README FILE

1.you just have to run the program and you’ll be asked to choose one of the 7 options for example press 1 for sequential search and so on till -1 for exit.

Then user enters the size of array or how many integers on user want some search or sorting ,then output will be displayed and you’ll be asked again until you press -1 for exit.

2.pictures of output

To check performance of function I use <chrono> library.

To search for a random number in array and fill the array with random numbers I use “rand”.

If number found in array status saucerful else unsuccessful

For comparisons I made a variable “comparison” which will increment when there will be any comparison of array index value.

For assignments I made a variable “assignment” which will increment when there will be any “=” operation performed with array index values

For operations I simply add comparisons and assignments.

For large number of operations, I made the integer and array data types “long long int”.

Pointer type arrays are used.

3.ansswer in ms

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| amount of data | insertion\_sort | quick\_sort | merge\_sort | bubble\_sort |
| 1000 | 3 | 0 | 0 | 13 |
| 2000 | 12 | 0 | 1 | 37 |
| 3000 | 24 | 1 | 1 | 64 |
| 4000 | 40 | 1 | 3 | 130 |
| 5000 | 62 | 2 | 4 | 187 |
| 6000 | 79 | 2 | 5 | 263 |

4.I aim for 5 points because I have done all 5 parts and fill up all the requirements.

5.Contact information:

6.I done the project in 6 hours from 10-12 December giving almost 2 hours in a day.

First day I made some prototype and thought how this project can be done in an easy way and did some research about chrono library, performance of function etc.

On second day I started implementation and done 4 parts of the project.

On third day I did last part and wrote the README file.

7.i made 10 functions total to handle the project and one main in which I called all these functions and create all integers and arrays of long long int and int datatype .

Asked the menu to user in an infinite while loop until user press -1 for exit.

Asked the size to user and filled the array in for loop with random numbers

Using chrono library I use 2 built in functions of finding time before and after the sorting/searching function and store them in 2 variables of type “auto” and then did minus operation on both variables to find duration of function.

Then I simple print if status is successful or not and comparison, assignments, operation and time values on console screen.

Note:You can run this project with “g++ part1.cpp -o part1.out”

Then ./part1.out