Algorithms & Problem Solving Lab

Synopsis

Team Members :-

Akshara Nigam : 17104018
Ayush Nagar   : 17104012
Kapil Israni   : 17104011
Manav Verma   : 17104002

The main idea behind the project is to analyze the basic searching and sorting methods and graphically plot them.

Asymptotic Analysis is done of the code snippet which can be in either C++ or Python (asked during the time of execution) and accordingly we compare the time complexity for different values of 'n' (size of the array) . Each value is subsequently plotted and compared for Big O and Theta. Some common values of time complexities will be stored and then be compared with the time taken by the program.

Data Structure:-   Sets and Vector

Tech Stack :-   Python , PyGame & File Handling

Algorithms to be Analysed:-

      (I)Searching :

            Linear Search

            Binary Search

            Interpolation Search

            Median Search

      (II)Sorting :

            Bubble Sort

            Quick Sort

            Merge Sort

            Selection Sort

            Heap Sort

            Insertion Sort

            Radix Sort

            Count Sort

Complexity to be analysed :-

     n

     $\log(n)$

     $n\log(n)$

     n^2

     n^3

     $\log(\log(n))$