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COM 210

Professor Lane

Programming Assignment Write-up

I would like to start my writeup by saying that for this assignment it was my first experience with VS code. In the previous school where I took a Java class, we used Brackets which was very simple and easy to manage. I enjoy VS code more; it feels as though I’m in the future when using it after coming from an outdated UI. It is easy to manage and much more supportive in debugging, I will now be using it for all the coding I will be doing in the future.

To start the assignment before I wrote any code, I wrote out a plan of how I should attack the problem. I knew the first thing that would have to be done is to get the input from the user and to store it in an array so that it can be read. Along with the println that will ask for the input I will need to initialize variables at the top of the code. Then it came to how to approach how I would iterate through the stack and check if the delimiters were in the right place or not. My first thought was to get the input and put the values into an array so that it can be read through to see if it is correct or not. Then I figured that a push and pop would be needed for the stack so creating the methods for those would be next. Alongside those the idea was to have the methods to check if the stack is full or empty. Proceeding from creating the methods it would be time to write the section of code that would loop through the array and check for the open and closed delimiters seeing if they are syntactically correct or not. My thought to do it was to create an array that would first hold the input from the user. Then write a for loop that will go through each character of the array. An if statement would be needed in the array to check if the character is an open {, [, or (. If it is to find one, it would push its closing counter into another array that is currently empty. Following this the loop would go through the rest of the text and as it goes would check for that closing. I tried to think of ways to make the code shorter and simpler which I’m sure there are ways but the easiest thought that came to mind was if statements. If a closing is found and matches that of the stored in the second array it would pop out of the array moving onto the next delimiter it was checking for. If the array were to not have a correct closing to the corresponding opening it would output an error. I believed that a single else statement to it not being correct finding the closing would suffice to all scenarios where it is wrong.

Spoiler alert the code does not work properly but I tried my best to implement my thoughts and the examples from class to the assignment. I started coding by writing the essentials of the class and the main that is needed in every program. Following this I started by creating the variables that I would need so values were assigned and could be manipulated in the loop, methods and if statements. I created a maxSize a top specifically for the stack array to be later used in the methods. Then I created a string array to store the text input from the user, and an empty array needed for the storage of the delimiters when found. After this before I went at the meat and potatoes of the code in the loop and if statements, I wrote the code for the methods needed for the stack. I had some trouble writing these, but it was mostly little things I was missing, after going over the code in class it helped me in writing these pieces of the code, although it still may not be fully correct. These methods would be used to push and pop the array when an open delimiter is satisfied with its closing. There are also methods to check if the array is empty or full. The methods were written outside the main and when I was finished, I went back into the main to write the for loop first. I initialized i = 0 then set it less than the length and incremented it by 1 after each iteration (a standard for loop). The next line of code in the loop is an if statement that checks if I am any of the three delimiters. In the if statement is a line of code that uses the push method to insert the character at location I of the userArray into the stackArray… hopefully not to sure if it is used/written correctly. I had different ideas on how to write these if statements one being with i equal to all the open options with OR’s separating them in the if. There must be a way to achieve it with that way, but I decided to write an if checking for each individually and if it were to find one it would push the closing to the found opening in the second array. It would then keep looping and if it found the closing matched it would pop out of the stackArray. Any other closing delimiter found would result in an error message. I repeated this for the other two delimiters, I’m not sure if this section of code is written properly to complete the action, but it made sense in my head. Following all these ifs and else’s is an if to check if the array is empty and would therefore output an error message.

My code definitely has errors and some of my approaches are the wrong way, but it was a way I figured could achieve the goal. I know that there are more simpler ways to express all the if statements that I wrote. I am not entirely sure if the if statements are correct in what I believe they would do. There are also scenarios that I am not accounting for such as nested delimiters and I’m sure other scenarios. I really enjoyed working on this project, although I was unsuccessful, I enjoy projects that pick my brain and make me think. Working through the project I learned more about programming, and I think writing this also helps me clear up my ideas and even critique them when I see them written out. A project that will help me improve as a programmer is always a project, I am willing to devote time to and enjoy successful or not.