Sirma

e: office@sirma.bg
m: +359 2 9768310
a: 135 Tsarigradsko Shosse, blvd.
1784 Sofia, Bulgaria

Streams and Files

1. Word Lengths

Write a program that reads a text file ("input.txt") and prints on the console the length of each word in the file. Use BufferedReader in combination with FileReader.

Input.txt	Output
This is a simple file with words of different lengths	4, 2, 1, 6, 4, 5, 2, 8, 7

Hints:

Use StreamReader.

Split each line into words, calculate the length of each word, and print it.

2. Character Frequency

Write a program that reads a text file ("input.txt") and prints on the console the frequency of each character in the file. Use StreamReader.

Input	Output

e: office@sirma.bg
m: +359 2 9768310
a: 135 Tsarigradsko Shosse, blvd.
1784 Sofia, Bulgaria

Hello World!	H: 1 e: 1 l: 3 o: 2 : 1 W: 1 r: 1 d: 1 !: 1

Hints:

- Read the file character by character.

3. Replace Word

Write a program that reads a text file ("input.txt"), replaces all occurrences of a given word with another word, and writes the result to another file ("output.txt").

Input	Output
C# -> HTML **C# is fun. C# is powerful.**	HTML is fun. HTML is powerful.

4. Count Lines, Words, and Characters

Write a program that reads a text file ("input.txt") and prints on the console the number of lines, words, and characters in the file.

- Read the file line by line.
- Count lines, split each line into words to count words, and sum the length of lines to count characters.

5. Extract File

Write a program that reads the path to a file and subtracts the file name and its extension.

Then print the file size in Bytes

Input	Output
C:\home\academy\presentation.pptx	File name: presentation File extension: pptx File size: {size} bytes
C:\Projects\website\some.file.cs	File name: some.file

e: office@sirma.bg
m: +359 2 9768310
a: 135 Tsarigradsko Shosse, blvd.
1784 Sofia, Bulgaria

	File extension: cs File size: {size} bytes

6. Reverse Lines

Write a program that reads a text file ("input.txt"), reverses each line, and writes the result to another file ("output.txt").

Input:

Hello World

C# Programming

Output:

dlroW olleH

gnimmargorP #C

Hints:

- Use StreamReader and StreamWriter.
- Use Array.Reverse() to reverse each line.

7. Count Unique Words

Write a program that reads a text file ("input.txt") and prints the number of unique words in the file.

Input:

This is a test file. This file is made just for test.

Output:

Unique words: 8

Hints:

- Use Specific Data Structure to store unique words.
- Split each line into words and add them.

e: office@sirma.bg
m: +359 2 9768310
a: 135 Tsarigradsko Shosse, blvd.
1784 Sofia, Bulgaria

8. Merge Lines from Two Files

Write a program that reads lines from two text files ("input1.txt" and "input2.txt") and writes them alternatively into a third file ("output.txt").

File 1:

Line 1 from file 1

Line 3 from file 1

File 2:

Line 2 from file 2

Line 4 from file 2

Output:

Line 1 from file 1

Line 2 from file 2

Line 3 from file 1

Line 4 from file 2

Hints:

- Read lines alternatively from both files and write them to the output file.

9. Calculate Directory Size

Write a program that calculates the total size of all files in a directory (including subdirectories).

Output:

Total size: 4500 bytes

Hints:

- Recursively calculate the size of all files.

10. Copy File Content

Write a program that copies the content of a text file ("input.txt") to another file ("output.txt").

Hints: No Hints

11. Serialize and Deserialize Map

e: office@sirma.bg
m: +359 2 9768310
a: 135 Tsarigradsko Shosse, blvd.
1784 Sofia, Bulgaria

Write a program that saves and loads a Map of string keys and int values to a file using FileStream. Set the name of the file as "map.dat".

Hints:

- Use a Dictionary to store the data.
- Use BinaryFormatter().Serialize(fs, map);

12. *Serialize Custom Object List

Write a program that saves and loads a list of custom objects (Person). The Person class should have string name and int age. Set the name of the save file as "persons.dat".

Hints:

- Create a Person class with the specified fields.

13. *Extract Specific Files from Zip Archive

Write a program that reads a zip archive ("archive.zip") and extracts all .txt files into a directory named "extracted_files".

Hints:

- Use ZipFile to read the zip archive.
- Extract only the .txt files and save them in the specified directory.