

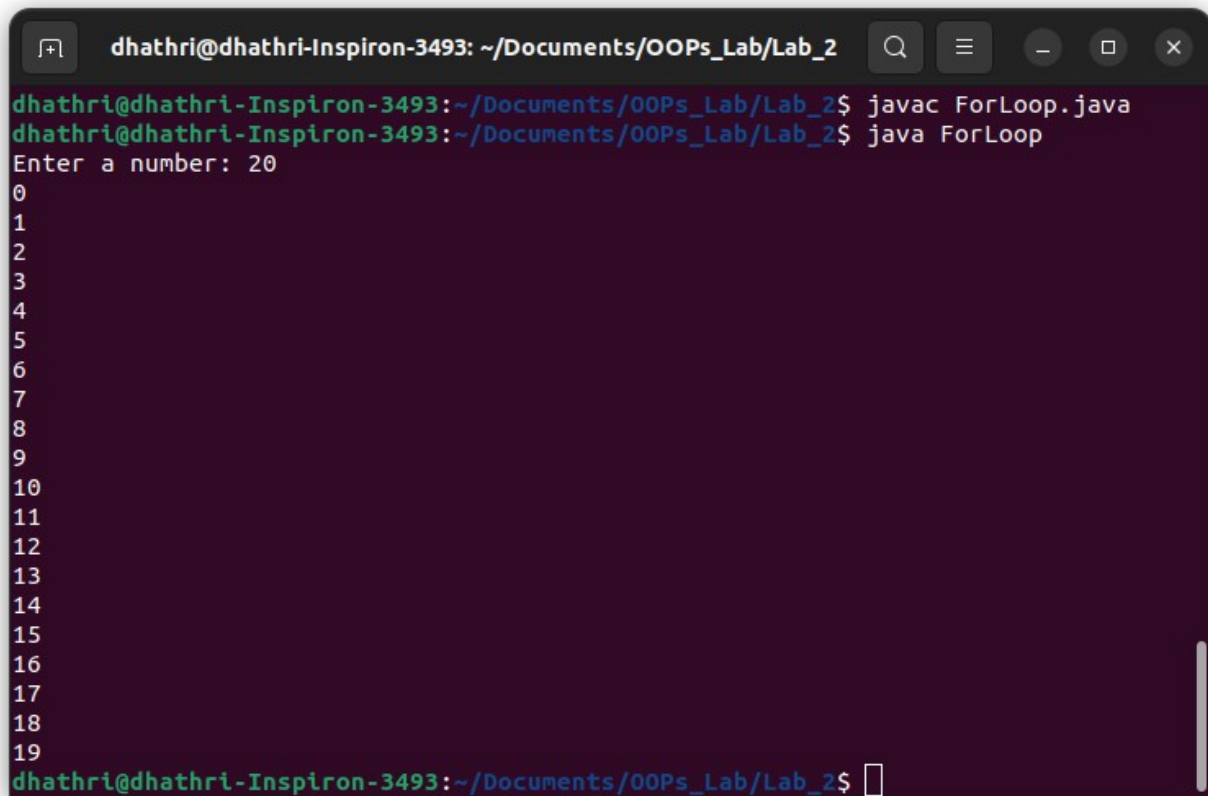
OS Assignment 2

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Question 1) For example

```
J ForLoop.java
1  import java.util.*;
2  class ForLoop{
3      public static void main(String args[]){
4          Scanner sc = new Scanner(System.in);
5          System.out.print("Enter a number: ");
6          int num = sc.nextInt();
7
8          for(int i = 0; i < num; i++){
9              System.out.println(i);
10         }
11     }
12 }
```



The screenshot shows a terminal window titled "dhathri@dhathri-Inspiron-3493: ~/Documents/OOPs_Lab/Lab_2". The user has entered the command `javac ForLoop.java` and then `java ForLoop`. The program prompts "Enter a number: 20". The output shows a list of numbers from 0 to 19, each on a new line, indicating that the loop executed 20 times (from i=0 to i=19). The terminal window has standard Linux window controls (minimize, maximize, close) and a search icon.

```
dhathri@dhathri-Inspiron-3493: ~/Documents/OOPs_Lab/Lab_2
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ javac ForLoop.java
dhathri@dhathri-Inspiron-3493:~/Documents/OOPs_Lab/Lab_2$ java ForLoop
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 2) While example

```
J While.java
1  import java.util.*;
2  class While{
3      public static void main(String args[]) {
4          Scanner sc = new Scanner(System.in);
5          System.out.print("Enter a number: ");
6          int num = sc.nextInt();
7
8          int i = 0;
9          while (i < num){
10             System.out.println(i);
11             i++;
12         }
13     }
14 }
```

```
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

```
J Do_While.java
1  import java.util.*;
2  class Do_While{
3      public static void main(String args[]){
4          Scanner sc = new Scanner(System.in);
5          System.out.print("Enter a number: ");
6          int num = sc.nextInt();
7
8          int i = 0;
9          do{
10             i++;
11             System.out.println(i);
12         }while(i < num);
13     }
14 }
15
```

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

Question 4) Continue example

```
J Continue.java
1 //Program to execute continue in JAVA.
2 class Continue{
3     public static void main(String args[]){
4         for(int i = 0; i <= 10; i++){
5             if(i == 5){
6                 continue;
7             }
8             System.out.println(i);
9         }
10    }
11 }
12 //Continue statement will just skip rest of the loop.
```

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

Question 5) Break example

```
J Break.java
1 // Program to execute break in JAVA.
2 class Break{
3     public static void main(String args[]){
4         int arr[] = {2, 5, 6, 7, 10};
5         for(int i = 0; i <= arr.length; i++){
6             System.out.println(arr[i]);
7             break;
8         }
9     }
10 }
11
12 //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

```
J Recursion.java
1 //Recursion in java.
2 import java.util.*;
3 class Recursion{
4     static int factorial(int n) {
5         if (n != 0) // termination condition
6             return n * factorial(n-1); // recursive call
7         else
8             return 1;
9     }
10
11     public static void main(String[] args) {
12         Scanner sc = new Scanner(System.in);
13         System.out.print("Enter a number: ");
14         int num = sc.nextInt();
15         System.out.println("Factorial of "+ num + " = " + factorial(num));
16     }
17     /*Factorial using recursion. Recursion means calling it again and again.*/
18 }
```

```
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

```
J MenuSelection.java
1  import java.util.*;
2  class menuSelection{
3      public static void main(String args[]){
4          int flag = 0;
5          do{
6              Scanner sc = new Scanner(System.in);
7              System.out.print("Enter the side: ");
8              int side = sc.nextInt();
9              System.out.println("Enter 1 for area of square");
10             System.out.println("Enter 2 for perimeter of square");
11             System.out.println("Enter your choice: ");
12             int choice = sc.nextInt();
13             switch(choice){
14                 case 1:
15                     System.out.println("Area is: " + (side * side));
16                     break;
17                 case 2:
18                     System.out.println("Perimeter is: " + (4 * side));
19                     break;
20             }
21             System.out.println("Would you like to continue? Enter 1 for yes, 2 for no:");
22             Scanner scl = new Scanner(System.in);
23             flag = scl.nextInt();
24         }while(flag == 1);
25     }
26 }
```

```
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

```
J Summation.java
1  import java.util.*;
2  class Summation{
3      public static void main(String args[]) {
4          Scanner sc = new Scanner(System.in);
5          System.out.print("Enter a number: ");
6          int num = sc.nextInt();
7          int i = 0;
8          int sum = 0;
9          do{
10             i++;
11             sum = sum + i;
12             //System.out.println(sum);
13         }while(i < num);
14
15         System.out.println("Sum of numbers : " + sum);
16     }
17 }
18
```

```
dhathri@dhathri-Inspiron-3493:~/Documents/00Ps_Lab/Lab_2$ javac Summation.java
dhathri@dhathri-Inspiron-3493:~/Documents/00Ps_Lab/Lab_2$ java Summation
Enter a number: 5
Sum of numbers :15
dhathri@dhathri-Inspiron-3493:~/Documents/00Ps_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
28
29
30
31
32
33
35
36
37
38
39
40
41
42
43
44
```


Question 10) Matrix multiplication

```
J MatrixMul.java
1 public class MatrixMul {
2     public static void main(String args[]) {
3         int n = 3;
4         int[][] a = { {5, 2, 3}, {2, 6, 3}, {6, 9, 1} };
5         int[][] b = { {2, 7, 5}, {1, 4, 3}, {1, 2, 1} };
6         int[][] c = new int[n][n];
7
8         System.out.println("Matrix A:");
9         for (int i = 0; i < n; i++) {
10             for (int j = 0; j < n; j++) {
11                 System.out.print(a[i][j] + " ");
12             }
13             System.out.println();
14         }
15
16         System.out.println("Matrix B:");
17         for (int i = 0; i < n; i++) {
18             for (int j = 0; j < n; j++) {
19                 System.out.print(b[i][j] + " ");
20             }
21             System.out.println();
22         }
23
24         for (int i = 0; i < n; i++) {
25             for (int j = 0; j < n; j++){
26                 for (int k = 0; k < n; k++) {
27                     c[i][j] = c[i][j] + a[i][k] * b[k][j];
28                 }
29             }
30         }
31         System.out.println("The product of two matrices is:");
32     }
```

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```
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$
```