

# Final Assignment

CSE 115, Section: 30

Total Marks: 40

Deadline: 04 – 06 –2020

Advice to Students: Please submit your code in one notepad “.txt” files, after running them in codeblocks, properly labeling each answer in a serial wise manner is mandatory. You do not need to upload any output screenshots.

You are suggested and encouraged to take help from the internet. But, please be aware of plagiarism, if the contents from the assignment are found to be copied from any source directly from the internet or another of your classmates, then all related to the incident would be heavily penalized.

You are advised to submit on the submission section of Google classroom, but if it is not possible, please submit your assignments by email with the subject “Online Assignment CSE 115 section 30” at [saif.ahmed02@gmail.com](mailto:saif.ahmed02@gmail.com)

1. a. Write a function that takes 3 integer inputs and returns the maximum number  
b. Use the mentioned function to find the maximum number in a program where the user inputs 21 different numbers. (4 marks)
2. Write program that takes a string as input and prints the string in reverse with a whitespace between each character, without using library functions or the "string.h" header file (6 marks)

For example:

Input: CSE 115, Section: 30

Output: 0 3 : n o i t c e S , 5 1 1 E S C

3. Write a program that takes an input n from the user and then prompts the user to write inputs for an n by n matrix (if n = 3, the user will be asked to enter 9 values for a 3 by 3 matrix)  
Your program should then calculate the product of all the elements in the two diagonals.

For examples:

Input: 3

Output: enter values for your 3X3 matrix

1 2 3

Input: 1 2 4

5 6 8

Output: the products are: 16 and 30 (8 marks)

4. Write a program to find the frequency of all articles ("a", "an" and "the") in a string.

For example:

**Input:** Once upon a time an ant kicked an elephant when the elephant was sleeping.

**Output:**

Frequency of "a" -> 1 time(s)

Frequency of "an" -> 2 time(s)

Frequency of "the" -> 1 times(s) (6 marks)

5. Suppose you are asked to write a C program for a certain airlines which provides flight for their passengers in very small planes.  
Their planes have 3 Business Class seats and 5 Economy Class seats

Write a program that allows the authority to book flights for passengers and store it in two different structures (storing the passenger's name, email and Phone number), one for business class passengers and the other for economy class.

Your program should also prompt the user if his chosen type of seat is full and offer them the other type of seat.

Next print all the Passenger details. (16 marks)

Hint: Use functions to approach large problems to accomplish them step by step

