OS Assignment 2

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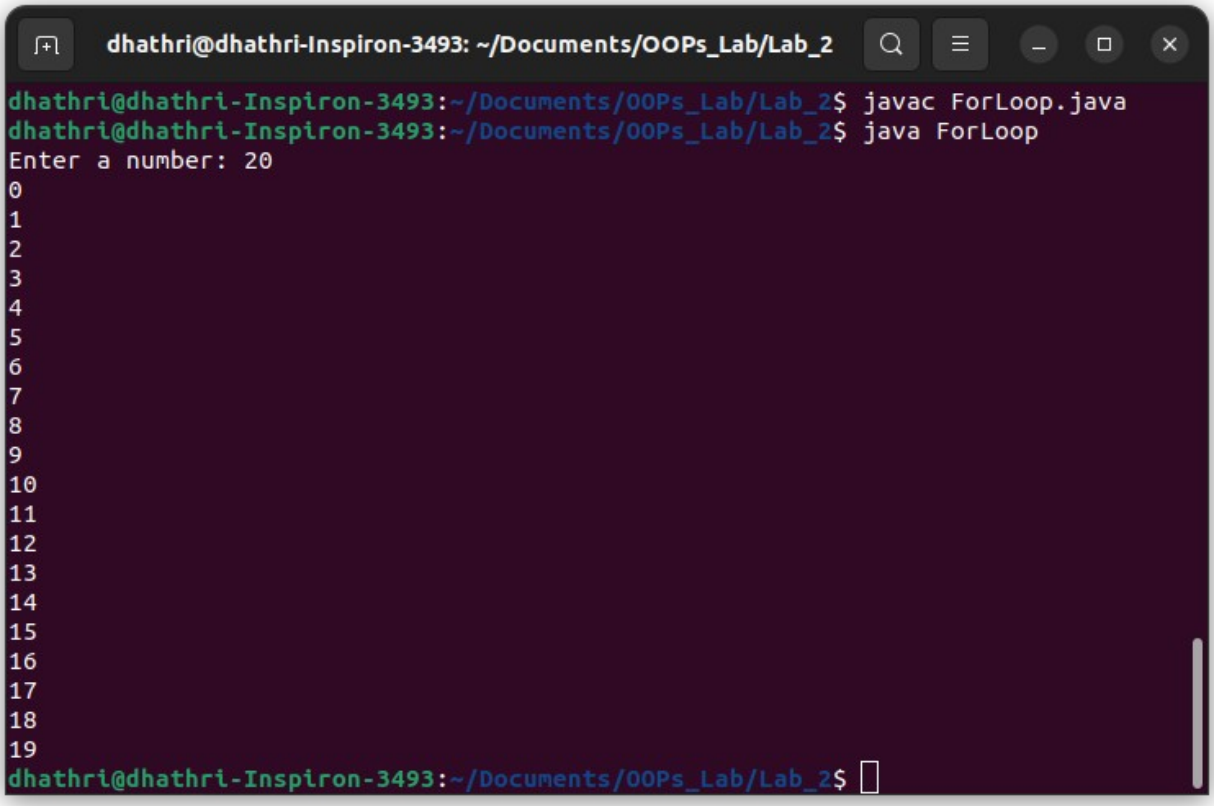
Question 1) For example

ForLoop.java

```java
import java.util.*;
class ForLoop{
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();

        for(int i = 0; i < num; i++){
            System.out.println(i);
        }
    }
}
```



Question 2) While example

While.java

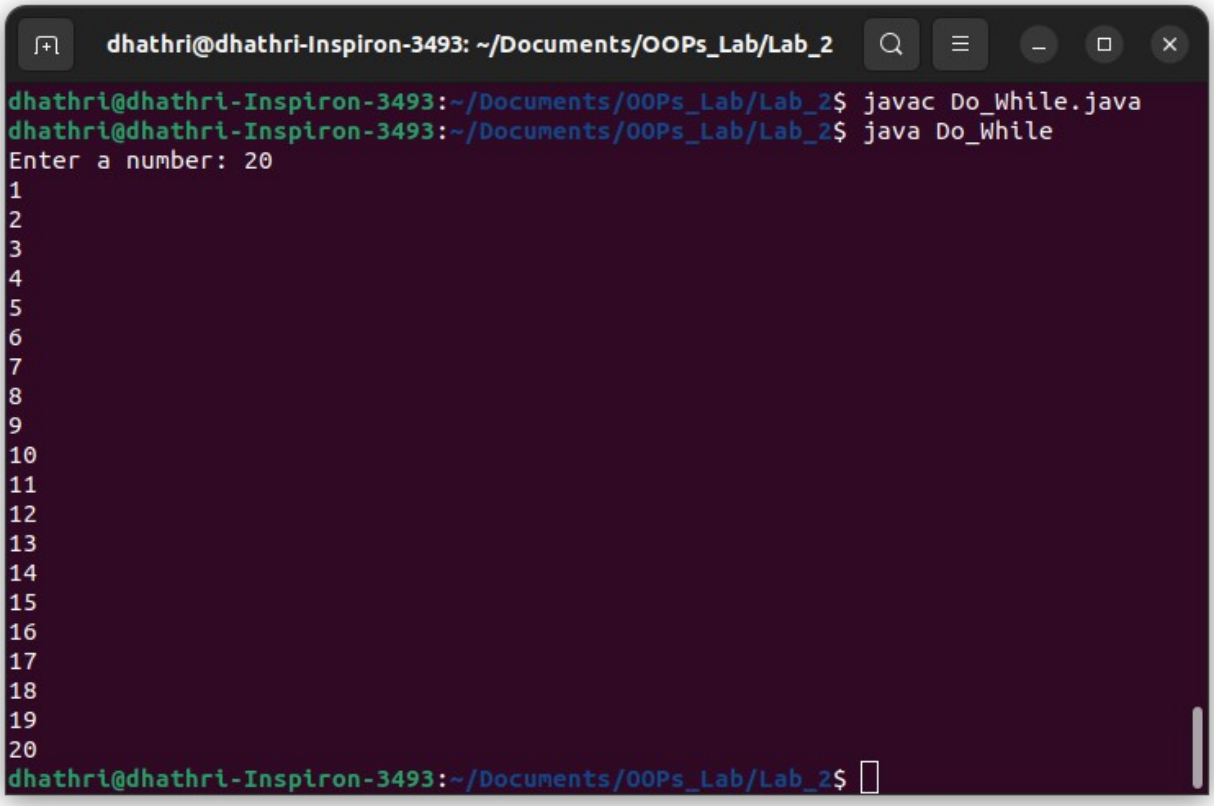
```java
import java.util.*;
class While{
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();

        int i = 0;
        while (i < num){
            System.out.println(i);
            i++;
        }
    }
}
```

```
dhathri@dhathri-Inspiron-3493: ~/Documents/OOPs_Lab/Lab_2
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac While.java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java While
Enter a number: 20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$
```

Question 3) do while example

Do_While.java

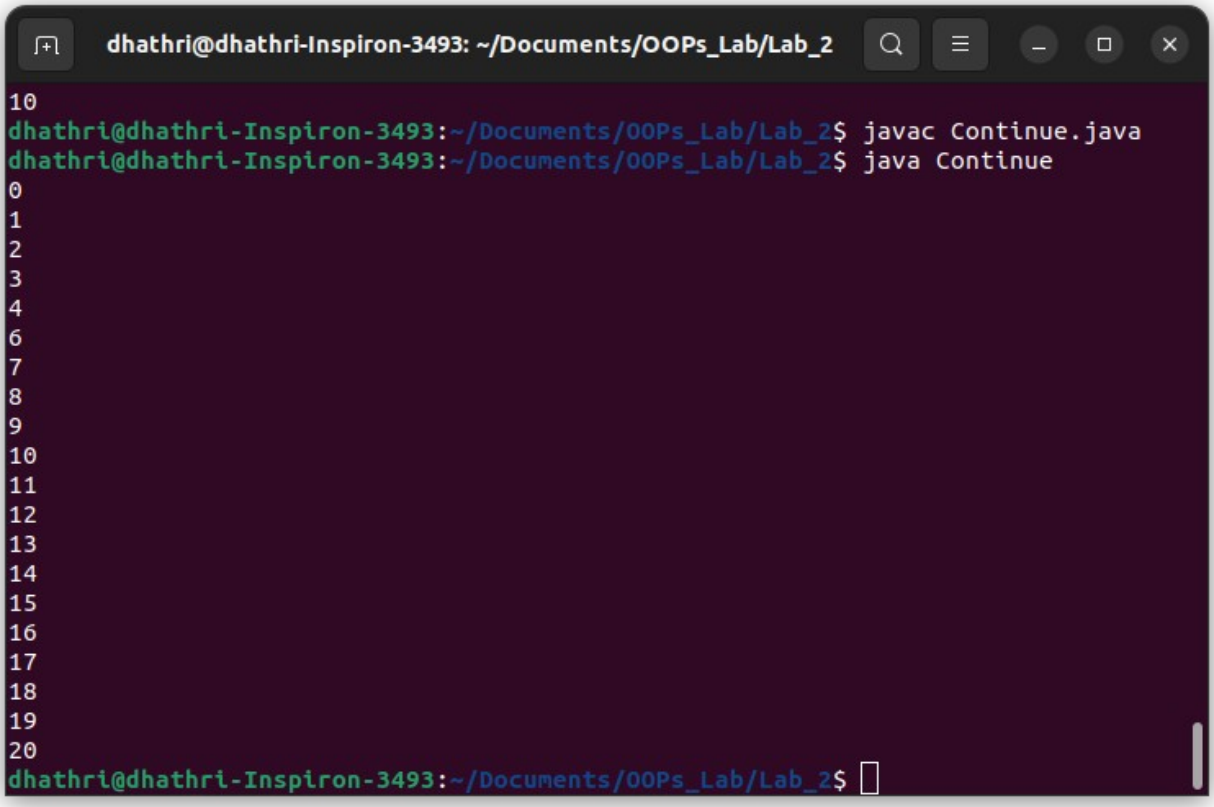
```java
import java.util.*;
class Do_While{
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();

        int i = 0;
        do{
            i++;
            System.out.println(i);
        }while(i < num);
    }
}
```



Question 4) Continue example

Continue.java

```java
//Program to execute continue in JAVA.
class Continue{
    public static void main(String args[]){
        for(int i = 0; i <= 10; i++){
            if(i == 5){
                continue;
            }
            System.out.println(i);
        }
    }
}
//Continue statement will just skip rest of the loop.
```



Question 5) Break example

Break.java

```java
// Program to execute break in JAVA.
class Break{
    public static void main(String args[]){
        int arr[] = {2, 5, 6, 7, 10};
        for(int i = 0; i <= arr.length; i++){
            System.out.println(arr[i]);
            break;
        }
    }
}

//It will execute only the first element of array because break will exit the loop.
```

```
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac Break.java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java Break
2
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$
```

Question 6) Recursion example

Recursion.java

```java
//Recursion in java.
import java.util.*;
class Recursion{
    static int factorial(int n) {
        if (n != 0)  // termination condition
            return n * factorial(n-1); // recursive call
        else
            return 1;
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
        System.out.println("Factorial of "+ num + " = " + factorial(num));
    }
    /*Factorial using recursion. Recursion means calling it again and again.*/
}
```

```
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac Recursion.java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java Recursion
Enter a number: 6
Factorial of 6 = 720
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$
```

Question 7) Menu selection

MenuSelection.java

```java
import java.util.*;
class menuSelection{
    public static void main(String args[]){
        int flag = 0;
        do{
            Scanner sc = new Scanner(System.in);
            System.out.print("Enter the side: ");
            int side = sc.nextInt();
            System.out.println("Enter 1 for area of square");
            System.out.println("Enter 2 for perimeter of square");
            System.out.println("Enter your choice: ");
            int choice = sc.nextInt();
            switch(choice){
                case 1:
                    System.out.println("Area is: " + (side * side));
                    break;
                case 2:
                    System.out.println("Perimeter is: " + (4 * side));
                    break;
            }
            System.out.println("Would you like to continue? Enter 1 for yes, 2 for no:");
            Scanner sc1 = new Scanner(System.in);
            flag = sc1.nextInt();
        }while(flag == 1);
    }
}
```

```
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac MenuSelection.java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java menuSelection
Enter the side: 3
Enter 1 for area of square
Enter 2 for perimeter of square
Enter your choice:
1
Area is: 9
Would you like to continue? Enter 1 for yes, 2 for no:
1
Enter the side: 4
Enter 1 for area of square
Enter 2 for perimeter of square
Enter your choice:
2
Perimeter is: 16
Would you like to continue? Enter 1 for yes, 2 for no:
1
Enter the side: 5
Enter 1 for area of square
Enter 2 for perimeter of square
Enter your choice:
2
Perimeter is: 20
Would you like to continue? Enter 1 for yes, 2 for no:
2
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$
```

Question 8) Summation

Summation.java

```java
import java.util.*;
class Summation{
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
        int i = 0;
        int sum = 0;
        do{
            i++;
            sum = sum + i;
            //System.out.println(sum);
        }while(i < num);

        System.out.println("Sum of numbers :" + sum);
    }
}

```

```
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac Summation.java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java Summation
Enter a number: 5
Sum of numbers :15
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$
```

Question 9) Use continue to print non-fibonacci numbers.

NonFibbo.java

```
1   class fibonacci{
2
3       public static void main(String args[]){
4
5       int first = 0;
6       int second = 1;
7       int next = 0;
8       int i = 1;
9
10      while(i <= 100){
11          if(i > next){
12              next = first + second;
13              first = second;
14              second = next;
15          }
16          if(i == next){
17              i += 1;
18              continue;
19          }
20          else{
21              System.out.println(i);
22          }
23
24          i += 1;
25      }
26
27      }
28  }
```

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```
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac NonFibbo.java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java fibonacci
4
6
7
9
10
11
12
14
15
16
17
18
19
20
22
23
24
25
26
27
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43
44
```
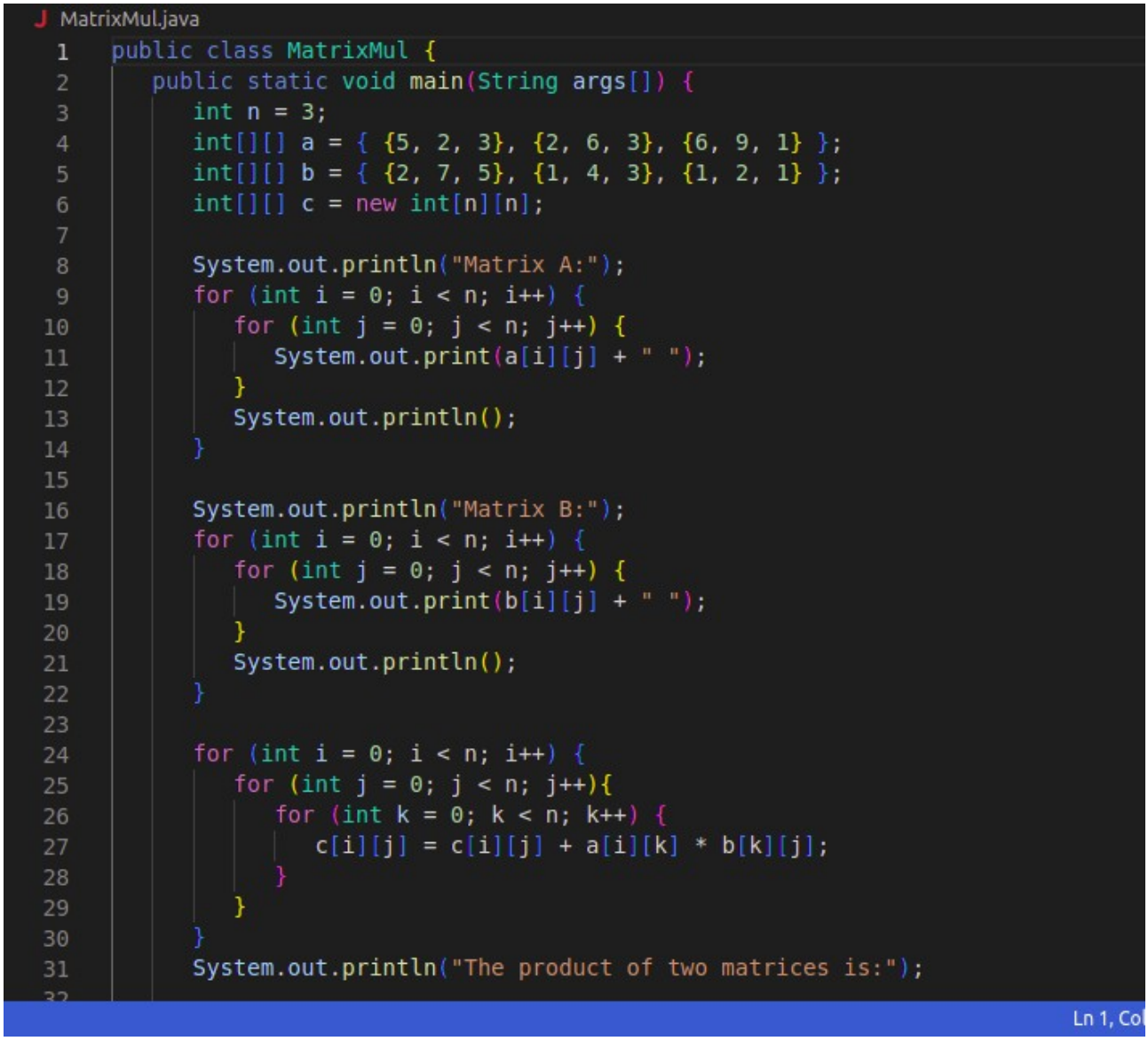

Question 10) Matrix multiplication



```
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac MatrixMul.
java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java MatrixMul
Matrix A:
5 2 3
2 6 3
6 9 1
Matrix B:
2 7 5
1 4 3
1 2 1
The product of two matrices is:
15 49 34
13 44 31
22 80 58
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$
```