



Newton School
Coding Club
Bhagwan Parshuram Institute
of Technology

25 HARD

DAY 1

Introduction To Java and Installation

Link -: [Introduction to Java - Architecture & Installation](#)

Day 2

Introduction To Programming

Link -: [Introduction to Programming - Types of Languages, Memory Management](#)

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.

FOLLOW FOR MORE





Day 4

Input / Output , Debugging

Link -: [First Java Program - Input/Output, Debugging and Datatypes](#)

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

Day 9

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**

1. * * * * *

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4. 1

 1 2

 1 2 3

 1 2 3 4

 1 2 3 4 5

6. *

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2. *

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3. * * * * *

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5. *

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7. * * * * *

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• Day 12

1. *

4. * * * * *

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6. *

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2. *****

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5. * * * * *

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7. *****

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3. *

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8. *

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• 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. *****
 **** ****
 *** ***
 ** **
 * *
 * *
 ** **
 *** ***
 **** ****

04. * *
 ** **
 *** ***
 **** *****

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

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 E
       C D E
      B C D E
     A B C D E
```

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

```
07.      a
        B c
       D e F
      g H i J
     k L m N o
```





Day 15

- Functions / Methods In Java
- Link -: [Functions / Methods in Java](#)
- Assignment –:
 - **Day 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.
 - **Day 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.





○ **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 $1 * 2 * 3 * \dots * (n-1) * n$. E.g.-

$$4! = 1 * 2 * 3 * 4 = 24$$

$$3! = 3 * 2 * 1 = 6$$

$$2! = 2 * 1 = 2$$

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





Day 19

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. [Transpose Matrix](#)
- 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. [Reshape the Matrix](#)

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

