

Final Project Proposal Shall We Play A Game?

"Shall We Play A Game?" is a puzzle adventure styled game, using unix based commands plus custom in-game commands to hack your way stealthily into a secure research facility hidden behind multiple obstacles.

Several things come into play when you start the game. You'll be given a set amount of commands and programs you can use to aid you in this journey. First of all we would have a decryptor. This tool would help the user decrypt password protected files and a few computer systems. To make the decryptor work we would utilise overloaded methods and loops such that the algorithm will print all possible combinations of the text decrypted using the provided hash (we would be utilising a substitution cypher), after the loop was complete, a conditional statement would identify the correct clear-text and return it last in a readable and organized format (pre-defined). Another tool in the hacker suite would be the network manager. This tool would help the user identify the hostnames of other machines on the network and connect to them through an ssh-type system. To implement this we would utilise a 2D array containing pre-defined hostnames (depending on the current level the user finds him/herself in), a number of print statements to create a pleasing ASCII representation of the network, conditionals to allow the user to access a computer if the corresponding password is utilised when connecting to a specific host, lastly we would need a selector which would allow for the user to either utilise the decryptor (which would be given a predetermined hash), or insert a password which then the code would match with the hostname (in the 2d array) and grant access to the user. In the case that you are discovered, you'll have to pass smaller quick-time events/challenges in order to continue hacking. We'll be applying some features that'll demonstrate actual hacking to obtain needed in-game information(password hints, plot information, and unprotected, easily accessible in-game computers in the network).

To obtain said required information, you'll need to use the tools provided and your ingenuity/creativity to pass several obstacles/puzzles. When all the puzzles have been completed, you'll be directed towards an admin computer in the facility, and be prompted to use all the information you gathered to unlock the final lock. At this point, there will be no further guidelines nor help from the Tips Bot, the mission is all up to you the player.

This game is based around a theme similar to games such as Hacknet, Hack run, and Welcome to the game(a game about surfing the deep web), where the player spends a considerable amount of time looking through data to find essential tools for winning. This game is also based around CTF competitions, where you need to "capture the flag" hidden in websites, images, text, etc. Finally, some further research needs to be done on "actual" hacking and other puzzle elements that we want to include in our game.

The first step in this journey would be to create the basis of the code: the tutorial. The first so-called puzzle which will introduce the player to all the tools at his disposal and the aim and storyline of the game. The beginning of the tutorial would use ASCII messages about the

geniuses behind the code and the title. Once the username is selected through simple text-input the user is informed of the backstory(through print statements), and is supplied with a terminal-like interface with which the player can run terminal commands such as man (to explain the tools he has at his disposal) and other such as ls, cd, cat, among others. This would include multiple conditional statements considering the textual input supplied by the user. This is the backbone of the game, all the rest of the parts of this "car" are based around the methods and algorithms utilised in the tutorial therefore finishing the tutorial first makes it infinitely easier to complete the rest of the project.