Basics of Java

This document details the requirement specifications for the above-named project. Reach out to your SME / Trainer for any query.

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If-else and Switch Statements in Java

1. Write a program that takes a number from the user between 1 to 12 and displays the name of the month.

   Input:
   3
   Output:
   March

   Input:
   -2
   Output:
   Invalid Input

   Input:
   14
   Output:
   Invalid Input

2. Write a program to display calculated result of two numbers based on the mathematical operator entered.

   Input:
   8 3 +
   Output:
   11

3. Write a Program to check the grade based on marks obtained by students.
   For Example:
   Percentage >= 60% : Grade A.
   Percentage >= 45% : Grade B.
   Percentage >= 35% : Grade C.
   Percentage < 35% : Fail.

   Input:
   77
   Output:
   A Grade

4. Write a program to add two complex numbers.

   Input:
   4 +i5
   10 +i5
   Output:
   14 +i10

5. Write a program to check if a given integer is Odd or Even.
   Input :
   13
   Output:
   ODD

   Input :
   24
   Output:
   EVEN

6. Write a program to find the largest of three numbers.
   Input:
   7 20 56
   Output:
   56

7. Write a program to find LCM of two numbers.
   Input:
   15 25
   Output
   LCM is 75

8. Write a program to find GCD or HCF of two numbers.
   Input:
   10 20
   Output
   HCF is 10

9. Write a program to find all the prime numbers from 1 to N.
   Input:
   11
   Output:
   2 3 5 7 11

10. Write a program to find whether a given year is a Leap Year or not.
    Input:
    2012
    Output:
    Leap Year

11. Write a program to check whether a character is Vowel or Consonant.
    Input :
    r
    Output :
    Consonant

    Input :
    e
    Output :
    Vowel

12. Write a program to calculate simple interest.

13. Write a program to calculate compound interest.

14. Write a program to find the perimeter of a Rectangle.
    Input :
    10 (length)
    20 (breadth)
    Output :
    60

Iterating with Loops

15. Write a program that prompts the user to input an integer and then outputs the number with the digits reversed.

    Input:
    12345
    Output:
    54321

16. Write a program to accept two numbers and find the power of each (Do not use Java built-in method)

    Input:
    4 2
    Output
    16

17. Write a program to check Armstrong number between two integers.
    Input:
    100 200
    Output:
    153

18. Write a program to check if a number is Neon Number or Not.
    (Note: A neon number is a number where the sum of digits of the square of the number is equal to the number)
    Input :
    9
    Output :
    9 is Neon number
    Explanation : square of 9=9*9=81;
    sum of digit of square : 8+1=9(which is equal to given number)

19. Write a program to find the factorial of a given number.
    Input :
    5
    Output :
    120

20. Write a program to find the sum of Fibonacci Series numbers of first N even indexes.
    Input:
    4
    Output:
    33
    Explanation : N = 4, So here the fibonacci series will be produced from 0th term till 8th term: 0, 1, 1, 2, 3, 5, 8, 13, 21
    Sum of numbers at even indexes = 0 + 1 + 3 + 8 + 21 = 33.

21. Write a program to print right triangle star pattern.
    Input :
    5
    Output:
    ```
    *
    * *
    * * *
    * * * *
    * * * * *
    ```

22. Write a program to print reverse pyramid star pattern.
    Input:
    7
    Output:
    ```
    ************
     **********
      ********
       ******
        *****
         ***
          *
    ```

23. Write a program to print upper star triangle pattern.
    Input:
    9
    Output
    ```
             *
            **
           ***
          ****
         *****
        ******
       *******
      ********
     *********
    **********
    ```

24. Write a program to print diamond shape star pattern.

Input:
7
Output:

```
      *
     ***
    *****
   *******
  *********
 ***********
*************
 ***********
  *********
   *******
    *****
     ***
      *
```

25. Write a program to print square star pattern.
Example:

```
**********************
*                    *
*                    *
*                    *
*                    *
*                    *
*                    *
**********************
```