|  |
| --- |
| **UNIVERSITY OF CENTRAL PUNJAB**  **FACULTY OF INFORMATION TECHNOLOGY**  **SECP1021: PROGRAMMING FUNDAMENTALS SE (LAB)**  **FINAL TERM EXAM**  **SPRING 2022** |

**Instructions:**

* **There are a total of 2 Questions.**
* **All questions carry same marks.**
* **Given example is one of the sample, your program should work on different input.**
* **Each function should perform one functionality.**
* **Total time available for exam is 90 Minutes.**
* **Complete your exam in given time.**
* **Submit a zip file named your roll number e.g. L1F21XXXX0000 on your portal https://portal.ucp.edu.pk**

**Time Allowed: 90 Minutes**

**Question 1: (Marks 10)**

You have a file **marks.txt** which contains marks of your all quizzes which is done in your whole semester. There are total 6 quizzes done throughout semester. But you missed some quizzes. File contains **total number of attempted quizzes** and **obtaining marks** of quizzes. Read data from file into a **dynamic allocated array**. Your teacher is willing for retake of a quiz from you. Write a **C++ function based program** in which ask your teacher about result of retake quiz and **grow memory** accordingly in order to **store** the marks of retake quiz. Now find the **average** of all quizzes and **store** the result into a file **output.txt** and also update **marks.txt** with **updated record**.

**Sample input/output:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **marks.txt**   |  | | --- | | 4  9 6 8 7 | | **After reading data:**   |  |  |  |  | | --- | --- | --- | --- | | 9 | 6 | 8 | 7 |   **Sample input:**  **Enter marks of retake Quiz:** 9.5  **After regrow and new data:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | 9 | 6 | 8 | 7 | 9.5 | | **marks.txt**   |  | | --- | | 5  9 6 8 7 9.5 |   **output.txt**   |  | | --- | | 7.9 | |

**Question 2: (Marks 10)**

You have a file names.txt which contains **name** of your **50** class fellows. Each line of file **contains length of name** and after length the **actual name**. You have list of marks which they got in final term. But the marks list is **sorted** on the basis of the **first alphabet of each name**. Write **a C++ function based program** that reads **length of name** form file create required **dynamic memory** for that name **read name** from file. After **reading all data** from file **sort the names alphabetically** and **store** into another file **sortByName.txt**.

**Sample input/output:**

**names.txt**

|  |
| --- |
| 8  4 Esha  6 Mehran  5 Sajid  6 Absham  3 Ali  6 Mohsin  4 Zain  6 Tabish |

**After Reading Data:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| E | s | h | a | \0 |  |  |
| M | e | h | r | a | n | \0 |
| S | a | j | i | d | \0 |  |
| A | b | s | h | a | m | \0 |
| A | l | i | \0 |  |  |  |
| M | o | h | s | i | n | \0 |
| Z | a | i | n | \0 |  |  |
| T | a | b | i | s | h | \0 |

**After Sorting Data:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| A | b | s | h | a | m | \0 |
| A | l | i | \0 |  |  |  |
| E | s | h | a | \0 |  |  |
| M | e | h | r | a | n | \0 |
| M | o | h | s | i | n | \0 |
| S | a | j | i | d | \0 |  |
| T | a | b | i | s | h | \0 |
| Z | a | i | n | \0 |  |  |

**sortByName.txt**

|  |
| --- |
| 8  6 Absham  3 Ali  4 Esha  6 Mehran  6 Mohsin  5 Sajid  6 Tabish  4 Zain |