GNANAMANI COLLEGE OF TECHNOLOGY

(Department of Computer Science and Engineering)
(Skill Development Training)

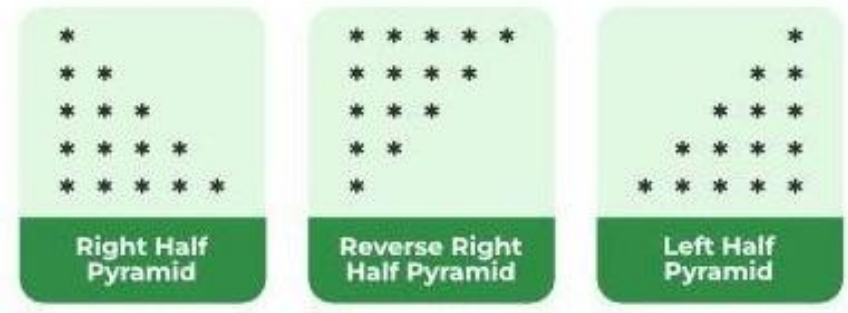
Language: Java Programming
Time Period: 30 days

By :- Dr Uma Maheshwari (HOD/CSE)

1. Create a program to input name of the person and respond with ”Welcome NAME to Skill Development Training”
2. Create a program to add two numbers.
3. Create a program to swap two numbers.
4. Create a program that takes two numbers and shows result of all arithmetic operators (+,-,*,/,%).
5. Create a program to calculate product of two floating points numbers.
6. Create a program to calculate Perimeter of a rectangle. Perimeter of rectangle ABCD = A+B+C+D
7. Create a program to calculate the Area of a Triangle. Area of triangle = ½*B*H
8. Create a program to calculate simple interest.
   (Simple Interest = (P x T x R)/100)
9. Create a program to calculate Compound interest.
   (Compound Interest = P(1 + R/100)t)
10. Create a program to convert Fahrenheit to Celsius.
11. Create a program that determines if a number is positive, negative, or zero.
12. Create a program that determines if a number is odd or even.
13. Create a program that determines the greatest of the three numbers.
14. Create a program that determines if a given year is a leap year (considering conditions like divisible by 4 but not 100, unless also divisible by 400).
15. Create a program that calculates grades based on marks
    A -> above 90%
    B -> above 75%
    C -> above 60%
    D -> above 30%
    F -> below 30%
16. Create a program that categorize a person into different age groups
    Child -> below 13
    Teen -> below 20
    Adult -> below 60
    Senior-> above 60
17. Create a program that shows bitwise AND of two numbers.
18. Create a program that shows bitwise OR of two numbers.
19. Create a program that shows bitwise XOR of two numbers.
20. Create a program that shows bitwise compliment of a number.
21. Create a program that shows use of left shift operator.
22. Create a program that shows use of right shift operator.
23. Write a program to check if a given number is even or odd using bitwise operators.
24. Develop a program that prints the multiplication table for a given number.
25. Create a program to sum all odd numbers from 1 to a specified number N.
26. Write a function that calculates the factorial of a given number.
27. Create a program that computes the sum of the digits of an integer.

28. Create a program to find the Least Common Multiple (LCM) of two numbers.
29. Create a program to find the Greatest Common Divisor (GCD) of two integers.
30. Create a program to check whether a given number is prime.
31. Create a program to reverse the digits of a number.
32. Create a program to print the Fibonacci series up to a certain number.
33. Create a program to check if a number is an Armstrong number.
34. Create a program to verify if a number is a palindrome.

35. Create a program that print patterns:



36. Create a program to find the sum and average of all elements in an array.
37. Create a program to find number of occurrences of an element in an array.
38. Create a program to find the maximum and minimum element in an array.
39. Create a program to find the minimum of two numbers.
40. Create a program to find if the given number is even or odd.
41. Create a program to calculate the absolute value of a given integer.
42. Create a program to print the month of the year based on a number (1-12) input by the user.
43. Create a program to create a simple calculator that uses a switch statement to perform basic arithmetic operations like addition, subtraction, multiplication, and division.
44. Create a program using do-while to implement a number guessing game.
45. Create a program using for loop multiplication table for a number.
46. Create a program using for to display if a number is prime or not.
47. Create a program using for-each to find the maximum value in an integer array.
48. Create a program using for-each to the occurrences of a specific element in an array.
49. Create a program using break to read inputs from the user in a loop and break the loop if a specific keyword (like "exit") is entered.
50. Create a program using continue to sum all positive numbers entered by the user; skip any negative numbers.
51. Create a program using continue to print only even numbers using continue for odd numbers.
52. Create a program using recursion to display the Fibonacci series up to a certain number.

53. Create a class Car with attributes brand and model. Create an object of this class and print the details.
54. Create a class Student with attributes name and age. Use a constructor to initialize these attributes and print the student details.
55. Create a class Animal with a method makeSound(). Create a subclass Dog that overrides makeSound() and prints "Bark!". (inheritance)
56. Create a class MathOperations with two add() methods: (method overloading)
    One adds two integers.
    The other adds three integers.
57. Create an interface Shape with a method area(). Implement this interface in Circle and Rectangle classes.

58. Create a Book class for a library system.
    • Instance variables: title, author, isbn.
    • Static variable: totalBooks, a counter for the total number of book instances.
    • Instance methods: borrowBook(), returnBook().
    • Static method: getTotalBooks(), to get the total number of books in the library.

59. Create an **abstract class** Animal with an **abstract method** makeSound().
    Create two subclasses: Cat and Dog.
    Both subclasses should **implement the makeSound() method** to print "Meow!" for Cat and "Bark!" for Dog.
    In the main method, create objects of Cat and Dog and call the makeSound() method for both.

60. Design a Course class.
    • Instance variables: courseName, enrolledStudents.
    • Static variable: maxCapacity, the maximum number of students for any course.
    • Instance methods: enrollStudent(String studentName), unenrollStudent(String studentName).
    • Static method: setMaxCap

Note: Students are instructed to solve daily 2 questions and save in their local device and each verify your code and mark your attendance with the respective team leader.