Basic Java

1. Do following conversions and observe the results : (Casting etc)
   1. int -> byte (value > 1000)
   2. double -> short ( Ex: double = 123456.7891011 )
   3. String -> byte
   4. byte -> int
   5. int -> double
2. WAP to take input in seconds and convert it to HH:MM:SS format
3. Calculate Simple Interest

Conditionals

1. Leap year or not.
2. Triangle is valid or not if 3 Side are taken as input
3. Triangle is valid or not if 3 Angles are taken as input
4. Input char to check if its Digit , Alphabet or Special Character
5. Calculate Roots of Quadratic Equation
6. Input basic salary of an employee and calculate its gross salary according to following :
   * Basic Salary upto 10000 , then HRA = 20% , DA = 80%
   * Basic Salary upto 20000 , then HRA = 25% , DA = 90%
   * Basic Salary above 20000 , then HRA = 30% , DA = 95%
   * Gross = Basic + HRA + DA
7. WAP to input electricity unit charges and calculate total electricity bill according to the given condition :

* For first 50 units Rs. 0.50/unit
* Next 100 units Rs. 0.75/unit
* Next 100 units Rs. 1.20/unit
* Above 250 , Rs 1.5/unit
* At end Additional charge of 20% is added to total charges

1. Print number of days of month if Month Number is input using Switch ….Case (Do not use 12 case , but use only 3 case (combine cases to print together ))

Loops

1. Palindrome or not
2. Angstrom or not
3. Perfect or not
4. Print N prime numbers with their Sum
5. GCD of two numbers using while loop
6. LCM of two numbers using while loop
7. Count number of digits of a number using While Loop
8. 1 + 2 + 3 + …..+ N
9. 1 + 4 + 9 + …..+ n^2
10. 1+(1+2) + (1+2+3) + (1+2+3+4) …..+ (1+2+3+4+5+……+N)
11. 1 + 2(1+4) + 3(1+4+9) + 4(1+4+9+16) +…..N(1+4+9+16+…..+N^2)

Patterns

1 1 1 1 1

1 2 2 3 2 5 21 32

1 2 3 4 5 6 3 6 8 321 321

1 2 3 4 7 8 9 10 4 7 9 10 4321 4321

1 2 3 4 5 11 12 13 14 15

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1 1 \* \* \* \* \* \* \* \* \* \*

2 2 2 3 \* \* \* \*

3 3 3 4 5 6 \* \* \* \*

4 4 4 4 7 8 9 10 \* \* \* \*

5 5 5 5 5 \* \* \* \* \* \*

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Arrays

1. Find Max from an Array
2. Reverse an Array without using any other array
3. Sort and Array
4. Find Second Maximum number from and Array ( 2 Approach – without sorting or using sorting an array)
5. Print pair of Indexes of an array whose Element’s sum is equal to a given number.

(Example x = 6, a[0] + a[2] == 6 , then print (0,2) ])

1. Check if two Arrays are equal or not (Use Boolean data type for flag )
2. Find Smallest and Second Smallest from an array
3. Addition of two NxN Matrix
4. Find max from each row of a NxN matrix
5. Swap each element of an array corresponding indexed element of another array ,without using extra array .and then print swapped arrays