

Lab Basic Console Application with Control Structures

1. Code:

```
package com.example;
import java.util.Scanner;

public class SimpleConsoleApp {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in); // Create once
        String response = "yes";
        do {
            //Step 1: Prompt the user to enter a number between 1 and 10.
            System.out.print("Please enter a number between 1 and 10: ");
            int number = scanner.nextInt();

            //Step 2: Use a while loop to ensure the user enters a valid number. If the
            number is outside the range, prompt the user to enter a valid number again until a valid
            input is provided.
            while (number < 1 || number > 10) { // || is logical OR operator
                System.out.print("Invalid input. Please enter a number between 1 and 10:
");
                number = scanner.nextInt();
            }

            //Step 3: Once a valid number is entered, use an if-else statement to
            determine if the number is even or odd. Print a message to the console indicating whether
            the number is even or odd.
            if (number % 2 == 0) { // modulus operator to check even (divisible by 2)
                System.out.println("The number " + number + " is even.");
            } else {
                System.out.println("The number " + number + " is odd.");
            }

            // Step 4: Use a for loop to print all numbers from 1 up to the entered
            number, but skip numbers divisible by 3 using the continue statement.
            for (int i = 1; i <= number; i++) {
                if (i % 3 == 0) { // modulus operator to check divisibility by 3
                    continue;
                }
                System.out.println(i);
            }

            // Step 5: Use a switch statement to print a message based on the entered
            number. For example:
            //If the number is 1, print "You entered one!"
            //If the number is 2, print "You entered two!"
            //Add cases for at least three numbers, and use a default case to handle
            any other numbers.
            switch (number) {
                case 1:
                    System.out.println("You entered one!");
                    break;
```

```
        case 2:
            System.out.println("You entered two!");
            break;
        case 3:
            System.out.println("You entered three!");
            break;
        case 4:
            System.out.println("You entered four!");
            break;
        default:
            System.out.println("You entered a number between 5 and 10!");
    }
    // Scanner scanner = new Scanner(System.in);
    System.out.print("Do you want to run the program again= (yes/no): ");
    response = scanner.next();
    //Use a do-while loop to repeat the program if the user enters "yes." Exit the
loop if the user enters "no."
    } while (response.equalsIgnoreCase("yes"));
    scanner.close();
}
}
```

//Document Challenges:
// I had troubles with the scanner object as I forgot to close it at the end of the
program.
// I had created the scanner object inside the loop but i never closed it,
// therefore I had to move the declaration of the scanner object outside of the loop and
then close it (after the do while loop)

2. Screenshots of program

```
Please enter a number between 1 and 10: 89
Invalid input. Please enter a number between 1 and 10: 9
The number 9 is odd.
1
2
4
5
7
8
You entered a number between 5 and 10!
Do you want to run the program again= (yes/no): yes
Please enter a number between 1 and 10: 12
Invalid input. Please enter a number between 1 and 10: 4
The number 4 is even.
1
2
4
You entered four!
Do you want to run the program again= (yes/no): yes
Please enter a number between 1 and 10: 6
The number 6 is even.
1
2
4
5
You entered a number between 5 and 10!
Do you want to run the program again= (yes/no): no
n811629@GS000DSn811629M Ironhack %
```

This screenshot shows three iterations of the do while loop. Firstly, the number 89 is inputted, which is an invalid input meaning the program asks again for a valid input from

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1-10. After, the number 9 is inputted and the next line prints that the number is odd. Next, a for loop prints all the numbers from 1 to the entered number (9 in this case) skipping over those numbers that are divisible by 3 (in this case: 3, 6 and 9). Then, the switch statement prints the default case, meaning the number is between 5 and 10. Lastly, the program asks the user if they want to continue running the program, which the user inputs yes, meaning another loop of the code must be completed. In this case, the inputted number is 4 (after inputting 12, which was not in the range 1-10), the next print shows that the number is 4 even and the list from 1-4 is printed (excluding 3 which is a multiple of 3).

After one more loop at the program, the user responds “no” and the program is shut down.