CS151 Programming Assignment 2  
Spring 2023

Adding Items to Your Adventure

# Introduction

In Assignment #1, you created a mythical world much like the colossal cave adventure that was part of the early mainframe era. However, there were some important differences between your world and that of Will Crowther’s.

One of the likely differences was the inclusion of numerous items throughout the world that your character could acquire and use[[1]](#footnote-2). For example, your character could find food and a flashlight in the shed at the end of the forest. There was also a rod that would frighten away the bird if you were trying to catch it.

In this assignment, you will work with your original adventure game and improve it based upon the feedback from your instructor and classmates. You will also add items to the world using dynamic arrays as a part of your character class.

# Program Requirements

For this part of the program, you will need to have all of the requirements from assignment 1. In addition, you will need to include five items with which your character can interact throughout the world. Your character class will need to have an inventory, which **must be implemented as a dynamic array** **inside the character class**. You will need to include a destructor, copy constructor, and overloaded equal for your character class. You should also include any functions that will you will need to manage the inventory such as add and drop.

# Part 1 – Understand the Problem (10 Points)

In adventure, you could add, drop, and use items on your way through the world. Find a walkthrough of adventure, such as the one at: http://rickadams.org/adventure/walkthroughs/walkthrough.html

Find 10 items from the adventure game. What does each of these items do?

1. Lamp
2. Pyramid
3. Silver
4. Water bottle
5. Oil
6. Trident
7. Vase
8. Pillow
9. Pearl
10. Emerald
11. Rod
12. Cage
13. Bird
14. Rug
15. Coins
16. Jewelry
17. Diamonds

For a bonus point, include a short description of your favorite item from any video game. Why do you like this particular item?

I really like snow in minecraft only because the sound walking over it makes is so satisfying. Its just a small partial (stackable) block that falls from the sky in snowy biomes and covers the ground and whatever else.  
**Submit your answer using part 1 of the assignment link by February 17, 2023.**

# Part 2 – Create a Plan (20 Points)

You should already have a plan along with some feedback from your work on assignment 1 in this course. For this part of the assignment, **have a classmate review your program and code**. They should provide you with feedback in the form of a formal review (at least 2-3 paragraphs). Make sure to send a copy of this review to the instructor as part of your submission for the Understand & Plan part of the assignment.

For this plan, you will need to do the answer the following questions:

1) What feedback did you receive on your game?

* While it wasn't pertinent to the game, it did have a point system.
  + Objects could be used more than once
* His program did include a character class as required.
* There was a mp of the world and the game did have 25 locations.
* He did have at least 3 locations of interaction as required.
* He had a help command, directional commands, and a score command to display the score.
* There were constructors, accessors, and mutators functions and classes
* he had separate compilation.

2) How will you incorporate this feedback and revise your code in order to make your game better?

* I may attempt to provide more in depth descriptions to the world
* I need to fix how you can use an object more than once
* I may be able to think of a way to make the point system more pertinent

3) You will need to add at least five items to your world. What items will you add to your world? Where will you locate them? What will they enable your character to do?

* Lamp
  + See (because of course its dark)
* Paper
  + Something to print on
* textbook
  + Use on laptop to write up paper
* Bug
  + If you pick it up, you loose the game
* Batteries
  + Use on lamp to be able to see

4) Your character class will need to use dynamic memory in order to hold these items. How will you incorporate a dynamic array into your character class? What type will it be? What special operations will you have to write for the character class?

* Switch data type to a pointer of an array
* Class needs to keep track of how many items in the array
* Destructor
* Free items from memory when no longer in inventory

**Submit your answer using part 1 of the assignment link by February 17, 2023.**

# Part 3 – Implement Your Program (60 Points)

For this part of the assignment, you will implement your plan in code using C++. Your code should have appropriate comments to explain the program and the code. It should be written in a consistent and readable form.

As always, is should compile and run without errors or warnings.

**Submit your code using the implement and test link by March 1, 2023.**

# Part 4 – Test Your Program (10 Points)

For this portion of the program, you will come up with a testing plan. Your plan should be in the form of a table (e.g., spreadsheet). This table should include the following columns.

* Test Number (e.g. 1)
* Test Name (e.g. Add item)
* Test Description (e.g. Go to Cave, Type “get rod”)
* Expected Result (e.g. Rod is added to character inventory)
* Pass/Fail
* Comments (e.g. Test failed 1st time due to dynamic memory allocation error. Appropriate corrections made to pass 2nd attempt.)

Make sure that your tests are repeatable by an experienced tester. In other words, give enough details so that someone else could test your program.

**Submit your code using the implement and test link by March 1, 2023.**

1. You may have been able to add items through a Boolean value, but we’re going to go a bit further in this assignment. [↑](#footnote-ref-2)