

Level 1 Practice Programs

1. Write a program to check if a number is divisible by 5.

```
import java.util.Scanner;
public class DivBy5{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n;
        System.out.print("Enter the number : ");
        n = input.nextInt();
        //Conditional statements
        if (n%5 == 0){
            System.out.print(+n+ " is divisible by 5");
        }else{
            System.out.println(+n+ " is not divisible by 5");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac DivBy5.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java DivBy5
```

```
Enter the number : 56
```

```
56 is not divisible by 5
```

2. Write a program to check if the first is the smallest of the 3 numbers.

```
import java.util.Scanner;
public class SmallestNo{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n1,n2,n3;
        System.out.print("Enter the 1st number : ");
        n1 = input.nextInt();
        System.out.print("Enter the 2nd number : ");
        n2 = input.nextInt();
        System.out.print("Enter the 3rd number : ");
        n3 = input.nextInt();

        //Conditional Statements
        if(n1 < n2 && n1 < n3){
            System.out.print("Yes! The first number is the smallest number.");
        }else{
            System.out.println("No! The first number is not the smallest number.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac SmallestNo.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java SmallestNo
```

```
Enter the 1st number : 5
```

```
Enter the 2nd number : 9
```

```
Enter the 3rd number : 4
```

```
No! The first number is not the smallest number.
```

3. Write a program to check if the first, second, or third number is the largest of the three.

```
import java.util.Scanner;
public class LargestNo{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n1,n2,n3;
        System.out.print("Enter the 1st number : ");
        n1 = input.nextInt();
        System.out.print("Enter the 2nd number : ");
        n2 = input.nextInt();
        System.out.print("Enter the 3rd number : ");
        n3 = input.nextInt();

        //Conditional Statements
        if(n1 > n2 && n1 > n3){
            System.out.println("The First number is largest.");
        }else{
            System.out.println("The First number is not the largest.");
        }
        if(n2 > n1 && n2 > n3){
            System.out.println("The Second number is largest.");
        }else{
            System.out.println("The Second number is not the largest.");
        }
        if(n3 > n1 && n3 > n2){
            System.out.println("The Third number is largest.");
        }else{
            System.out.println("The Third number is not the largest.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac LargestNo.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java LargestNo
```

```
Enter the 1st number : 85
Enter the 2nd number : 94
Enter the 3rd number : 53
The First number is not the largest.
The Second number is largest.
The Third number is not the largest.
```

4. Write a program to check for the natural number and write the sum of n natural numbers.

```
import java.util.Scanner;
public class SumOfNatural{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n;
        System.out.print("Enter the number : ");
        n = input.nextInt();

        //Conditional Statements
        if(n>0){
            int sum = (n * (n + 1)) / 2;
            System.out.print("The sum of first " +n+ " numbers is " +sum);
        }else{
            System.out.println("Enter a positive number.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac SumOfNatural.java
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java SumOfNatural
Enter the number : 9
The sum of first 9 numbers is 45
```

5. Write a program to check whether a person can vote, depending on whether his/her age is greater than or equal to 18.

```
import java.util.Scanner;
public class Vote{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n;
        System.out.print("Enter the age : ");
        n = input.nextInt();

        //Conditional Statements
        if(n >= 18 && n > 0){
            System.out.print("The person is eligible to vote.");
        }else if(n < 18 && n > 0){
            System.out.print("The person is not eligible to vote.");
        }else{
            System.out.print("Enter a valid age.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac Vote.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Vote
```

```
Enter the age : 49
```

```
The person is eligible to vote.
```

6. Write a program to check whether a number is positive, negative, or zero.

```
import java.util.Scanner;
public class CheckNumber{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n;
        System.out.print("Enter a number : ");
        n = input.nextInt();

        //Conditional Statements
        if(n > 0){
            System.out.print("The given number " +n+ " is positive.");
        }else if(n < 0){
            System.out.print("The given number " +n+ " is negative.");
        }else{
            System.out.print("The given number " +n+ " is equal to 0.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac CheckNumber.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java CheckNumber
```

```
Enter a number : 69
```

```
The given number 69 is positive.
```

7. Write a program SpringSeason that takes two int values month and day from the command line and prints "Its a Spring Season" otherwise prints "Not a Spring Season".

```
import java.util.Scanner;
public class SpringSeason{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int d,m;
        System.out.print("Enter the month (1 - 12) : ");
        m = input.nextInt();
        System.out.print("Enter the date (1 - 31) : ");
        d = input.nextInt();

        //Conditional Statements
        if(m >= 3 && d >= 20){
            if(m <= 6 && d <= 20){
                System.out.println("It is a Spring Season.");
            }
            else{
                System.out.println("It is not a Spring Season.");
            }
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac SpringSeason.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java SpringSeason
```

```
Enter the month (1 - 12) : 6
```

```
Enter the date (1 - 31) : 21
```

```
It is not a Spring Season.
```

8. Write a program to count down the number from the user input value to 1 using a *while* loop for a rocket launch.

```
import java.util.Scanner;
public class Rocket{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n;
        System.out.print("Enter the starting number of countdown : ");
        n = input.nextInt();

        //Using While Loop
        while(n>=1){
            System.out.println(n);
            n--;
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac Rocket.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Rocket
```

```
Enter the starting number of countdown : 8
```

```
8
7
6
5
4
3
2
1
```


9. Rewrite program 8 to do the countdown using the *for*-loop.

```
import java.util.Scanner;
public class Rocket_2{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int n;
        System.out.print("Enter the starting number of countdown : ");
        n = input.nextInt();

        //Using For Loop
        for(int i = n; i >= 1; i--){
            System.out.println(i);
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Rocket_2
Enter the starting number of countdown : 12
12
11
10
9
8
7
6
5
4
3
2
1
```

10. Write a program to find the sum of numbers until the user enters 0.

```
import java.util.Scanner;
public class Countdown{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        double n = 1.0;
        double sum = 0.0;

        //Using While loop
        while(n != 0.0){
            System.out.print("Enter a number : ");
            n = input.nextDouble();
            sum += n;
        }
        System.out.println("The sum is : " +sum);
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac Countdown.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Countdown
```

```
Enter a number : 9
```

```
Enter a number : 8
```

```
Enter a number : 2
```

```
Enter a number : 5
```

```
Enter a number : 6
```

```
Enter a number : 0
```

```
The sum is : 30.0
```

11. Rewrite the program 10 to find the sum until the user enters 0 or a negative number using `while` loop and `break` statement.

```
import java.util.Scanner;
public class Countdown_2{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring variables
        int sum = 0;
        int n;

        //Using While Loop
        while(true){
            System.out.print("Enter a number : ");
            n = input.nextInt();
            if(n <= 0){
                break;
            }
            sum += n;
        }

        //Printing Output
        System.out.println("The sum is : " +sum);
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac Countdown_2.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Countdown_2
```

```
Enter a number : 9
```

```
Enter a number : 8
```

```
Enter a number : 6
```

```
Enter a number : 2
```

```
Enter a number : 7
```

```
Enter a number : -4
```

```
The sum is : 32
```

12. Write a program to find the sum of n natural numbers using **while** loop compare the result with the formulae $n*(n+1)/2$ and show the result from both computations was correct.

```
import java.util.Scanner;
public class NatNum{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int sum = 0;
        int sum2 = 0;
        int n;

        System.out.print("Enter a number : ");
        n = input.nextInt();

        //Using conditional statement
        if(n > 0){
            int m = n;
            while (n != 0){    //Using while loop
                sum += n;
                n--;
            }

            sum2 = (m*(m+1))/2;

            //Printing Output
            System.out.println("The sum using loop : " +sum);
            System.out.println("The sum using formula : " +sum2);
        }
        else {
            System.out.println("The number must be a natural number.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac NatNum.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java NatNum
```

```
Enter a number : 9
```

```
The sum using loop : 45
```

```
The sum using formula : 45
```

13. Rewrite the program number 12 with the **for** loop instead of a while loop to find the sum of n Natural Numbers.

```
import java.util.Scanner;
public class NatNum2{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int sum = 0;
        int sum2 = 0;
        int n;

        System.out.print("Enter a number : ");
        n = input.nextInt();

        //Using conditional statement
        if(n > 0){
            int m = n;
            for(int i = n; i > 0; i--){        //Using for loop
                sum += i;
            }

            sum2 = (m*(m+1))/2;

            //Printing Output
            System.out.println("The sum using loop : " +sum);
            System.out.println("The sum using formula : " +sum2);
        }

        else {
            System.out.println("The number must be a natural number.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac NatNum2.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java NatNum2
```

```
Enter a number : 9
```

```
The sum using loop : 45
```

```
The sum using formula : 45
```

14. Write a Program to find the factorial of an integer entered by the user.

```
import java.util.Scanner;
public class Factorial{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring variables
        int n;
        int fac = 1;

        System.out.print("Enter a number : ");
        n = input.nextInt();

        //Using conditional statements
        if(n >= 0){
            int m = n;
            while(n != 0){        //Using while loop
                fac *= n;
                n--;
            }

            //Printing output
            System.out.println("The factorial of " +m+ " is : " +fac);
        }
        else{
            System.out.println("Enter a positive number.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac Factorial.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Factorial
Enter a number : 8
The factorial of 8 is : 40320
```

15. Rewrite program 14 using for loop.

```
import java.util.Scanner;
public class Factorial2{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring variables
        int n;
        int fac = 1;

        System.out.print("Enter a number : ");
        n = input.nextInt();

        //Using conditional statement
        if(n >= 0){
            int m = n;
            for(int i = n; i > 0; i--){        //Using for loop
                fac *= i;
            }

            //Printing output
            System.out.println("The factorial of " +m+ " is : " +fac);
        }
        else{
            System.out.println("Enter a positive number.");
        }
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac Factorial2.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Factorial2
```

```
Enter a number : 7
```

```
The factorial of 7 is : 5040
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>javac Factorial2.java
```

```
C:\Users\Shounak Roy\Desktop\JAVA\WEEK 3\LEVEL 1>java Factorial2
```

```
Enter a number : -6
```

```
Enter a positive number.
```