

Montgomery College, CMSC 203
Worksheet 2
Module 3

Objectives

- for Loop
- while Loop
- do while Loop
- Switch statement

Warm-up Questions – (String and relational operator)

1. Which of the following will correctly determine whether string `str1` and `str2` are equal (there may be more than one answer)?

- A) `(str1 == str2)`
- B) `(str1.equals(str2))`
- C) `(str2.equals(str1))`
- D) `(str2 = str1)`

Answer: B and C

2. Which of the following is a relational operator (there might be more than one answer)?

- A) `>`
- B) `||`
- C) `==`
- D) `//`

Answer: A and C

Concept Questions

1. Convert the following if statements into a switch statement.

```
double discountRate;
char custType = 'B';
if(custType == 'A');
    discountRate = .08;
else if(custType == 'B' || custType == 'C')
    discountRate = .04;
else
    discountRate = 0.0;
```

Answer:

```
double discountRate;
char custType = 'B';
switch (custType)
{
    case 'A':
        discountRate = .08;
        break;
    case 'B':
    case 'C':
        discountRate = .04;
        break;
    default:
        discountRate = 0.0;
}
```

2. What will be the value of count after the code is finished running?

```
int count = 0
for(int i = 0; i < 5; i++){
    int j = i;
    while(j < 5){
        count++;
        j++;
    }
}
```

Answer: 15

3. What will be the output of this program?

```
for (int i = 1; i <= 6; i++) {
    for (int j = 1; j <= i; j++) {
        System.out.print("*");
    }
    System.out.println();
}
```

Answer:

```
*  
**  
***  
****  
*****  
*****
```

4. List all the possible outcomes of this switch statement:

```
switch (day)  
{  
    case 1:  
        System.out.print("Monday");  
    case 2:  
        System.out.print("Tuesday");  
    case 3:  
        System.out.print("Wednesday");  
    case 4:  
        System.out.print("Thursday");  
    case 5:  
        System.out.print("Friday");  
}
```

Answer:

```
1 - Monday Tuesday Wednesday Thursday Friday  
2 - Tuesday Wednesday Thursday Friday  
3 - Wednesday Thursday Friday  
4 - Thursday Friday  
5 - Friday  
Any other input - No Output
```

Programming Questions

1. Write the following program:

- Infinitely prompt the user to enter a number until 0 is entered
- Output the number on every iteration
- If the user enters 0, exit the loop and output an exit message

Answer:

```
import java.util.Scanner;

public class LoopProgram {

    public static void main(String [] args){
        Scanner sc = new Scanner(System.in);
        int num = 0;

        do{
            System.out.println("Enter a number:");
            num = sc.nextInt();
            System.out.println("Number entered: " + num);
            if(num == 0){
                System.out.println("Exit");
            }
        }while(num != 0);
    }
}
```