Analyzing the design 1#
CS 202: Programming Systems

Alves Silva, Otavio Augusto
PSU ID: 902840168

1. Design effectiveness

The design was able to give me a big idea about the hierarchic of my classes as well as responsibilities and jobs of each one in the purpose of the program. Therefore, it made the job helping not starting programing for the zero and having none idea about how I could start the code.

3. OOP Results

The program was able to achieve OOP design requirements. The classes are a group of specialized other classes using the concept of inheritance as the method of “is a” object and “has a” object. For example, the class BST is a specialized class of binary tree and inherits the base class data members and member functions.

Another fact about the OOP requirements, the program used a node class object that was totally able to implement the data structure used(BST) in the program.

4. Changes in the design

The design didn’t have so big changes, but the data structure part of the design wasn’t chose and constructed. Therefore, the class code is basically a binary tree, which has a root node, having the functionality to implement the maze particularities.

The amount of function members in the node class was bigger than the expected because the node is more than just a path. It has an important job in the game a trap or a prize for the player. Therefore, more functions were necessary to create this approach, the class node has to execute his job in the class player and isn’t just a simple path with connections and children.

The amount of function members in the code class was bigger than the expended because of the complexity to create a random maze, which each time that the game is executed a new one is created, was harder to implement with few functions. Therefore, more functions were necessary to implement this approach and achieve the goal.

6. Code efficiency

The code was able to create a new random maze, which has different length and number of paths, each time a new game is started. The player was totally able to walk through the maze without any problem, but he needs lives for that. The paths were

capable to interact with the player giving points, taking lives and showing the results. However, the traps, prizes and maze end will always be in the same point. The traps will be always an odd path value, the prize will always be an even path value and the maze end will be always the biggest path value in the maze. Therefore, the main purpose of the program was achieved with success.