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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course:** | Introduction to Computing Lab | **Course Code:** | **EL 116** |
| **Program:** | **BS(EE)** | **Semester:** | **Fall 2019** |
| **Duration:** | **2 Weeks** | **Total Marks:** | **150** |
| **Due Date:** | **Last Week of Semester** | **Weight** | **21 marks** |
| **Section:** | **EL-2B & EL-3B** | **Page(s):** | **3** |
| **Exam:** | **Project** | **PLO** | **5,9,11** |
| **Instruction/Notes:** | * **Submission details: Name the folder with your Roll numbers. Submit the code, with both input and output files.** * **Submission Folder**: **Submit on Slate** * **Usage of functions, arrays and filing is necessary.** | | | |

Project Statement:

Write a C++ code to implement “Telephone Directory Management System”. A Telephone Directory contains First Name, Last Name, Address, Landline Number and Cell Phone Number. The text file contains information in following order

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| First Name | Last Name | Address | Cell Number | Landline Number |
| Awais | Ali | 690 Elmwood Road | +92-321-90282726 | 041-29415173 |
| Samar | Khalid | Nazareth, PA 18064 | +92-314-57703585 | 042-73419081 |
| Fahad | Altaf | 9443 South Virginia Ave. | +92-301-47508539 | 052-11993817 |
| Abdul | Rasheed | Yuma, AZ 85365 | +92-300-87847817 | 056-50074475 |
| Talha | Noor | 658 Wayne Drive | +92-321-80895416 | 049-63010018 |
| Farhan | Khalid | Boston, MA 02127 | +92-320-79702982 | 051-34107626 |
| Hamza | Aslam | 500 Glenwood Court Feasterville Trevose, PA 19053 | +92-321-44301991 | 042-33531038 |

Note: You have to implement this system using character arrays. Use of string data type is not allowed.

Your Implementation should contain following functionality

* Read Contacts from a text file into Characters Arrays(2D).
* Insert a new contact. Before inserting a contact, a contact must fulfill the below conditions
  + Landline number must start from zero (0). If user doesn’t enter a number starting from 0, take input again.
  + Cell Phone number must start from +92. If user doesn’t enter a number starting from +92, take input again.
  + Address can be 50 characters long.
  + First Name and Last name can be 15 characters Long.
* Delete a contact from file
* Modify a contact
  + User can modify the name, address or number of the existing contact.
* Show all contacts on console
* Show all contacts on console starting from a given pattern. Pattern can be 10 characters long. For example, if user enters the pattern 042, all contacts which has landline number starting from 042 will be shown.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| First Name | Last Name | Address | Cell Number | Landline Number |
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* Your program should able to Sort contacts (in file) by
  + First Name
  + Last Name
  + Landline Number
  + Cell Phone Number
* Your program should able to find contacts by
  + First Name
  + Last Name
  + Landline Number
  + Cell Phone Number

**Project Deliverables:**

1. Identify possible solutions which can be used to design this system. Provide at least two different solutions to design the required system. **[SLO-5.1]**
2. Compare the possible solutions identified earlier in SLO 5.1 and select one among the possible solutions and justify your selection. **[SLO 5.2]**
3. Apply the selected and developed techniques in the design of system. **[SLO-5.3]**
4. Verify your design for different inputs and suggest solutions that might lead to improve the quality of such system . **[SLO-5.4, 11.4]**
5. Discuss the limitations and suggest extension of the developed solution. **[SLO-5.5]**
6. Prepare a management plan to implement the project successfully and provide a flow chart of your program. Clearly mention input arguments and return type of each function. Identify and mention algorithm/technique to be used in the functions. **[SLO 11.1]**
7. Prepare a schedule which will show the time duration required to implement the different functions of the assigned project. **[SLO 11.2]**
8. Prepare a short description about which tasks are performed by the group members and depict the team relationship while implementing the project. **[SLO 11.5 & 9.1]**
9. Prepare a detailed report (A report highlighting the technical as well as non-technical details which you think to be important) on the completion of project which will summarize all the relative information related to different tasks of the project. **[SLO-11.6]**

**SUBMISSION DETAILS**

* You must do this assignment in a group of 2 students.
* Submit a hard copy of your report(printed) on SLO 5.1, 5.2, 11.1 and 11.2 on **Monday, November 25, 2019** in Lab V(a) at 2 PM.
* Final Evaluation of the project is on **December 3rd, 2019**. You will have to submit a report on [SLO-5.3, 5.4, 5.5, 9.1, 11.4, 11.5, 11.6] on the day of Evaluation.

**VERY IMPORTANT**

Academic integrity is expected of all the students. Plagiarism or cheating in any assessment will result in negative marking or an **F** grade in the course, and possibly more severe penalties.