

**Programming Fundamentals**

**SECTION-A**

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| --- | --- |
| Lab 08 | |
| **Topic** | File Handling and Pointers |
| **Objective** | * Hands on practice of pointers in C++ * Pointers with functions |

**Question No: 01**

Write a C++ program to declare a char type array of size 50. Now, randomly fill this array with english alphabets using a user defined function (Name: fillArray()). Declare another function (name: identifyIndexes()) which finds those indexes whose value is unique in array and store these indexes in another integer type array. Finally, another user defined function (Name: saveIndexes()) will write value of these indexes along with their addresses in a text file(Outptu.txt).

**Sampe Output**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array:**  **0 1 2 3 4 48 49**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **A** | **D** | **C** | **D** | **Z** | **. . .** | **C** | **M** |   **Index Storing Array:**  **0 1 2 3 4 48 49**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **0** | **4** | **49** |  |  | **. . .** |  |  |  |  | | --- | | **Output.txt** | | **Character Address**  A 0x512fd12  Z 0x512fd17  M 0x512fe09 | |

**Question No: 02**

Write a C++ program having a function (Name: findCommon()) which takes two pointers (which are having initial addresses of two integer array of size 10) parameters. Find common elements in both arrays and returns an array of pointers pointing towards element of Array-1 which are also there in array-2. Print these addresses of elements of array-1 in main function.

**Sampe Output**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array\_01:**  **0 1 2 3 4 8 9**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **15** | **20** | **25** | **30** | **35** | **. . .** | **55** | **60** |   **Array\_02:**  **0 1 2 3 4 8 9**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **10** | **100** | **20** | **110** | **30** | **. . .** | **50** | **140** |   **Pointer\_Array:**  **0 1 2 3 4**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | 0x512fd19 | 0x592fd16 | 0x472fe12 | 0x518fd14 | 0x125fd48 |   **Output:**  0x512fd19  0x592fd16  0x472fe12  0x518fd14  0x125fd48 |

**Question No: 03**

Write a C++ program which reads text data line by line from a text file(Name: input.txt). A user defined function is used to read data line by line from file( Name of function is ReadAllLines()). After reading each line this line is passed to another function (Name: updateLine()) which counts the No. of characters in line and insert no. of characters at the end of line and returns updated line contents. First method (ReadAllLines()) writes this line in another text file(Name: UpdatedInput.txt). Program also displays Total No. of characters found in File (Input.txt) at the end.

**Note:** *You will always pass a pointer of each line to function updateLine() method.*

**Sampe Output**

|  |  |
| --- | --- |
| **Input.txt** | **UpdatedInput.txt** |
| I am a student of UCP.  I am in second Semester.  I am in Love with UCP. | I am a student of UCP. **22**  I am in second Semester. **24**  I am in Love with UCP.**22** |
| **Ouput:**  Total characters found in file are: 68 |