Assignment 2

Due Date: 24-March-2020 (11:55 pm) (Tuesday)

Assignment Submission
All sections will submit the assignment on Google classroom if your section has otherwise submit this assignment on the SLATE before the deadline.

Anyone submits plagiarized assignment will get zero marks

This is a group Assignment. Cross Section group strictly not allowed.
Total Member allowed = 3
Submit zip file contains this report and your project.
Zip file must be named as
Rollnumber1_Rollnumber2_Rollnumber3_Section_Assignment2
For example: 18f0123_18f0345_18f567_D_Assignment2

Member: 1 Algorithms performed (Green):
Roll No: _____
Section: _____
Name: _____

Member: 2 Algorithms performed (Red):

Roll No: _____
Section: _____
Name: _____

Member: 3 Algorithms performed (Blue):

Roll No: _____
Section: _____
Name: _____

Question 1. Design and implement a menu-based software to sort the roll numbers. Program will prompt the user to select unsorted text file containing roll numbers, then program will prompt the user to select the sorting technique to apply, after that new file containing sorted roll numbers must be displayed and saved. You are only allowed to use only C++ language. Bonus marks for GUI implementation.
Following listed algorithms must be implemented.

1. **Insertion sort**
2. **Bubble sort**
3. **Selection sort**
4. **Merge sort**
5. **Quick sort**
6. **Heap sort**
7. **Count sort**
8. **Radix sort**
9. **Bucket sort**

Menu design:

Welcome to FASTSORT

Please use numbers to operate.
Press 1 to select file: 1
Press 0 to exit: 0

After press 1:
File should be selected by user input.
After successful file selection, display the file contents too.
Sorting technique menu shall be displayed after successful file upload.

Sorting Techniques Menu
Select from the Following Sorting Techniques

Insertion sort: 1
Bubble sort: 2
Selection sort: 3
Merge sort: 4
Quick sort: 5
Heap sort: 6
Count sort: 7
Radix sort: 8
Bucket sort: 9
Exit: 0

Selected Sorting technique: [ ]

After performing sorting techniques Save and Display the sorted file and prompt the user for using software again or not.

Question 2. Do Asymptotic Analysis and running time comparison of sorting algorithms and fill the following table.

S.No	Techniques	Running time (code execution)	Asymptotic Time (Worst)
1	Insertion sort		
2	Bubble sort		
3	Selection sort		
4	Merge sort		
5	Quick sort		
6	Heap sort		
7	Count sort		
8	Radix sort		
9	Bucket sort		