

# 25 HARD

#### DAY 1

Introduction To Java and Installation

Link -: Introduction to Java - Architecture & Installation

## Day 2

**Introduction To Programming** 

Link -: <u>Introduction to Programming - Types of Languages, Memory Management</u>

# Day 3

Flow of Program - Flowcharts and Pseudocodes

Link -: Flow of Program - Flowcharts & Pseudocode

# Assignment -:

- 1. Input a year and find whether it is a leap year or not.
- 2. Take two numbers and print the sum of both.
- 3. Take a number as input and print the multiplication table for it.





Input / Output, Debugging

Link -: <u>First Java Program - Input/Output, Debugging and Datatypes</u>
Assignment -:

Write Java Programs for the following

- 1. Write a program to print whether a number is even or odd, also take input from the user.
- 2. Take name as input and print a greeting message for that particular name.
- 3. Take in two numbers and an operator (+, -, \*, /) and calculate the value. (Use if conditions)
- 4. Take 2 numbers as input and print the largest number.
- 5. To find out whether the given String is Palindrome or not.

## Day 5

**Conditionals + Loops** 

Link -: Conditionals and Loops + Calculator Program

# **Assignment -:**

- Day 6 -:
  - a. Area Of Circle Java Program
  - b. Area Of Triangle
  - c. Area Of Rectangle Program
  - d. Area Of Isosceles Triangle
  - e. Volume Of Cylinder
  - f. Volume Of Pyramid





- Day 7 -:
  - a. Addition Of Two Numbers
  - b. Fibonacci Series In Java Programs
  - c. Input a number and print all the factors of that number (use loops).
  - d. Factorial Program In Java
  - e. Calculate Average Of N Numbers
- Day 8 -:
  - a. Power In Java
  - b. HCF Of Two Numbers Program
  - c.LCM Of Two Numbers
  - d.Check Leap Year Or Not
  - e.Sum Of A Digits Of Number

**Switch Statements + Nested Case** 

Link -: Switch Statements + Nested Case in Java

Assignment -:

1. Design a Calculator using switch statements

# **Day 10**

**Pattern Problems** 

Link -: Solve Any Pattern Question With This Trick!





# Assignment -:

# Print these patterns using loops:

# • Day 11

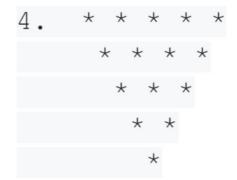
6.	*
	**
	***
	****
	****

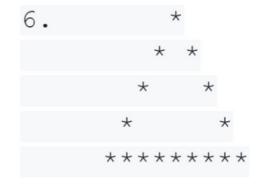
7.	****
	***
	***
	* *
	*

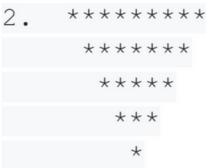


# • Day 12

1.	*
	* * *
	****
	*****
	*****



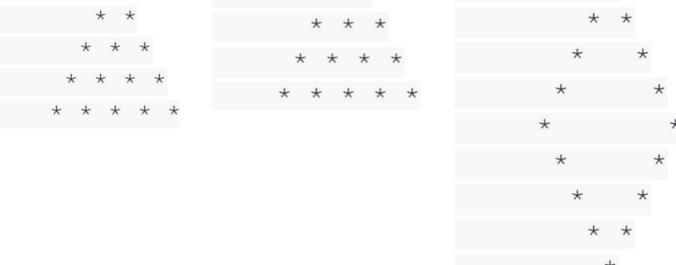






5.









# • Day 13

01.					1				
				1		1			
			1		2		1		
		1		3		3		1	
	1		4		6		4		1

02.	1
	212
	32123
	4321234
	32123
	212
	1

03.	*****	***
	****	***
	***	* * *
	**	**
	*	*
	*	*
	**	* *
	***	* * *
	***	***
	*****	***

*	*
** *	*
***	*
****	*
*****	*
****	*
***	*
**	*
*	*
	**

05.	***	*
	*	*
	*	*
	*	*
	***	*



# • Day 14

01.	1				
	2	3			
	4	5	6		
	7	8	9	10	
	11	12	13	14	15

02.	1				
	0	1			
	1	0	1		
	0	1	0	1	
	1	0	1	0	1

03.					1				
				2	1	2			
			3	2	1	2	3		
		4	3	2	1	2	3	4	
	5	4	3	2	1	2	3	4	5

04.	4	4	4	4	4	4	4
	4	3	3	3	3	3	4
	4	3	2	2	2	3	4
	4	3	2	1	2	3	4
	4	3	2	2	2	3	4
	4	3	3	3	3	3	4
	4	4	4	4	4	4	4

05.	E				
	D	Ε			
	С	D	Ε		
	В	С	D	Ε	
	Α	В	С	D	Ε

06.	1	1	1	1	1	1
	2	2	2	2	2	
	3	3	3	3		
	4	4	4			
	5	5				
	6					

07.	a				
	В	С			
	D	е	F		
	g	Н	i	J	
	k	L	m	N	0



- Functions / Methods In Java
- Link -: Functions / Methods in Java
- Assignment -:
  - Oay 16 -:
    - i. Define two methods to print the maximum and the minimum number respectively among three numbers entered by the user.
    - ii. Define a program to find out whether a given number is even or odd.
    - iii. A person is eligible to vote if his/her age is greater than or equal to 18. Define a method to find out if he/she is eligible to vote.
    - iv.Write a program to print the sum of two numbers entered by user by defining your own method.

## Oay 17 -:

- i. Define a method that returns the product of two numbers entered by user.
- ii. Write a program to print the circumference and area of a circle of radius entered by user by defining your own method.
- iii. Define a method to find out if a number is prime or not.
- iv. Write a function to find if a number is a palindrome or not. Take number as parameter.





## o Day 18 -:

i. Write a program that will ask the user to enter his/her marks (out of 100). Define a method that will display grades according to the marks entered as below:

**Marks Grade** 

91-100 AA

81-90 AB

71-80 BB

61-70 BC

51-60 CD

41-50 DD

<=40 Fail

ii. Write a program to print the factorial of a number by defining a method named 'Factorial'. Factorial of any number n is represented by n! and is equal to 1 \* 2 \* 3 \* .... \* (n-1) \*n. E.g.-

Also.

1! = 1

0! = 1

iii.Write a function that returns all prime numbers between two iv.given numbers.

Write a function that returns the sum of first n natural numbers





Introduction To Arrays and ArrayList in Java Link -: Introduction to Arrays and ArrayList in Java Assignment -:

## Day 20 -:

- i. Build Array from Permutation
- ii. Concatenation of Array
- iii. Running Sum of 1d Array
- iv. Shuffle the Array
- v. <u>Transpose Matrix</u>
- vi. Two Sum
- vii. Palindrome Number

## Day 21 -:

- i. Add to Array-Form of Integer
- ii. Maximum Population Year
- iii. Determine Whether Matrix Can Be Obtained By Rotation
- iv. Maximum Subarray
- v.<u>Reshape the Matrix</u>

## Day 22 -:

- 1. Flipping an Image
- 2. Cells with Odd Values in a Matrix
- 3. Matrix Diagonal Sum
- 4. Find Numbers with Even Number of Digits





## Day 23 -:

- 1. Spiral Matrix
- 2. Spiral Matrix II
- 3. Spiral Matrix III
- 4. Set Matrix Zeroes

# Day 24 -:

- 1. Product of Array Except Self
- 2. Find First and Last Position of Element in Sorted Array
- 3. Jump Game

## Day 25 -:

- 1. Rotate Array
- 2. Sort Colors
- 3. House Robber

