Lab exercises – 4

Date : 04.09.20

Level – I (10 marks)

1. Write a method to find the **twin primes** taking the integer range as the parameter. The integer range got from the user. Twin primes are the integers that differ by 2.
2. Write a method **void shift(int [])** that shifts the array elements from left to right.
3. Write a method **int [] removeduplicates(int [])** that removes the duplicates in the array and returns new array.
4. Explore the functions of **Arrays** class with simple program : arraycopy, sort, equals,binarysearch

Level – 2 (10 marks)

5. Write a method **Partition(int [])** that sorts the array such that the elements lesser or equal to the pivot are on the left and elements greater than the pivot are on the right. The pivot is always the first element in the array.
   For eg: [4, 5, 1, 2, 34, 23, 6]
   After partition : [1, 2, 4, 5, 34, 23, 6]

6. Suppose the weekly hours for all employees are stored in a two-dimensional array. Each row records an employee's seven-day work hours with seven columns. For example, the following array stores the work hours for eight employees. Write a program that displays employees and their total hours in decreasing order of the total hours.

	Su	M	T	W	Th	F	Sa
Employee 0	2	4	3	4	5	8	8
Employee 1	7	3	4	3	3	4	4
Employee 2	3	3	4	3	3	2	2
Employee 3	9	3	4	7	3	4	1
Employee 4	3	5	4	3	6	3	8
Employee 5	3	4	4	6	3	4	4
Employee 6	3	7	4	8	3	8	4
Employee 7	6	3	5	9	2	7	9

Level -3 (5 marks)

7. Create an ArrayList of String that will contain the student's name enrolled for my Java programming class. Use the built-in methods to do the following:
   i. add - to add a student name to list
   ii. contains – to check whether the student name exists in my list
   iii. remove – to delete a student name from my list
   iv. indexof – to return index of the name searched for
   v. get – print the list of student's name in reverse order using get
   vi. size – to print the number of students enrolled in my class

Note: enhanced for can be used