Usman Institute of Technology

Department of Computer Science – Fall 2018

CS-211 Data Structures and Algorithms
Lab Manual

OBJECTIVE:

1. *Understand and implement Insertion Sort.*
2. *Application of Selection Sort on list of elements in an array.*
3. *Understand and Implement Bubble Sort.*

Name : _____

Roll No. : _____

Semester : _____ Section: _____

Date : _____

Remarks : _____

Signature : _____

Lab 03: Implementation of Sorting Algorithm

ACTIVITY #1:

1. Write a function to generate 'n' random numbers in an array.

int[] GenerateRandom(int n)

2. Write a function to sort the array generated in task 1 using **Insertion sort** algorithm and returns sorted array.

int[] InsertionSrot(int[] array)

EXERCISES:

3. Write a function to sort the array generated in task 1 using **Bubble sort** algorithm and returns sorted array.

int[] BubbleSort(int[] array)

4. Write a function to sort the array generated in task 1 using **Selection sort** algorithm and returns sorted array.

int[] SelectionSort(int[] array)

BONUS TASK:

Write a function that compare sorting time for Bubble Sort, Insertion Sort and Selection sort functions which you have developed in the above tasks.

Void SortComparision(int n)

The output for n = 100 should be look like:

Time comparison for 100 numbers:
Bubble Sort: x seconds
Insertion Sort: y seconds
Selection Sort: z seconds

HOME TASK:

Implement all algorithms in Object Oriented structure using JAVA or C++ programming language