# Practice Questions

# Contents

## Language basic

| No. | Hands-on Assignment | Topics Covered |
|---|---|---|
| 1 | Write a Program that accepts two Strings as command line arguments and generate the output in a specific way as given below.<br>Example:<br>If the two command line arguments are Company and Chandigarh then the output generated should be Company Technologies Chandigarh.<br>If the command line arguments are ABC and Mumbai then the output generated should be ABC Technologies Mumbai<br>[Note: It is mandatory to pass two arguments in command line] | Command Line Argument |
| 2 | Write a Program to accept a String as a Command line argument and the program should print a Welcome message.<br>Example :<br>   C:\> java Sample John<br>   O/P Expected : Welcome John | Command Line Argument |
| 3 | Write a Program to accept two integers through the command line argument and print the sum of the two numbers<br>Example:<br>   C:\>java Sample 10 20<br>   O/P Expected : The sum of 10 and 20 is 30<br>Write a Program to accept two integers through the command line argument and print the sum of the two numbers<br>Example:<br>   C:\>java Sample 10 20<br>   O/P Expected : The sum of 10 and 20 is 30 | Command Line Argument |

## Flow Control

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| 1 | Write a program to check if a given number is Positive, Negative, or Zero. | |
| 2 | Write a program to check if a given number is odd or even. | If Statement |
| 3 | Write a program to check if the program has received command line arguments or not. If the program has not received the values then print "No Values", else print all the values in a single line separated by ,(comma).<br>Eg1) java Example<br>O/P: No values<br>Eg2) java Example Mumbai Bangalore<br>O/P: Mumbai,Bangalore<br>[Note: You can use length property of an array to check its length | If Statement |
| 4 | Initialize two character variables in a program and display the characters in alphabetical order.<br>Eg1) if first character is s and second is e<br>O/P: e,s<br>Eg2) if first character is a and second is e<br>O/P:a,e | If Statement |
| 5 | Intialize a character variable in a program and if the value is alphabet then print "Alphabet" if it's a number then print "Digit" and for other characters print "Special Character" | If Statement |
| 6 | Write a program to accept gender ("Male" or "Female") and age (1-120) from command line arguments and print the percentage of interest based on the given conditions.<br>Interest == 8.2%<br> Gender ==> Female<br> Age   ==>1 to 58<br><br>Interest == 7.6%<br> Gender ==> Female<br> Age   ==>59 -120<br><br>Interest == 9.2%<br> Gender ==> Male<br> Age   ==>1-60<br><br>Interest == 8.3%<br> Gender ==> Male<br> Age   ==>61-120 | If Statement |
| 7 | Write a program to convert from upper case to lower case and vice versa of an alphabet and print the old character and new character as shown in example (Ex: a->A, M->m). | If Statement |
| 8 | Write a program to print the color name, based on color code. If color code in not valid then print "Invalid Code". R->Red, B->Blue, G->Green, O->Orange, Y->Yellow, W->White. | Switch Statement |
| 9 | Write a program to print month in words, based on input month in numbers | Switch Statement |

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| | Example1:<br>   C:\>java Sample 12<br>   O/P Expected : December<br>Example2:<br>   C:\>java Sample<br>   O/P Expected : Please enter the month in numbers<br>Example3:<br>   C:\>java Sample 15<br>   O/P Expected : Invalid month | |
| 10 | Write a program to print numbers from 1 to 10 in a single row with one tab space. | For Loop |
| 11 | Write a program to print even numbers between 23 and 57, each number should be printed in a separate row. | For Loop |
| 12 | Write a program to check if a given number is prime or not | For Loop |
| 13 | Write a program to print prime numbers between 10 and 99. | For Loop |
| 14 | Write a Java program to find if the given number is prime or not.<br>Example1:<br>   C:\>java Sample<br>   O/P Expected : Please enter an integer number<br>Example2:<br>   C:\>java Sample 1<br>   O/P Expected : 1 is neither prime nor composite<br>Example3:<br>   C:\>java Sample 0<br>   O/P Expected : 0 is neither prime nor composite<br>Example4:<br>   C:\>java Sample 10<br>   O/P Expected : 10 is not a prime number<br>Example5:<br>   C:\>java Sample 7<br>   O/P Expected : 7 is a prime number | For Loop |
| 15 | Write a program to add all the values in a given number and print. Ex: 1234->10 | For Loop |
| 16 | Write a program to print * in Floyds format (using for and while loop)<br>*<br>* *<br>* *  *<br><br>Example1:<br>   C:\>java Sample<br>   O/P Expected : Please enter an integer number<br>Example2:<br>   C:\>java Sample 3<br>   O/P Expected :<br>      * | For Loop |

| | | |
|---|---|---|
| | ```
   * *
   * * *
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| 17 | Write a program to reverse a given number and print<br>Eg1)<br>I/P: 1234<br>O/P:4321<br>Eg2)<br>I/P:1004<br>O/P:4001 | While Loop |
| 18 | Write a Java program to find if the given number is palindrome or not<br>Example1:<br>   C:\>java Sample 110011<br>   O/P Expected : 110011 is a palindrome<br>Example2:<br>   C:\>java Sample 1234<br>   O/P Expected : 1234 is not a palindrome | While Loop |
| 19 | Write a program to print first 5 values which are divisible by 2, 3, and 5. | While Loop |
| 20 | Write a program that displays a menu with options 1. Add 2. Sub<br>Based on the options chosen, read 2 numbers and perform the relevant operation. After performing the operation, the program should ask the user if he wants to continue. If the user presses y or Y, then the program should continue displaying the menu else the program should terminate. | |

## Array

| No. | Hands-on Assignment | Topics Covered |
|-----|---------------------|----------------|
| 1 | Write a program to initialize an integer array and print the sum and average of the array. | One dimensional Array |
| 2 | Write a program to initialize an integer array and find the maximum and minimum value of an array. | One dimensional Array |
| 3 | Write a program to initialize an integer array with values and check if a given number is present in the array or not. If the number is not found, it will print -1 else it will print the index value of the given number in the array<br>Ex1) Array elements are {1,4,34,56,7} and the search element is 90<br>O/P: -1<br>Ex2)Array elements are {1,4,34,56,7} and the search element is 56<br>O/P: 4 | One dimensional Array |
| 4 | Initialize an integer array with ascii values and print the corresponding character values in a single row. | One dimensional Array |
| 5 | Write a program to find the largest 2 numbers and the smallest 2 numbers in the given array | One dimensional Array |
| 6 | Write a program to initialize an array and print them in a sorted fashion | One dimensional Array |
| 7 | Write a program to remove the duplicate elements in an array and print<br>Eg) Array Elements--12,34,12,45,67,89<br>O/P: 12,34,45,67,89 | One dimensional Array |
| 8 | Write a program to print the element of an array that has occurred the highest number of times<br>Eg) Array -> 10,20,10,30,40,100,99<br>O/P:10 | One dimensional Array |
| 9 | Write a program to print the sum of the elements of the array with the given below condition. If the array has 6 and 7 in succeeding orders, ignore 6 and 7 and the numbers between them for the calculation of sum.<br>Eg1) Array Elements - 10,3,6,1,2,7,9<br>O/P: 22<br>[i.e 10+3+9]<br>Eg2) Array Elements - 7,1,2,3,6<br>O/P:19<br>Eg3) Array Elements - 1,6,4,7,9<br>O/P:10 | One dimensional Array |
| 10 | Write a program to reverse the elements of a given 2*2 array. Four integer numbers needs to be passed as Command Line arguments. | Two Dimensional Array |

Example1:
    C:\>java Sample 1 2 3
    O/P Expected : Please enter 4 integer numbers
Example2:
    C:\>java Sample 1 2 3 4
    O/P Expected :

 The given array is :
 1 2
 3 4
 The reverse of the array is :
 4 3
 2 1

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |

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 Write a program to find greatest number in a 3*3 array. The program is supposed to receive 9 integer numbers as command line arguments.

Example1:
    C:\>java Sample 1 2 3
    O/P Expected : Please enter 9 integer numbers
Example2:
    C:\>java Sample 1 23 45 55 121 222 56 77 89
    O/P Expected :
The given array is :
1 23 45
55 121 222
56 77 89
The biggest number in the given array is 222

## Java basic program for practice

1. **Hello World Program**
   Write a Java program to print "Hello, World!" to the console.
2. **Sum of Two Numbers**
   Write a Java program that takes two integers as input and outputs their sum.
3. **Factorial of a Number**
   Write a Java program to calculate the factorial of a given number.
4. **Fibonacci Series**
   Write a Java program to print the Fibonacci series up to a given number of terms.
5. **Palindrome Check**
   Write a Java program to check if a given string is a palindrome.
6. **Prime Number Check**
   Write a Java program to check if a given number is a prime number.
7. **Reverse a Number**
   Write a Java program to reverse the digits of a given number.
8. **Leap Year Check**
   Write a Java program to check if a given year is a leap year.
9. **Armstrong Number Check**
   Write a Java program to check if a given number is an Armstrong number.
10. **Simple Calculator**
    Write a Java program to perform basic arithmetic operations (addition, subtraction, multiplication, division) based on user input.