RMIT UNIVERSITY

COLLEGE OF VE, FUTURE TECHNOLOGIES

Course Code and Name: C2511C: Introduction to Programming

Semester 2, 2023 - Lab: 05

REPETITIONS IN JAVA

Exercises

Write Java code for the following exercises

I. Complete the following exercises:

1. Print numbers 1 to 10 using all three looping constructs in Java. (*Refer lecture*)

2. Use a ***while*** loop to print the numbers from 10 to 50.

3. Use a ***do..while*** loop to print the numbers from 100 to 1.

4. Use a ***for*** loop to print the numbers between 1 and 100.

5. Use a ***for*** loop to print the odd numbers between 1 and 100.

II. For the following exercises indicate the output that will be produced. Assume the following declarations are made just before each exercise. That is, assume these initializations are in effect at the beginning of each problem:

```
final int MIN = 10, MAX = 20; int num = 15;
```

```
while (num < MAX){
          System.out.println(num);
          num = num + 1;
       }
```

1.
```
while (num < MAX){
          num = num + 1;
          System.out.println(num);
       }
```

2.
```
do{
          num = num + 1;
          System.out.println(num);
       }while (num <= MAX);
```

3.
```
while (num < MAX){
          System.out.println(num);
          num = num - 1;
       }
```

4.
```
while (num > MIN){
          System.out.println(num);
          num = num - 1;
       }
```

5.
```
while (num < MAX){
          System.out.println(num);
          num += 2;
       }
```

6.
```
while (num < MAX){
          if (num%2 == 0)
            System.out.println(num);
            num++;
       }
```

7.
```
do{
          num = num + 1;
          if (num*2 > MAX+num)
             System.out.println(num);
       }
       while (num <= MAX);
```

8.
```
for (int value=0; value <= 7; value++)
          System.out.println(value);
```

9.
```
for (int value=7; value > 0; value--)
          System.out.println(value);
```

10.
```
for (int value=1; value >= 20; value+=4)
         System.out.println(value);
```

11.
```
for (int value=num; value <= MAX; value++)
System.out.println (value);
```

12.
```
for (int value=num; value <= MAX; value++)
if (value%4 != 0)
System.out.println (value);
```

13.
```
for (int count1=1; count1 <= 7; count1++)
{
 for (int count2=1; count2 <= 5; count2++)
 System.out.print ("#");
 System.out.println();
}
```

14.
```
for (int count1=1; count1 <= 5; count1++)
{
 for (int count2=1; count2 <= 5; count2++)
 System.out.print (count1*count2 + "   ");
 System.out.println();
}
```

III. CALCULATOR:

a. Using a loop, add four numbers. Ask for and store the four numbers as well as display a running total. Print the final total. (Use a for loop)

b. Modify the above program which reads n integers (number of numbers – got as input from the user) and calculates their sum.

IV. BANK ACCOUNT:

Create a bank account and an opening balance.

Enter an amount for a deposit. Enter an amount for a withdrawal.

Allow withdrawals until the balance is 0.

a. If the withdrawal is less than the opening balance plus deposit, print "Congratulations, your closing balance is" followed by the remaining balance.

b. If the withdrawal is equal to the opening balance plus deposit, print "Poor you, your closing balance is" followed by the zero balance.

c. If the withdrawal is greater than the opening balance plus deposit, print "Sorry, withdrawal disallowed as it would overspend your account by: " followed by the amount of withdrawal over remaining balance.

V. Highest score:

Create an algorithm and code the following program:

Create a program that identifies the highest numerical grade entered from a class of students. The number of total students in the class should be entered by the user.

Using a for-loop, the user should be prompted to enter a grade for each student individually. Each student's number will be identified using a count.

Finally display the student's number with the highest score.

Task 2: Complete Online Reflection Quiz

Complete the multi-choice online reflection quiz on canvas. This quiz can be taken as many times as you like and should be used to assist you with your studies.

This quiz will mark itself.

This quiz is not part of your overall grade for the subject

Reminder that our first assessment will take place in Week 6. The assessment will cover the following topics:

- Variables
- Inputs
- Formatting Outputs
- Decision Statements
- Loops