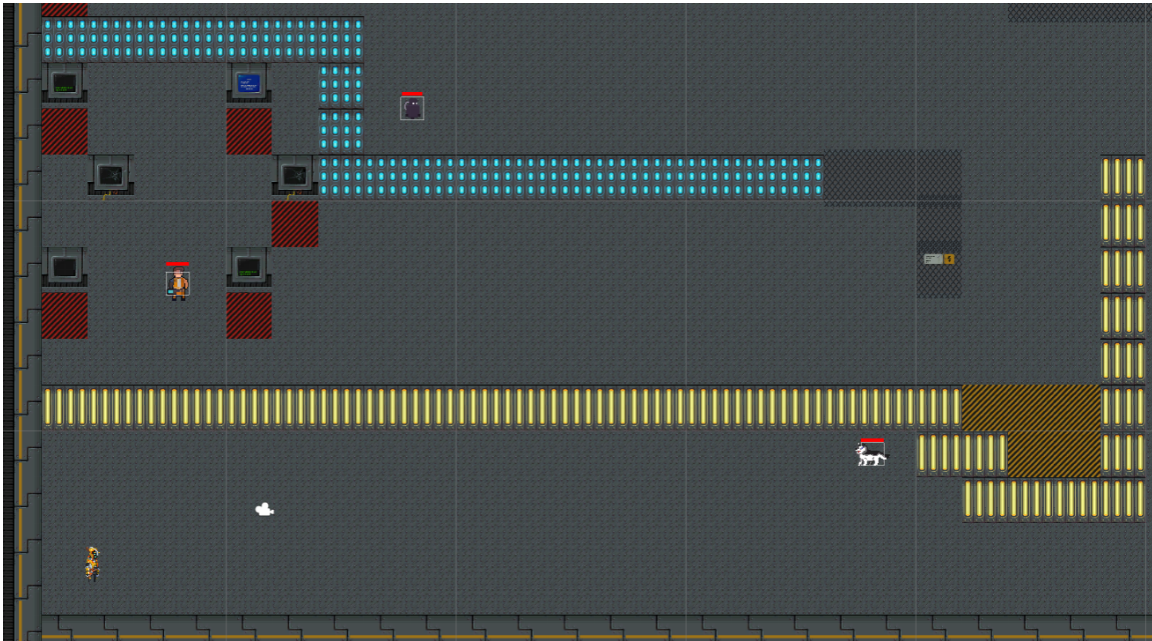


Figure: Various levels

6.3 Question Answers

1. What was the biggest technical difficulty during the project?

Wang: The biggest technical difficulty in the development was taking the game to a high level of completion like most of the published card games currently on the market. For each level we should design a few AI scripts for the enemies with different behavior patterns. Besides, each enemy has a couple of new cards that have various functions for the player to collect. Including all the stuff in one level, we would implement over fifteen scripts for that. And since the game mechanic is kind of novel and irregular, some testers couldn't adapt soon so in this case we should focus more on the user interface part or the feedback more exactly speaking.

Li: For me, managing coroutines is one of the biggest challenges in this real-time strategy game. The movement, visual effects, data updates, and animations should all be processed immediately after a card's effect is played and before the next card is played. Because the game objects and game data will be destroyed at time slot zero, and exceptions could be thrown if synchronization is not completed.

Tatev: The creation of enemy scripts presented challenges, particularly in determining the importance of each state and action, as well as fixing any bugs that arose. The process of implementing and improving the pathfinding was also difficult. Due to the distinctive mechanics of the game, it was challenging to refine it to a polished state.

Anil: For me the biggest difficulty was trying to understand all of the complex parts and build on top of them such as the AI because this was my first time doing something non-trivial in the Unity engine. Additionally, it was a struggle to understand others codes as I didn't know many of the intricacies of Unity and specifically Unity specific C#.

2. What was your impression of working with the theme?

Wang: The number of games appropriate to this theme is small unlike other themes in previous semesters. Compared to the theme "aliens" or "horror", the ideas about "duplication" are relatively less.

Li: Unlike other games, when I work with this game, I feel as though the code is pushing me, rather than me pushing the code. Because the game has a unique mechanism that requires actions to be taken within two time slots, giving a sense of the code driving the game forward. This creates an intriguing experience that I find fascinating.

Tatev: The concept of duplication was intriguing and it was entertaining to see each group put their own unique spin on its interpretation.

Anil: It was a challenge to come up with a unique and interesting idea that uses the theme as its core mechanic. However, I believe we were successfully able to come up with a good one. I liked working within constraints as it forces you to be extra creative.

3. Do you think the theme enhanced your game, or would you have been happier with total freedom?

Wang: Actually the theme enhances our game, that is for sure. Without the element that players can only get the cards by duplication, our game turns into a normal card game as the majority of card games in the world. For instance in most card games players get cards after winning a battle or purchase them in the shop level, while we could combine duplication and the background story that the custodian learns from the environment together. For me I prefer to develop a game with total freedom because in that case some much better ideas would not be restrained and leads to a finer game after a “real” brainstorming.

Tatev: Collaborating in a team can be difficult, so having a sense of direction can aid in ensuring all team members are working towards the same goal. In my opinion the theme adds more features to the existing idea.

Anil: I think for a project class having some requirements or challenges are ok. I enjoyed working within the constraints as it was out of my comfort zone for game design. As long as the theme is not too constrictive and it can be incorporated as one of the main mechanics, it doesn't cause any harm.

4. What would you do differently in your next game project?

Li: I have experience creating games using Unity and have always sought to challenge myself and expand my knowledge by trying new things. I think I am now ready to explore a new game engine, such as Unreal. Additionally, I hope that this course will provide a platform for me to connect with classmates who share a similar interest in Unreal Engine and game development.

Tatev: Honestly, as someone who has only played three games in their life, this type of game is not really my preference. However, it was an excellent opportunity to gain experience with Unity, as I previously worked with low-level graphics APIs. For my next game project, I hope to delve into Unreal Engine and try out innovative and non-traditional game concepts that incorporate interactive art and simulations.

Anil: I would have tried to improve myself more as a game engineering student. I think my biggest weakness was my lack of proficiency in Unity and game design overall. Additionally, I would like to learn how to design art or find someone who can do that which would greatly enhance the whole game quality.

5. What was your greatest success during the project?

Li: Finish the game.

Anil: Despite technical and team related struggles, I believe I tried to do my best without demoralizing myself or others.

6. Are you happy with the final result of your project?

Tatev: More or less.

Anil: I am proud we were able to bring it to the point we are at given the problems we had as a team and how in the second half we were one man down.

7. Do you consider the project a success?

Li: Yes, even during testing, I find this game to be enjoyable as it presents opportunities for strategy and anticipation. For example, I can anticipate the enemy's moves, strike first, and use cards to evade counterattacks, making each playthrough a unique and entertaining experience.

Tatev: The success of the game project can vary based on the defined criteria. Although the game is functional and its mechanics have been put in place, given the obstacles faced during the course, it can still be considered a success within its scope.

Anil: I believe that we were able to complete most of the goals we set up as a theme and despite team related problems, we were able to bring it to the finish line.

8. To what extent did you meet your project plan and milestones (not at all, partly, mostly, always)?

Tatev: Mostly.

Anil: Mostly.

9. What improvements would you suggest for the course organization?

Li: Before forming teams, each person will have a brief moment to introduce themselves. This is a great opportunity to get to know each other and identify individuals who share similar interests and goals, allowing for the formation of compatible teams.

Tatev: In my opinion, the formation of teams should be facilitated by the organizers. This could be done through discussion tables where participants switch seats and engage in conversations with new individuals, learning about their interests, technical background, and preparing questions to ask each other. This would help determine suitable team compositions.

Anil: During the team formation part of the class, I think it would be beneficial for everyone to rank themselves according to certain criteria such as proficiency in Unity, how many games they've developed before, how good of a team worker they are, how constructive they are, how open to criticism they are, how low of an ego they have and how things such as if they can do animation etc. I think that this class requires soft skills as much as technical skills. Therefore, it is important that organizers try to teach or help in areas that concern soft skills because I believe some people are very lacking in those departments. To sum it up, this class should teach and guide how to be a better teammate, how to handle criticism in game development context as well in addition to the technical part.

6.4 Experience Commentary

Fortunately, we have done this during our last milestone and each of us has written a self-portrait, please read on to 5.7.

6.5 Task Timeline (updated)

	Kick-off		Milestone1: Game Design		Milestone2: Prototype		Milestone3: Interim demo		Milestone 4: Alpha release		Milestone5: Playtesting		Milestone6: Final release				
Timeline	19.10	26.10	2.11	9.11	16.11	23.11	30.11	07.12	14.12	21.12	28.12	4.1	11.1	18.1	25.1	1.2	8.2
Brainstorming	Wang																Wang
Game description	Li																Li
Time schedule	Anil																Anil
Assessment	Tatev																Tatev
Presentation slides	Li																All
Cards prototype				Tatev													
Character prototype				Wang													
Map prototype				Anil													
UI prototype				Li													
Assets preparation																	
Presentation slides					Wang/Anil												
Show case scenario				All	All												
World map								Tatev									
Code structure design						All											
Battle scene game logic						Wang	Wang										
Battle scene UI						Li	Li	Li									
Basic card implementation						Tatev	Tatev										
Basic enemy						Anil	Anil	Anil									
Deck						Li											
Battle map						Tatev	Tatev										
Prefabs						Tatev	Tatev	Tatev/Wang/Li									
Testing & debugging						Li	Wang	Wang									
Function adaptation						Wang	Wang	Wang									
Tutorial level						Behind Schedule	Behind Schedule	Behind Schedule									
Presentation slides								Li/Anil									
Sheep enemy optimization								Wang/Anil									
Audio(BGM, sound effect, click effect ticking)									Tatev	Tatev							
Lab worker									Tatev/Wang	Tatev	Tatev	Tatev					
Alfa leader									Tatev								
Alfa solder									Wang	Wang	Wang	Wang					
Hound									Tatev	Tatev	Tatev						
Animation for all									Tatev	Tatev	Tatev	Tatev					
Battle map design for level II									Behind Schedule	Behind Schedule	Behind Schedule	Behind Schedule					
Prefabs (card)									Tatev	Tatev	Tatev						
New Card Implementation in level II									Wang								
Event level									Behind Schedule	Behind Schedule	Behind Schedule	Anil					
Enemy action indicators(A* algorithm)									Wang	Wang	Wang						
Environment Data																	Wang/Tatev
Duplication									Li	Li	Li						
Tutorial script									Li		Li						
Load Data function											Wang						
Main menu											Anil	Li					
Settings menu											Anil	Li					
Continue UI work									Li	Li	Wang/Li	Li					
Bug fixing and adaptation									Wang		Li	Li					
Presentation slides																	Anil/Li/Tatev
Questionary													wang				
Build executable													Unity				
Deselect card													wang				
card zoom														Tatev/Anil			
Interviewing play-testers														Tatev			
Animation bug fix														Tatev			
Enemy bug fix														Tatev			
Level 2 & 3 battle maps														Tatev			
Pathfinding optimization														Tatev			
Event level														Li			
Winning Screen														Li			
Deck Build(Gamedata storage logic optimization)														Li			
Gameflow test & adaption														Li			
General bug fixing														Wang/Li	Li		
Continue UI work														Li			
Analytics															All		
Presentation slides															All		

