Lab Task – 3

Array (Solve Any 2)

1. You have an Array of N numbers. Now write a code to **Sort** the elements in Ascending Order.

Input Samples	Output Samples
How many Numbers you want to insert? 5 Enter 5 array elements 10 220 303 140 50	10 50 140 220 303

2. You have an Array of N numbers. Now write a code to **Search** an element from an array **input** from user. **[Linear Search]**

Input Samples	Output Samples
Total Case = 2 How many Numbers you want to insert? 5 Enter 5 array elements 10 220 303 140 50 Case:1 Enter Data You want to search 220 Case:2 Enter Data You want to search 120	220 found at Index 1 120 not found in the Array

3. Suppose you have stored the CGPA of N number of students in an array. Now find the **smallest** and **largest** CGPA of the array.

Input Samples	Output Samples
How many Studetns' CGPA you want to insert? 5 Enter 5 array elements 3.8 3.9 3.3 3.75 2.8	Largest CGPA = 3.9 Smallest CGPA = 2.9

4. Suppose you have two Arrays. Now you need to **merge** those arrays in **one Single Array**.

Input Samples	Output Samples
N1 = 5 Enter 5 array elements 10 220 303 140 50 N2 = 3 Enter 5 array elements 400 500 600	10 220 303 140 50 400 500 600

Solving the Problems using Math class (Solve Any 3)

1. Find **absolute**, **floor**, **ceil**, **round** and **square root** values of a number.
2. Find the **maximum** and **minimum** values from **three numbers** using MATH Class.
3. Generate **5 random** numbers between **0 and 200**.
4. Calculate **2^0** to **2^n** Using Math Class. 'n' will be input from user.
5. Calculate the **area** of a **circle** using Math.pow() and Math.PI methods

Commonly Used Methods of the Math class

Basic Math Functions

- Math.abs(x)
- Math.ceil(x)
- Math.floor(x)
- Math.min(x,y)
- Math.max(x,y)
- Math.round(x)
- Math.random() - To get a random value between 0 and e.g. 100, multiply the value returned by `Math.random()` with the maximum number (e.g. 100).

Exponential and Logarithmic Math Functions

- Math.pow(x,y)
- Math.sqrt(x)
- Math.exp(x)
- Math.log(x)
- Math.log10(x)

Trigonometric Math Functions

- Math.PI
- Math.E

Note: For more information please visit the link.
http://tutorials.jenkov.com/java/math-operators-and-math-class.html