SE 116
– preLAB (TO DO @ HOME)

Aim: Practicing with C and shifting from coding in C to C++.

Write a program that reads SE116 course grades entered from the standard input and then prints the largest, the smallest and the average values of the grades. You should implement the code in various ways as follows:

1. Use an array of integers to store the grades in the memory.

a. Allocate the storage statically at the compilation time.

Example for static memory allocation:

```
#define Size 35
int grades[Size];
```

b. Allocate the storage dynamically at the run time.

Example for dynamic memory allocation:

```
int Size;
int * grades;
cin>>Size;
grades= new int[Size];
```

2. Use a user defined structure to store both the grades and the names of the students.

An example structure declaration to store the related data of the students:

```
struct CourseGrades{
int grades[35];
string names[35];
};
```

Therefore, you will implement **3 programs** for this work. Use a "***menu()***" function that prints the available functions to the user. The prototypes for available functions may be as follows:

```
void enterGrades(int *array_ptr, int size);
// for 2nd question:   void enterNamesAndGrades(struct CourseGrades *struct_ptr);
// OR alternative C++ style: void enterNamesAndGrades(CourseGrades &struct_ref);
int findMinimum (int *array_ptr, int size);
int findMaximum (int *array_ptr, int size);
float findAverage (int *array_ptr, int size);
```