**BANGALORE INSTITUTE OF TECHNOLOGY**

**K R ROAD, V V PURAM, BANGALORE-04**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**Computer Graphic Visualization Laboratory Mini Project(18CSL67)**

**SYNOPSIS**

**SIMULATION OF SORTING ALGORITHMS**

|  |  |  |  |
| --- | --- | --- | --- |
| **1BI18CS069** | **KUMAR DIVYAM** |  | **B1** |
| **1BI18CS118** | **RAJ KAMAL** |  | **B4** |

**DESCRIPTION:**

The aim of this project is to visualize the working of sorting algorithms and approximate their efficiency in terms of time. There are multiple sorting algorithms like Bubble sort, Heap sort, Merge sort, Insertion sort, Quick sort, Selection sort etc. and their real-life applications largely depend on the time elapsed. The project enables the user to picturize the steps involved at different stages of sorting process.

* **Features to Be Implemented**

1. **Transformation Functions Used:**

Use to generate random numbers and represent them as height of histograms and their movement from unsorted to sorted order. Also, a time counter to represented the time elapsed in sorting.

1. **Lighting And Shading Concepts Used:**

Varying the hue (gradient) of histograms depicting the sample numbers according to its value.

1. **Menu Options:**

Defining the instance size of numbers to be sorted and selection of algorithm to use for sorting.

1. **Input Interaction (Keyboard/Mouse):**

Input taken from keyboard/mouse to specify the sample size of random numbers to be generated and selecting the algorithm to implement for sorting.

1. **Preferably 3D/2D Projects:**

2D implementation for clear visualization and better understanding of stages of sorting.

**Lab In Charges: CGV Theory In Charge**

1. **Prof. N Thanuja Prof. Bhanushree K J**

**(Assistant Professor) (Assistant Professor)**

1. **Prof. Mamatha V**

**(Assistant Professor)**

1. **Dr. B N Shankar Gowda**

**(Assistant Professor)**