**Outline**

Play the original Nethack game to establish a mind-set around basic computer game and programming concepts. Research the history of “rogue like” games. Decompose the Nethack game from perspective of input/output devices and processes.

**Objectives**

* Icebreaker activity to establish community and classroom norms.
* To realize that computers have evolved to take various forms in modern society.
* To begin thinking about computers as a collection of input/output devices and processes.

**Materials & Resources**

* Online Nethack: https://alt.org/nethack/

**Part 1: Playing The Game**

1. Play the Nethack game until you have a character that has survived for more than one dungeon level.  
   1. How many levels have you reached so far?
   2. What character type are you?
   3. How many times (deaths) did it take you to get this far?
   4. What are some of the monsters you have encountered and how are they represented?
   5. What are some of the special objects you have encountered and how are they represented?
   6. What are some of the commands that you use most often?
2. Compare the Nethack interface to modern computer games:  
   1. Does the primitive character based display limit the game play (Explain)?
   2. Does the primitive command based input and control limit the game play (Explain)?
   3. Is the Nethack game less complex or more complex than modern computer games (Explain)?
3. Compare the Nethack gameplay level to modern computer games:  
   1. Is the gameplay easier or harder than modern games (Explain)?
   2. Nethack is an example of a “Turn Based” game. Would it be better of the monsters moved in real time (Explain)?
   3. Nethack is an example of a “single player” game. Would it be better if the game was played in a multi-player world (Explain)?

**Part 2: Game Analysis Presentation**

Think about what you would have to do to create a game like Nethack, focusing on the following questions.

Work with your group to create a presentation to explain tour thinking. Address each question on a separate slide.

1. User Interface – Input
   1. The primary input interface is the computer keyboard. What would you need to do in your game to capture this keyboard input?
   2. What are some important input commands that control movement?
   3. What are some important commands related to resource management (e.g. inventory control)?
2. User Interface – Output
   1. The user output is the computer display monitor. What would you need to do in your game to provide the required display elements?
   2. Would your game be full screen or run in a window?
   3. Would it be easier to use graphics or ASCII characters?
3. Game Levels / Maps
   1. The game has a number of dungeon levels (maps). What would you need to do in your game to provide the required dungeon maps?
   2. Would these maps be randomly generated or would you create them using a map editor?
   3. Maps are initially hidden and revealed as the player explores the level. How would your game do this?
   4. Players can move up and down stairs (between maps). How would you support changing maps?
   5. When players change maps, how would your game remember what was already explored?
4. Game State
   1. The game maintains a lot of state information about the player attributes and the attributes of non-player characters (monsters). How would you maintain this game state information?
   2. Provide some examples of player information and how you would maintain this information.
   3. Provide some examples of monster character information and how you would maintain this.
   4. Players can save and exit their game and then return at a later date. What would you need to do in your game to support this?
5. Game Logic / AI
   1. Monsters use a basic level of artificial intelligence (AI) to follow and attack player characters. How would you implement this?
   2. Provide some examples of monsters using AI to attack players.
6. Think about what you would have to Learn in order to program a game like this.
   1. What do you remember from last year that will help you?
   2. What would you need to learn this year to fill in the missing pieces?