**Principles of Programming Languages (Lab 2)**

**Problem:**

Create an array of 10000 random numbers in C, sort the array and display the running time for a linear search, binary search and number of repetitions for a number.

**Input:**

The program is a menu driven program requiring the user to enter the option according to user's choice.

**Output:**

The output of the program will be the running time of the selected option.

**Before sorting the array,**

For x=5,

Linear Search : 0.000024 seconds

Binary Search : 0.000020 seconds

Repetitions : 0.000079 seconds

For x=60,

Linear Search : 0.000062 seconds

Binary Search : 0.000018 seconds

Repetitions : 0.000089 seconds

For x=100,

Linear Search : 0.000083 seconds

Binary Search : 0.000022 seconds

Repetitions : 0.000089 seconds

**After sorting the array,**

For x=5,

Linear Search : 0.000025 seconds

Binary Search : 0.000003 seconds

Repetitions : 0.000087 seconds

For x=60,

Linear Search : 0.000022 seconds

Binary Search : 0.000021 seconds

Repetitions : 0.000081 seconds

For x=100,

Linear Search : 0.000022 seconds

Binary Search : 0.000002 seconds

Repetitions : 0.000080 seconds