

Assignment 1

Due Date: Thursday April 5th, 2024 (11:59 PM)

Total marks of this assignment are 100.

In case of plagiarism in any question all assignment marked zero.

Submit one zip file including cpp files having naming convention like (0001_task1.cpp) and so on.

Teams channel is created, and you can post your queries regarding assignment there. However, sharing of code is not allowed.

Submission will be done only on Horizon portal. Submission sent on email will award you negative marks.

GOOD LUCK!

Task 1 [10 marks]

Given a file named "**Input.txt**" containing 10 integer values, your task is to read the data from the file into an array. Then, divide the array into two parts and sort both parts in ascending order and write back to new file **output.txt** as well.

Input.txt

2 5 9 7 3 6 4 1 8 10

Output:

Array1:

2	3	5	7	9
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Array2:

1	4	6	8	10
---	---	---	---	----

Output.txt

2 3 5 7 9 1 4 6 8 10

Question 2: [20 marks]

Find the total number of **sentences** in a paragraph. Read a paragraph from file "Input.txt".

Input.txt

Sunset is the time of day when our sky meets the outer space solar winds. There are blue, pink, and purple swirls, spinning and twisting, like clouds of balloons caught in a blender. The sun moves slowly to hide behind the line of horizon, while the moon races to take its place in prominence atop the night sky. People slow to a crawl, entranced, fully forgetting the deeds that still must be done. There is a coolness, a calmness, when the sun does set.

Output:

Total Lines: 5

Question 3: [20 marks]

A file “Input.txt” contains a paragraph. You are required to write a program that asks the user to enter a word finds the number of times that word is repeated.

Input.txt:

Pakistan is an Islamic Republic and was formed in 1947. The country was founded by Jinnah and the country was separated from the United India to form Pakistan. Pakistan has 5 provinces and it has India, Afghanistan, Iran and China as its neighbors. The country is being run according to the principles of Islam and the country is in its worst state right now. Pakistan is a victim of severe corruption, power outage and mismanagement. Most people are leaving the country as they cannot live this difficult life. The country has rich mineral resources and great manpower.

Output:

Enter the word you want to check: - Pakistan
Pakistan is repeated 4 times.

Question 4: [20 marks]

Read two words from file “input.txt”, and compare the words with each other, and copy the same index in the file “output.txt”. Also write the position of matching characters.

input.txt

abfsrtgatd
agesojlaqd

output.txt

asad 1 4 8 10

Question 5: (Update data in a file) [30 marks]

You are running a store containing hardware inventory. Store has the following inventory:

Store

Hardware	Quantity	Total Price
Jigsaw	10	1200
Nail	6	30
Hammer	0	0
Wrench	7	21
Screwdriver	4	24

Chart of prices of each hardware:

Hardware	Price (per item)
Jigsaw	12
Nail	5
Hammer	0
Wrench	3
Screwdriver	6

Create a file “store.txt” containing data as shown below

Store.txt

Jigsaw 10 1200
Nail 6 30
Hammer 0 0
Wrench 7 21
Screwdriver 4 24

Console screen should show the chart of hardware and their prices (per item).

Ask customer for item he wants to buy and quantity of an item. Give the item to the customer and make a bill and update the hardware stock.txt accordingly.

For example:

Output (Screen):

Chart of Hardware is:

Jigsaw 12

Nail 5

Hammer 0

Wrench 3

Screwdriver 6

Input: 2 Nails

Output:

Number of nails: 2

Amount: 10

After this, updated file will be:

Hardware stock.txt

Jigsaw 10 1200

Nail 4 20

Hammer 0 0

Wrench 7 21

Screwdriver 4 24

Output (Screen):

Chart of Hardware is:

Jigsaw 1200

Nail 20

Hammer 0

Wrench 21

Screwdriver 24

Input: 5 Screwdriver

Output:

Number of Screwdriver: 4

Amount: 24

After this, updated file will be:

Hardware stock.txt

Jigsaw 10 1200

Nail 4 20

Hammer 0 0

Wrench 7 21

Screwdriver 0 0

Bonus Part

Question 6: [25 marks]

A file “word.txt” contains a single word. You are required to write a program that finds palindrome or sub palindrome in a word, and write palindrome and its length in a file “palindrome.txt”. Minimum length of your palindrome is 3

word.txt

Civic

Output.txt

Civic 5

word.txt

Bilal

Output.txt

lal 3

word.txt

dress

output.txt

no palindrome