

OOPS IN JAVA

TUTORIAL - 3

Karthik Krishnan

Roll No: 45

S3 CSE B

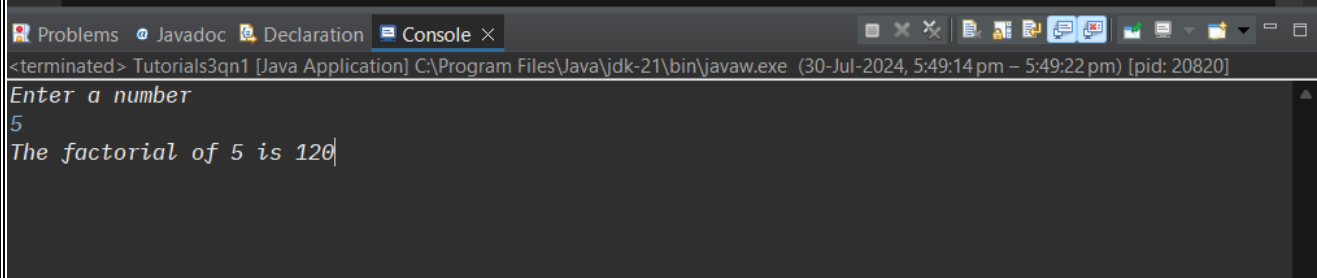
Control Statements

Module - 2

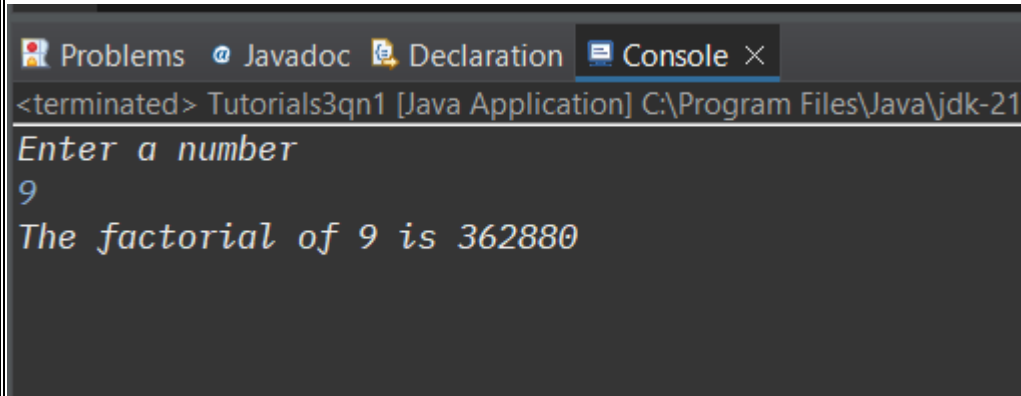
Qn 1) Write a Java program to print the factorial of a given number using a while loop.

```
Arithmetica... Numbersign.java Tutorials5q... Tutorials5q... Tutorials3q... × Tutorials3q... »
1  /*
2   TUTORIALS 3
3   MODULE - 2
4   CONTROL STATEMENTS
5   QN 1)
6   Write a Java program to print the factorial of a given number using a while loop.
7
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11  */
12
13  package Tutorials3;
14  import java.util.Scanner;
15  public class Tutorials3qn1 {
16
17      public static void main(String[] args) {
18          // TODO Auto-generated method stub
19          Scanner sc = new Scanner(System.in);
20          System.out.println("Enter a number");
21          int num = sc.nextInt();
22
23          int fact = 1;
24          int i = 1;
25
26          while(i <= num)
27          {
28              fact *= i;
29              i++;
30          }
31          System.out.println("The factorial of " + num + " is " + fact);
32
33          sc.close();
34
35      }
36
37  }
```

OUTPUT:



```
Problems  Javadoc  Declaration  Console X
<terminated> Tutorials3qn1 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (30-Jul-2024, 5:49:14 pm – 5:49:22 pm) [pid: 20820]
Enter a number
5
The factorial of 5 is 120
```



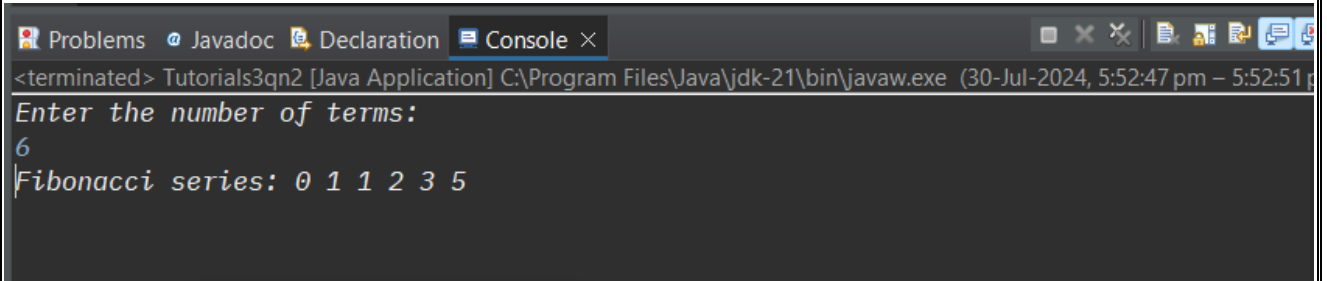
```
Problems  Javadoc  Declaration  Console X
<terminated> Tutorials3qn1 [Java Application] C:\Program Files\Java\jdk-21
Enter a number
9
The factorial of 9 is 362880
```

Qn 2) Write a java program to print the Fibonacci series up to a given number using a while loop

```
Arithmetica... Numbersign.java Tutorials5q... Tutorials3q... Tutorials3q... × Tutorials3q...
1 /*
2  TUTORIALS 3
3  MODULE - 2
4  CONTROL STATEMENTS
5  QN 2)
6  Write a Java program to print the Fibonacci series up to a given number using a
7  while loop.
8
9  Karthik Krishnan
10 S3 CSE B
11 Roll: 45
12 */
13
```

```
14 package Tutorials3;
15 import java.util.Scanner;
16 public class Tutorials3qn2 {
17
18     public static void main(String[] args) {
19         // TODO Auto-generated method stub
20         Scanner sc = new Scanner(System.in);
21         System.out.println("Enter the number of terms: ");
22         int num = sc.nextInt();
23
24         int a = 0; //a - first number
25         int b = 1; //b - second number
26
27         System.out.print("Fibonacci series: " + a + " " + b);
28
29         int temp = a + b;
30
31         while (temp <= num)
32         {
33             System.out.print(" " + temp);
34             a = b;
35             b = temp;
36             temp = a + b;
37         }
38
39         sc.close();
40
41
42     }
43 }
44
45 }
46
```

OUTPUT:



The screenshot shows an IDE console window with the following content:

```
<terminated> Tutorials3qn2 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (30-Jul-2024, 5:52:47 pm - 5:52:51 pm)  
Enter the number of terms:  
6  
Fibonacci series: 0 1 1 2 3 5
```

The console window has a title bar with tabs for 'Problems', 'Javadoc', 'Declaration', and 'Console'. The 'Console' tab is active. The output shows the program asking for the number of terms, receiving '6', and then displaying the first six terms of the Fibonacci sequence: 0, 1, 1, 2, 3, and 5.

Qn 3) write a java program to print the reverse of a given number using a for loop.

```
Arithmetica... Numbersign.java Tutorials3q... Tutorials3q... Tutorials3q... Tutorials3q... ×
1 /*
2 TUTORIALS 3
3 MODULE - 2
4 CONTROL STATEMENTS
5 QN 3)
6 Write a Java program to print the reverse of a given number using a for loop.
7
8 Karthik Krishnan
9 S3 CSE B
10 Roll: 45
11 */
12
13
14
15 package Tutorials3;
16 import java.util.Scanner;
17 public class Tutorials3qn3 {
18
19     public static void main(String[] args) {
20         // TODO Auto-generated method stub
21         Scanner sc = new Scanner(System.in);
22
23         System.out.println("Enter a number");
24         int num = sc.nextInt();
25
26         int rev = 0;
27
28         for(int n = num; n != 0; n/=10)
29         {
30             int digit = n %10;
31             rev = rev * 10 + digit;
32         }
33
34         System.out.println("The reverse of " + num + " is " + rev);
35
36         sc.close();
37     }
38
39 }
40
```

OUTPUT:

```
Problems Javadoc Declaration Console ×
<terminated> Tutorials3qn3 [Java Application] C:\Program Files\Java\jdk-21\bin\java
Enter a number
12487
The reverse of 12487 is 78421
```

Qn 4) write a java program to check if a leap year or not using if-else statemenets.

```
Arithmetica...  Tutorials3q...  Tutorials3q...  Tutorials3q...  Tutorials3q...  Tutorials3q...  »
1  /*
2   TUTORIALS 3
3   MODULE - 2
4   CONTROL STATEMENTS
5   QN 4)
6   Write a Java program to check if a given year is a leap year or not using if-else
7   statements.
8
9   Karthik Krishnan
10  S3 CSE B
11  Roll: 45
12  */
13
14
15 package Tutorials3;
16
17 import java.util.Scanner;
18
19 public class Tutorials3qn4 {
20
21     public static void main(String[] args)
22     {
23         // TODO Auto-generated method stub
24         Scanner sc = new Scanner(System.in);
25         System.out.println("Enter a year: ");
26         int year = sc.nextInt();
27
28         if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0))
29         {
30             System.out.println(year + " is a leap year.");
31         }
32         else
33         {
34             System.out.println(year + " is not a leap year.");
35         }
36
37         sc.close();
38
39     }
40 }
41
42 }
43
```

OUTPUT:

```
Problems Javadoc Declaration Console X
<terminated> Tutorials3qn4 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe
Enter a year:
2004
2004 is a leap year.
```

```
Problems Javadoc Declaration Console X
<terminated> Tutorials3qn4 [Java Application] C:\Program Files\Java\jdk-21
Enter a year:
2024
2024 is a leap year.
```

```
Problems Javadoc Declaration Console X
<terminated> Tutorials3qn4 [Java Application] C:\Program Files\Java\jdk-2
Enter a year:
2002
2002 is not a leap year.
```


Qn 5) write a java program to print all prime numbers between 1 and 100 using a for loop and if-else statements.

```
1 /*
2  TUTORIALS 3
3  MODULE - 2
4  CONTROL STATEMENTS
5  QN 5)
6  Write a Java program to print all prime numbers between 1 and 100 using a for
7  loop and if-else statements
8
9  Karthik Krishnan
10 S3 CSE B
11 Roll: 45
12 */
13
```

```
14 package Tutorials3;
15 public class Tutorials3qn5 {
16
17     public static void main(String[] args) {
18         // TODO Auto-generated method stub
19         System.out.println("Prime numbers between 1 and 100: ");
20         for(int num = 2; num <= 100; num++)
21         {
22             int divisor = 2;
23             int Prime = 1;
24
25             while (divisor <= Math.sqrt(num))
26             {
27                 if (num % divisor == 0)
28                 {
29                     Prime = 0;
30                     break;
31                 }
32                 divisor++;
33             }
34             if (Prime==1)
35             {
36                 System.out.print(num + " ");
37             }
38         }
39     }
40 }
41 }
42
```

```
Problems Javadoc Declaration Console ×
<terminated> Tutorials3qn5 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (30-Jul-2024, 6:16:09 pm - 6:16:10 pm)
Prime numbers between 1 and 100:
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
```