Mohammed Suhail Munshi

201231965

Q1)

I first separated the input into a separate function, which made my code easier to read and allows changing it to be less hassle. I then added a while loop to the input function and an if statement, which would break the while loop when the input met the required conditions. I then added another while loop to my main function. This while loop would first call the input function to retrieve a value, then use if statements to determine which of the 3 categories it belongs in. Depending on the category, a different int value (usually named marks) is incremented.

Q2)

I separated my program into two functions, one for input and the main for calculation. The main first calls the input function which (again) uses a while loop and if statements to ensure the input meets all required conditions. Secondly, the main then uses the input (radius 1 and radius2) in order to calculate the required values. For this, a while loop is used, with the condition that radius 1 cannot exceed radius 2. Secondly, within the while loop, the sum of areas and circumference is calculated using radius1. As radius1 increments at the end of the while loop, the sumofAreas and sumofCircumference variables calculate their respective values. When the while loop ends, these values are printed.

Q3)

Unfortunately, I was unable to create a solution that ended once EOF was input. Instead, I created a program that ends when a negative number is input. I first used an input function, to input a variable as an integer. I used a while loop and if statement to ensure it is a positive value. Once the variable meets this criteria, a print method is called, which prints the integer as a character according to its ascii value. The method only ends when ‘-1’ is entered.

Q4)

I created a separate function for the input. I used a while loop and if statement to ensure the criteria for input is met. Once this is done, in the main method the smallest common multiple’s max value is calculated by multiplying the input variables. This value is stored in the variable scm. Then, the highest common factor is calculated. This is done using a method found on bbc bitesize, in which the remainders of a calculation are used. Once the hcf is calculated, the scm calculation is finished by dividing the value retrieved earlier by the hcf. This gives us the actual scm.

Q5)

First, an input function is used to retrieve 3 integers and ensure they are within the bounds of the program using a while loop and if statements. This function is called 3 times, one for each variable. Then, the value of a/b is calculated in a double variable. This variable is called decimal. The value of a/b is then re calculated in a long int called answer. This value is taken away from decimal to ensure no values left of the decimal point remain. The variable decimal is then multiplied by 10^n so that the value the user wished us to retrieve is next to the decimal point on the left. This value is then placed within the long int answer to ensure no numbers right of the decimal point remain. Using the % function, the program then retrieves the value we desire. My method for number retrieval is crude and likely does not work for all of the values within the range specified, however I could not find another method within the scope of out lectures that would work more effectively.