**EXERCISE 1**

1. Write a Java program to print 'Hello' on screen and then print your name on a separate line.
2. Write a Java program to display the following pattern.   
   Sample Pattern :

J a v v a

J a a v v a a

J J aaaaa V V aaaaa

JJ a a V a a

1. Write a Java program to print a face.

Expected Output

+"""""+

[| o o |]

| ^ |

| '-' |

+-----+

1. Write a Java program to print an American flag on the screen.

Expected Output

\* \* \* \* \* \* ==================================

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1. Write a Java program to check whether Java is installed on your computer.

Expected Output

Java Version: 1.8.0\_71

Java Runtime Version: 1.8.0\_71-b15

Java Home: /opt/jdk/jdk1.8.0\_71/jre

Java Vendor: Oracle Corporation

Java Vendor URL: http://Java.oracle.com/

Java Class Path: .

1. Write a Java program to print the following string in a specific format.

Sample Output

Twinkle, twinkle, little star,

How I wonder what you are!

Up above the world so high,

Like a diamond in the sky.

Twinkle, twinkle, little star,

How I wonder what you are

1. Write a Java program to display the system time.

Sample Output:

Current Date time: Fri Jun 16 14:17:40 IST 2017

1. Write a Java program to display the current date time in specific format.

Sample Output:

*Now: 2017/06/16 08:52:03.066*

**EXERCISE 2**

1. Write a Java program to print the sum (addition), multiply, subtract, divide and remainder of two numbers.

Test Data:

Input first number: 125  
Input second number: 24  
Expected Output:   
125 + 24 = 149  
125 - 24 = 101  
125 x 24 = 3000  
125 / 24 = 5  
125 mod 24 = 5

1. Write a Java program that takes a number as input and prints its multiplication table upto 10.

Test Data:   
Input a number: 8  
Expected Output:   
8 x 1 = 8  
8 x 2 = 16  
8 x 3 = 24  
...  
8 x 10 = 80

1. Write a Java program to swap two variables. Also try to swap without using third variable.
2. Write a Java program to convert temperature from Fahrenheit to Celsius degree.

Test Data  
Input a degree in Fahrenheit: 212  
Expected Output:   
212.0 degree Fahrenheit is equal to 100.0 in Celsius.

1. Write a Java program to break an integer into a sequence of individual digits.

Test Data  
Input six non-negative digits: 123456  
Expected Output:   
1 2 3 4 5 6

1. Write a Java program that reads an integer between 0 and 1000 and adds all the digits in the integer.

Test Data  
Input an integer between 0 and 1000: 565  
Expected Output:   
The sum of all digits in 565 is 16.

1. Write a Java program that accepts two integers from the user and then prints the sum, the difference, the product, the average, the distance (the difference between integer), the maximum (the larger of the two integers), and the minimum (smaller of the two integers).

Test Data  
Input 1st integer: 25   
Input 2nd integer: 5

Expected Output:   
Sum of two integers: 30  
Difference of two integers: 20  
Product of two integers: 125  
Average of two integers: 15.00  
Distance of two integers: 20  
Max integer: 25   
Min integer: 5

1. Write a Java program to print the ascii value of a given character.

Expected Output

The ASCII value of Z is :90

1. Write a Java program to convert a string to an integer in Java.

Sample Output:

Input a number (string): 25

The integer value is: 25

1. Write a Java program to convert seconds to hour, minute and seconds.  
   Sample Output:

Input seconds: 86399

23:59:59

**EXERCISE 3**

1. Write a Java program that reads an integer and check whether it is negative, zero, or positive.

Test Data  
Input a number: 7   
Expected Output:

Number is positive

1. Write a Java program to accept a number and check the number is even or not. Prints 1 if the number is even or 0 if the number is odd.   
   Sample Output:

Input a number: 20

1

1. Write a Java program to print the odd numbers from 1 to 99. Prints one number per line.

Sample Output:

1

3

5

7

9

11

....

91

93

95

97

99

1. Write a Java program to print numbers between 1 to 100 which are divisible by 3, 5 and by both.   
   Sample Output:

Divided by 3:

3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57

,60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99,

Divided by 5:

5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95,

Divided by 3 & 5:

15, 30, 45, 60, 75, 90,

1. Take three numbers from the user and print the greatest number.

Test Data:  
Input the 1st number: 25   
Input the 2nd number: 78   
Input the 3rd number: 87  
Expected Output:  
The greatest: 87

1. Write a Java program to find the number of days in a month.  Test Data  
   Input a month number: 2  
   Input a year: 2016  
   Expected Output :  
   February 2016 has 29 days
2. Write a Java program that takes the user to provide a single character from the alphabet. Print Vowel or Consonant, depending on the user input. If the user input is not a letter (between a and z or A and Z), or is a string of length > 1, print an error message.

Test Data  
Input an alphabet: p  
Expected Output:  
Input letter is Consonant

1. Write a Java program that takes a year from user and print whether that year is a leap year or not.

Test Data  
Input the year: 2016  
Expected Output:  
2016 is a leap year

1. Write a program in Java to display the cube of the number upto given an integer.

Test Data  
Input number of terms: 4  
Expected Output:

Number is: 1 and cube of 1 is: 1

Number is: 2 and cube of 2 is: 8

Number is: 3 and cube of 3 is: 27

Number is: 4 and cube of 4 is: 64

1. Write a program in Java to make such a pattern like right angle triangle with a number which will repeat a number in a row. The pattern is as follows:

1

22

333

4444

**EXERCISE 4**

1. Write a Java Program to find sum of natural numbers using for loop.

Sample Output:

Sum of first 10 natural numbers is: 55

1. Write a Java Program to find factorial of a number using loops.

Sample Output:

Factorial of 5 is: 120

1. Java Program to print Fibonacci Series using for/while loops.

Sample Output:

Fibonacci Series of 7 numbers:0 1 1 2 3 5 8

1. Write a Java program to compute the sum of the first 100 prime numbers.

Sample Output:

Sum of the first 100 prime numbers: 24133

1. Write a Java program to check if a positive number is a palindrome or not.

Sample Output:  
Input a positive integer: 151   
Is 151 is a palindrome number?   
true

1. Write a Java program that accepts two integer values between 25 to 75 and return true if there is a common digit in both numbers.

Sample Output:

Input the first number: 35

Input the second number: 45

Result: true

1. Write a Java program that accepts three integers from the user and return true if the second number is greater than first number and third number is greater than second number. If "abc" is true second number does not need to be greater than first number.

Sample Output:

Input the first number: 5

Input the second number: 10

Input the third number: 15

The result is: true

1. Write a Java program to compare two numbers.

Input Data:

Input first integer: 25  
Input second integer: 39  
Expected Output:

25 != 39

25 < 39

25 <= 39

1. Write a Java program start with an integer n, divide n by 2 if n is even or multiply by 3 and add 1 if n is odd, repeat the process until n = 1.

**EXERCISE 5**

1. Write a Java program to sort a numeric array and a string array.
2. Write a Java program to test if an array contains a specific value.
3. Write a Java program to remove a specific element from an array.
4. Write a Java program to insert an element (specific position) into an array.
5. Write a Java program to reverse an array of integer values.
6. Write a Java program to get the larger value between first and last element of an array (length 3) of integers.  
   Sample Output:

Original Array: [20, 30, 40]

Larger value between first and last element: 40

1. Write a Java program to test that a given array of integers of length 2 contains a 4 or a 7.

Sample Output:

Original Array: [5, 7]

true

1. Write a Java program to swap the first and last elements of an array (length must be at least 1) and create a new array.   
   Sample Output:

Original Array: [20, 30, 40]

New array after swapping the first and last elements:

[40, 30, 20]

1. Write a Java program to multiply corresponding elements of two arrays of integers.

Sample Output:

Array1: [1, 3, -5, 4]

Array2: [1, 4, -5, -2]

Result: 1 12 25 -8

1. Write a Java program to merge two given sorted array of integers and create a new sorted array.

Sample Output:

Original Array: [20, 30, 40]

New array after swapping the first and last elements:

[40, 30, 20]

**EXERCISE 6**

1. Write a Java method to find the smallest number among three numbers.

Test Data:   
Input the first number: 25  
Input the Second number: 37  
Input the third number: 29   
Expected Output:

The smallest value is 25.0

1. Write a Java method to compute the average of three numbers.    
   Test Data:  
   Input the first number: 25   
   Input the second number: 45  
   Input the third number: 65  
   Expected Output:

The average value is 45.0

1. Write a Java method to count all vowels in a string.   
   Test Data:  
   Input the string: android   
   Expected Output:

Number of Vowels in the string: 3

1. Write a Java method to check whether a year (integer) entered by the user is a leap year or not.

Expected Output:

Input a year: 2017

false

1. Write a Java method to check whether a string is a valid password.    
   Password rules:   
   A password must have at least ten characters.  
   A password consists of only letters and digits.  
   A password must contain at least two digits.

Expected Output:

A password must have at least eight characters.

A password consists of only letters and digits.

A password must contain at least two digits

Input a password (You are agreeing to the above Terms and Conditions.): abcd1234

Password is valid: abcd1234

1. Write a Java method to count all words in a string.

Test Data:   
 Input the string: The quick brown fox jumps over the lazy dog.  
Expected Output:

Number of words in the string: 9