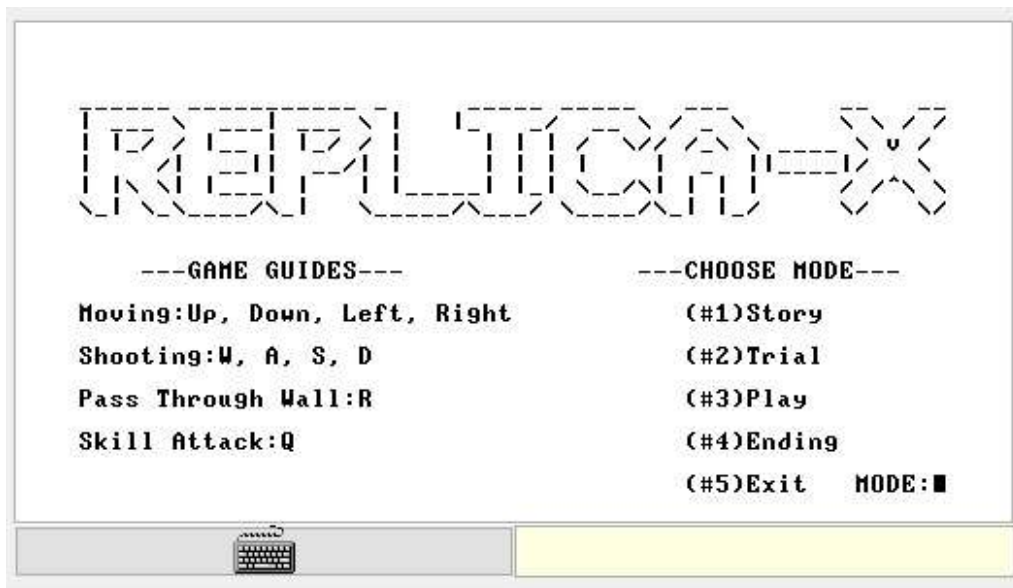


REPLICA-X

An Introduction to Computer Final Project Report



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Part 1 : Game Plot

1.1 The Background of REPLICA-X

For our new creative game, REPLICA-X, we designed detailed, complete plots to make the player have more imagination about the game.

Below is the background of REPLICA-X:

"Once upon a time, an evil psycho scientist, Hack, desired to marry a princess, Judge Girl, in NTU kingdom. However, Judge Girl was prince Jack's fiancée. Therefore, he made a clone, REPLICA-X, in order to kidnap the princess. REPLICA-X was exactly the same as Jack.

In the few months later, by deceiving the princess that he was Jack and wanted to date with her, REPLICA-X took the princess far away from the NTU kingdom. Once the real Jack got the news, he immediately took on a journey to rescue his adorable fiancée..."

- Character :
Hack(Scientist), Judge Girl(Princess), Jack(Prince), REPLICA-X(Clone)
- Main Plot :
Jack has to defeat REPLICA-X and Hack, in order to rescue the princess.

(Summary 1 : Character and Main Plot)

1.2 The Ending of REPLICA-X

The victory against Hack and REPLICA-X makes the story comes to an end. After the player complete all level, he/she will see the ending plot of the game.

Below is the ending of REPLICA-X:

"At the end of the story, prince Jack saved the princess from the danger of the evil psycho scientist, Hack. Prince Jack and Princess Judge Girl, finally can go back to their familiar hometown, NTU kingdom, and welcome to their happiness marriage life! The story tells us, evil never wins, true love wins!"

- Ending :
Hack and REPLICA-X were defeated by Jack. Finally, the prince and the princess live happily forever.

(Summary 2 : Ending)

Part 2 : Game Rule

2.1 Basic Game Guides

There are several keys to let players control Jack's action. In our game, four actions can be activated by keyboard, which are moving, shooting, pass through wall, and skill attack. Keyboard instructions are shown below:

- Moving : Up, Down, Left, Right
- Shooting : W, A, S, D
- Pass through Wall : R
- Skill Attack : Q

By mastering the above instructions, players will be fully skilled to get ready to play the game. We designed only few keys to be functional, because we don't want players to feel too complicated about operating Jack (the character).

2.2 How to play REPLICA-X from beginner to master

Step 1 : Read the background story at [\(#1\) story](#).

Step 2 : Go to [\(#2\) trial](#) to practice operating keyboard instructions.

Step 3 : Try to play REPLICA-X once and once again.

Step 4 : Defeated by REPLICA-X => Practice more => Go play again

Step 5 : Beat REPLICA-X and win the game!

2.3 Rules in the game

We need to follow some rules when playing the game. Some important messages that player must know are in the following:

1. There are two level in the game. In each level, player should defeat REPLICA-X to advance to next level or complete the whole game.

2. In each level, the player and REPLICA-X will each get 70 points of blood. Who get attacked will minus 10 points of blood (if normal attack), or 20 points of blood (if skill attack). Also, skill attack can only use at most 3 times.

3. Skill will be triggered by the box, so it's important to get the box. Also, there are some traps on the map, which will restrict character's ability to move.

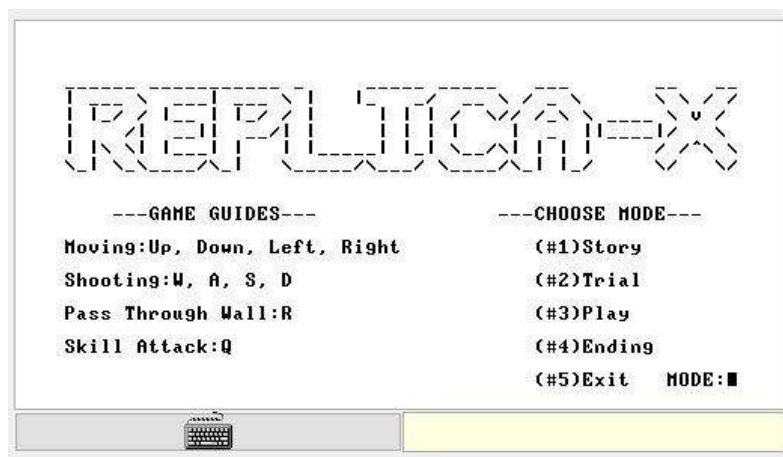
4. Once REPLICA-X is defeated by player, move to the bottom right corner to advance to the next page.

Part 3 : Game Pages

3.1 Home page

When starting to run the program, the first page will be the home page. In this page, we can first see a huge title "REPLICA-X" at the upper side of the screen, representing our game's name.

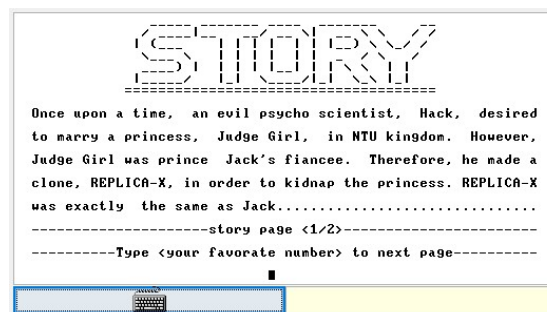
At the left bottom of the page, there are four clear game guidelines, which can be used for a small reminder. At the right bottom of the page, we can choose mode from here, by entering number 1 to 5, the player can go to the page which we will introduce in 3.2~3.6.



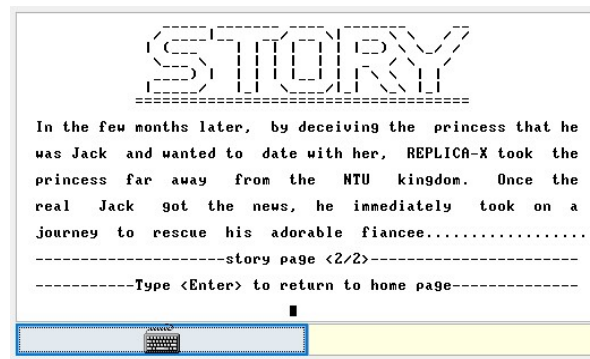
(Image 1 : Home Page)

3.2 (#1) Story

Once the player enters "1", the screen will be switched to the story page. Here, the background story will be shown on the screen (2 pages). For more details of story, please go to 1.1. Before going to the next page, the player needs to enter his/her favorite number, the number will be used at random function.



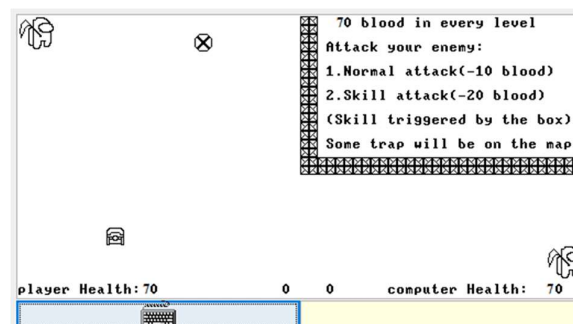
(Image 2 : Story Page 1)



(Image 3 : Story Page 2)

3.3 (#2) Trial

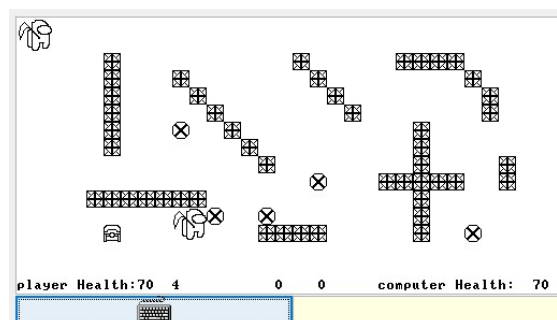
At trial page, player can try how to control your character before entering the game. We suggest players practice and be familiar with all the game guidelines here, because REPLICAX (computer) won't move at this page, thus players don't need to worry about being shoot from REPLICAX.



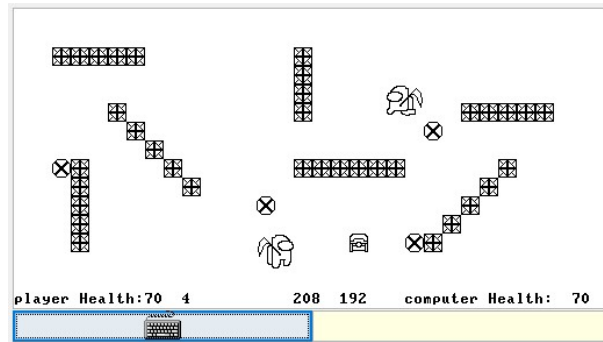
(Image 4 : Trial Page)

3.4 (#3) Play

Game will be two levels. In each level, player must try to beat REPLICAX to advance. More detailed game rules are at part 2. When player tries to shoot REPLICAX, he/she also need to avoid being attacked by REPLICAX. It will be fun to think how to shoot REPLICAX and dodge his attack simultaneously!



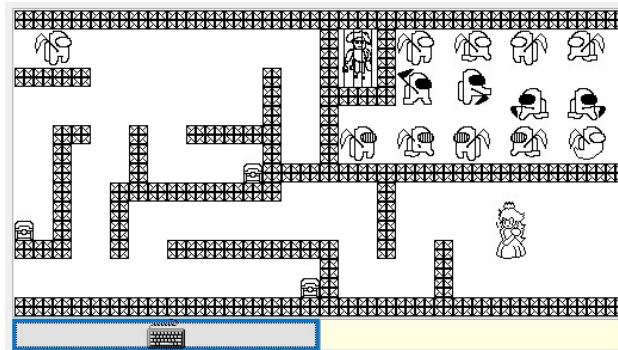
(Image 5 : Level 1)



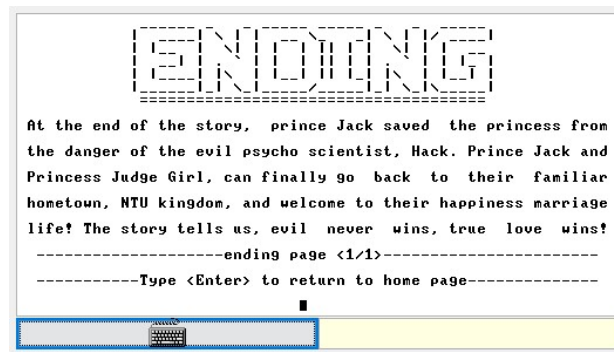
(Image 6 : Level 2)

3.5 (#4) Ending

In the ending scene, we put the evil scientist-Hack in jail, and those things with the same appearance as Jack are all Hack's experimental products. The three boxes are easter eggs, which will be explained on part 4. The player needs to find the princess to finish the game.



(Image 7 : Ending Page 1)



(Image 8 : Ending Page 2)

3.6 (#5) Exit

When the player finish playing the game, back to home page, and enter "5". The program will stop execution, and display "Main.main finished execution."

Part 4 : Special Designs

4.1 Computer REPLICA-X (How does our computer work)

First, we determine computer's attack status and whether we can make valid attack to player: < Attack priority: special attack > normal attack.

Second, if there is no opportunity to make an attack, we will move our computer by the following methods: we will calculate all the cost of moving right, left, up and down for getting close to player and avoiding the trap on the map, and after that we move to the direction which cost is least.

However, sometimes we will face some awkward situations, such as moving right when we are at the rightmost of the map or moving to walls. At this time, we will use our random function for choosing where it should go in three steps. In addition, we diminish our attack frequency so that our player can have higher opportunity to win the game.

4.2 Images and Easter Eggs

We use pixel art to draw 4-bit images or 6-bit images, and split it into segments, then we use bitmap editor, provided by project 9 to generate the code of images.

In the end screen, we design some easter eggs, once the player enters the box in the lower left corner, it will jump to another scene with a sentence, "A+, please.". And if the player enters the box in the middle, it will link to our personal information (Instagram). And for the last box, if the player enters it, it will lead to game over.



(Image 9 : 3 Easter Eggs at the end)

(From left to right : A+ /Instagram/ Game over Easter Eggs)

Part 5 : Other Using Tools

1. ASCII words : Text to ASCII Art Generator (TAAG) - patorjk.com
2. Pixel Art : Free online pixel art drawing tool – Pixilart
3. For drawing square : Sokoban Bitmap Editor
4. Idea inspired from : Among Us