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ECE 118

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Code

```
#include "library.h"
##include "iostream"
#include "ifstream"
#include "files"
```

```
// Part 1
// 1A

void struct student() {
std:string Firstname, Lastname;

 double Exam1,Exam2,Exam3;
 double Exam_Average;

}
```

```
// Part 1
// 2A

void readData (student arr[],string file, const int array_size) {

        //2B
        std:: ifstream data;
        data.open(file);

        if (fin.fail())) {
        cout <<"Failed to open" << endl;
        return 0;}
```

```
            double x = 0;
            int size_min = x;
            for (!data.eof() ||  size_min < array_size) {

            string Firstname , Lastname;

            const double Exam1,Exam2,Exam3;

                  //Order of Output


                  if (file.fail())
                  print("Not Working");

                  arr[file].Firstname = Firstname || arr[file].Lastname = Lastname
     ||arr[file].Exam1 = Exam1 ||arr[file].Exam2 = Exam2||arr[file].Exam3 = Exam3;

                  file >> Firstname >> Lastname >> Exam1 >> Exam2 >> Exam3;


    //2C

    //Making of Total Exam Average
    int total_exams = 3;
    arr[file].Exam_Average = (Exam1+Exam2+Exam3)/total_exams ;


      }

      //2D

      file.close()
      return 0;

}



  //Part 1
  //3A

  void printData(const int array_size,student arr[])
```

```
//3B

{ for (int xx = 0; xx < array_size; xx++){

                    std::cout << arr[xx].Firstname <<arr[xx].Lastname; << arr[xx].Exam1
                    << arr[xx].Exam2<< arr[xx].Exam3; << arr[xx].Exam_Average <<endl;




}
```

```
// Part 2
// 5A

void findAverages(const int array_size, double Exam1_Average , double Exam2_Average,
double Exam3_Average,student arr[])
{
          const double Exam1_Average=0 ||const double Exam2_Average=0 || const double
Exam3_Average=0;
```

```
  // Part 2
  // 5B
                    for (int i =0; 0<size ; i++)
          {
                    Exam1 +arr[i].Exam1= Exam1_Average;
                    Exam2 +arr[i].Exam2= Exam2_Average;
                    Exam3 +arr[i].Exam3= Exam3_Average;

          }

                    (Exam1 / array_size) = const int Exam1_Average;
                    (Exam2 / array_size) = const int Exam2_Average;
                    (Exam3 /array_size) = const int Exam3_Average;



  }
  }
```

```
//Part 2
//6A

void findMax (student arr[], const int array_size, int Max_Exam1 , int Max_Exam2, int Max_Exam3) {
```

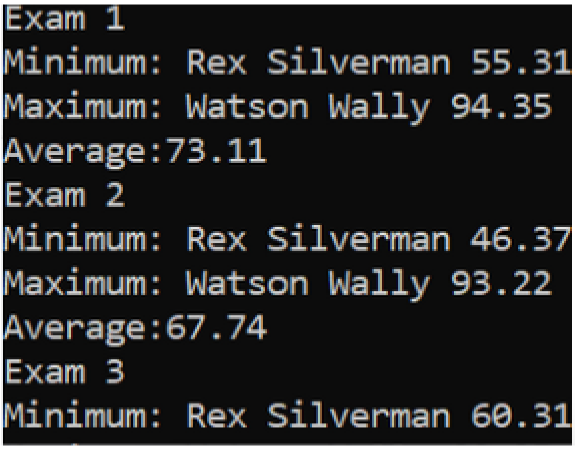
```
//6B

    const double Max_Exam1=0; || const double Max_Exam2=0; || const double Max_Exam3=0;

    //If statements for each following scenario

            for(int ff =0; ff < array_size; ff++) {

                if (arr[Max_Exam1].Exam1= arr[gg].Exam1 ) {
                    print ("N/A");
                //print("Yes")

            for (int gg =0; gg < array_size; gg++){

                if ( arr[Max_Exam3].Exam3 > arr[gg].Exam3) {
                    Max_Exam3 = gg;
                //print("Yes")
                if ( arr[Max_Exam2].Exam2 > arr[gg].Exam2 ) {
                    Max_Exam2 = gg;
                //print("Yes")
                if ( arr[Max_Exam1].Exam1 > arr[gg].Exam1 ) {
                    Max_Exam1 = gg;}
                //print("Yes")

                return 0;




                }

            }
        }
    }
```

```
void findMin (student arr[], const int array_size, int Min_Exam_1 , int Min_Exam_2, int
&Min_Exam_3) {

            for(int ll = 1; ll<array_size; ll++) {

                if ( arr[gg].Exam1 = arr[Max_Exam1].Exam1) {
                    print ("N/A");
            //print("Yes")

                if ( arr[ll].Exam1 > arr[Min_Exam_1].Exam1) {
                    Min_Exam_1 = ll;
                }
            //print("Yes")



            if ( arr[ll].Exam2 > arr[Min_Exam_2].Exam2) {
                    Min_Exam_2 = ll;
                }
            //print("Yes")

                if ( arr[ll].Exam3 > arr[Min_Exam_3].Exam3) {
                    Min_Exam_3 = ll;
            //print("Yes")

                }


            } return 0;
        }
```

```
// Part 3
void sort(const int array_size,student arr[]) {

        for(int mm = 1; mm<array_size; mm++) {
                for (int nn = 0; nn < array_size -1 + nn; nn ++)

        { if (arr[nn].Exam_Average >arr[1+nn].Exam_Average)

        const double solution = arr[nn].Exam_Average;
                        arr[nn].Exam_Average = arr[nn+1].Exam_Average;
                        sort(solution,100);
                        solution = aa[nn+1].Exam_Average;
                        return 0;
                }}}}




void main () {

// Part 1
// 4A
        int Student_Count = 100;
        student list_1 [Student_Count];


// Part 1
// 4B

        int x= 0;
        int order = readData("ex2data.txt", list_1, Student_Count);


// Part 1
// 4C

        printData(list_1, order);
```

```
//FindAverages
        findAverages(list_1, Student_Count ,Exam1_Average,Exam2_Average,exam3avg);
        new_line();
        print(cout << "Exam 1 Average " << Exam1_Average << endl;) cout << "Exam 2
Average " << Exam2_Average << endl; cout << "Exam 3 Average " << Exam3_Average <<
endl;




//FindMax
        findMax(list_1, Student_Count ,Exam1,Exam2,exam3avg);
        new_line();
        print (cout << "Maximum " << cout << " Exam 1; " << Max_Exam1 << " Exam 2:" <<
Max_Exam2 << " Exam 3:"<< Max_Exam3 << endl;);



//FindMin
        findMin(list_1, Student_Count ,Exam1,Exam2,exam3avg);
        new_line();
        print(cout << "Minimum" << endl;cout << "Exam 1; " << Max_Exam1 << " Exam 2:"
<< Max_Exam2 << " Exam 3:"<< Max_Exam3 << endl;)



        sort(list_1, Student_Count);
        new_line();
        printData,list);

}
```

Output



```
Exam 1
Minimum: Rex Silverman 55.31
Maximum: Watson Wally 94.35
Average:73.11
Exam 2
Minimum: Rex Silverman 46.37
Maximum: Watson Wally 93.22
Average:67.74
Exam 3
Minimum: Rex Silverman 60.31
```