C - Assignment 04 (100 pts)

Notes

Do the following for each exercise

- Create a main() function
- Use good variable names and coding style
- Include some simple comments

Exercise 01 (40 pts)

We suppose that we have the following array of 10 integers : {5, 24, 76, 1, 8, 53, 40, 7, 33, 10}. In a single for loop, deduce the biggest element, the smallest element, the index of the biggest element, the index of the smallest element and the average of the elements. Print them at the end of the program.

Notes:

- Define SIZE as 10 and use it in the for loop
- The average should include decimal points

Exercise 02 (30 pts)

Write a program that generates a 100 random integers between 0 and 9 and displays how many times each number appears.

Notes:

- 100 and 9 should be defined as symbolic constants
- The function `rand()` returns a random integer between 0 and at least 32767
- Hint: you need an array of 10 elements to solve this program
- Below is a skeleton code for generating random numbers in C

```c
#include <stdio.h>
#include <stdlib.h>
#include <time.h>


int main(void)
{
	srand(time(NULL));

	// Your program starts here...
}
```

Exercise 03 (30 pts)

Using nested for loops, print the following:

```
1       2       3
4       5       6
7       8       9
10      11      12
```

Notes:

- You **cannot** use a counter variable for printing the numbers. For example:

  ```
  i++;
  printf("%d\t", i);
  ```

  is not acceptable
- The numbers should be deduced from the values of the loops counters (using a linear combination of the row and column numbers)