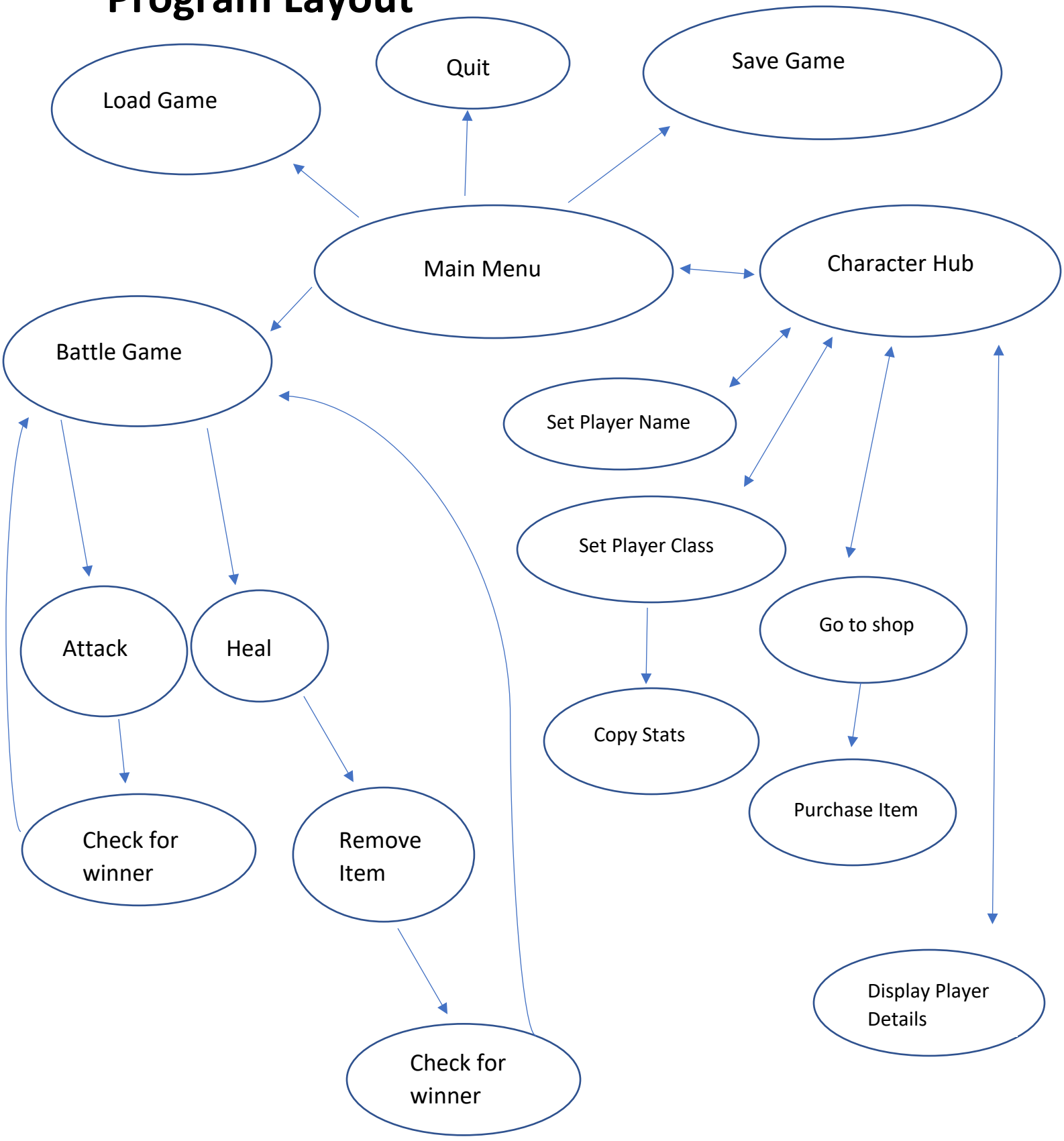
Iterations

1. **Initialize the arrays and program variables.** Arrays will be used to store data such as the name of the classes, name the player's stats, and items. 2 separate inventories will be used for the player's items, one for weapons and another for healing items. An int variable will be declared to keep track of what class the player has chosen based on the index of the array of class names. Variables will be used to keep track of the number of weapons and healing items. Const ints will be used to reference the size of the arrays. An int will be declared to keep track of the player's money. A function will be created to display the main menu.
2. **Create functions for setting the user's name and class in the character hub.** A function will be created that lets the user set their name. A function will be created that displays all of the classes and their stats. Depending on what the user selected, the class of their choosing will be copied into the player's array of stats through another function.
3. **Create functions for the shop and to display all of the player's information in the character hub.** A function will be created to display the shop and all of the items. When the player purchases an item, another function will be used in purchasing that item. A function will be created that displays all of the player's information such as their name, gold, class, etc.
4. **Create functions for showing the battle menu and for letting the player attack in the battle game.** A function will be created to display the battle menu and all the options. When the player goes to attack, they will choose what they will attack with. The attack will be carried out through an attack function. The enemy will also use the same attack function to attack the player.
5. **Create functions that allow the player to heal in the battle game.** When the player heals, they will pick what item to use in their inventory, then the healing will be carried out through a function. Afterwards, the healing item will be removed from their inventory through a function.
6. **Implement save and load features.** Create a function that saves the player's information onto a text file. Create a function that loads the player's information from that same text file.

Program Layout



Program Data

Array for the names of the stats, and size of the array

String playerStatsNames[] = {“Strength”, “Dexterity”, “Constitution”, “Intelligence”, “Wisdom”, “Charisma”, “Armor class, “HP”}

Const int MAX_NUM_STATS = 8

Array for the name of the Classes, size of the array, and the index of the chosen class

String classNames[] = {“Barbarian”, “Rogue”, “Cleric”}

Const int MAX_NUM_CLASSES = 3

Int currentPlayerClass = 0 (By default this value will be a 0)

2D array to organize the names and stats of each class

Int classes[MAX_NUM_CLASSES][MAX_NUM_STATS]

Values will be initialized according the initial data page. Values of HP may be lowered for testing purposes.

Arrays for the player stats and enemy stats

Int playerStats[MAX_NUM_STATS]

Int enemyStats[MAX_NUM_STATS]

Arrays for the names of the weapon stats, and names of weapons. Ints will be used to keep track of the sizes of the arrays

String weaponStatsNames[] = {“Hit Rate”, “Damage Min”, “Damage Max”, “Cost”}

String weaponNames[] = {“Dagger”, “Shortbow”, “Mace”, “Greatsword”}

Const int WEAPON_STATS = 4

Const int WEAPON_NAMES = 4

2D array to organize weapon names and their stats

Int weapons[WEAPON_STATS][WEAPON_NAMES]

Values will be initialized from the initial data page

Array to store weapon items, size of the array, and weapon count

Const int MAX_WEAPON_INVENTORY = 4

Int weaponInventory[MAX_WEAPON_INVENTORY]

Int weaponCount = 0

Arrays for the names of the healing item stats, and names of the healing items. Ints will be used to keep track of the sizes of the arrays

String healingItemStatNames[] = {“Heal Min”, “Heal Max”, “Cost”}

String healingItemNames[] = {“Mint Donut”, “Sandwich”, “Steak”}

Const int HEALING_ITEM_STATS = 3

Const int HEALING_ITEM_NAMES = 3

2D array to organize the names of the healing items and their stats

Int healingItems[HEALING_ITEM_STATS][HEALING_ITEM_NAMES]

healingItems[0][0] =5 healingItems[0][1] =10 healingItems[0][2] =10

healingItems[1][0] =10 healingItems[1][1] =20 healingItems[1][2] =17

healingItems[2][0] =20 healingItems[2][1] =50 healingItems[2][2] =30

Array to store healing items, size of the array, and healing item count

Const int MAX_HEALING_ITEM_INVENTORY = 5

Int healingItemInventory[MAX_HEALING_ITEM_INVENTORY]

Int healingItemCount = 0

Gold, player name, and enemy name

Int gold = 0 (May start at 25 or 50)

String playerName

String enemyName

Postmortem

- Writing functions for the character hub and battle game is something that went well.
- I think it would have been better to use the std::array over the traditional array since std::array can keep track of its size, cutting down on variables used to keep track of array sizes.
- Something I can do to solve the issues I faced is that when programming a certain feature, I should write down the steps of how that feature is to be implemented, to make the programming flow a little more easily.

Citations

How to iterate through each word in a string

https://www.geeksforgeeks.org/how-to-iterate-through-a-string-word-by-word-in-c/

How to convert a string to an int

https://stackoverflow.com/questions/5590381/easiest-way-to-convert-int-to-string-in-c

Check if the end has been reached in a text file

https://www.cplusplus.com/reference/ios/ios/eof/