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|  | **BAHRIA UNIVERSITY, (Karachi Campus)**  *Department of Software Engineering*  **OEL I**  **Semester Fall 2023** |  |

**Course Title:**  Data Structure & Algorithms **Course Code**: CSL-221

**Course Instructor:** Engr Laraib Siddiqui **Class**: BSE-3(B)

**Lab Instructor:** Engr. Ayesha Khan **Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Max. Marks:** 12 Marks **CLO :** CLO-1 **\_\_\_\_\_\_\_\_\_**

**Time:** 2 hours **Date:** 8-11-2023

**Note:**

* Plagiarism is not allowed, if found you will get zero marks.
* Submit the task on LMS in given Time otherwise submission will be considered as null.
* Include your name or enrollment no on footer.
* Your File name should be in the given format:
  + [Class Section] [Complete Name] DSAMID
  + **i.e., BSE3A Usman Ali DSAMID**

**QUESTION 01: (4 Marks)- CLO 1**

Techviz is a company who wants to launch their new web browser “RobustGo” which would be more secure and user friendly.

1. Your team has to work on a mechanism that can keep track of all the opened tabs in one window, in a way that it can return all the tabs opened from beginning to the very recent tab but in a sequence order of recent tab till first tab.
2. The user can create new tab by typing “NEW+”.
3. Warn the user when tabs limit exceed more than 4.
4. The user can have the option to view the last tab active by typing “BACK” every time it takes user to the previous tab opened and on last tab the option of “BACK” is automatically disabled.

**QUESTION 02: (6 Marks)- CLO 1**

“Khalqat Hospital” has hired a team to build the system for patient record keeping. Every patients record is labeled with its Serial number (four digits) ,department initials and patient’s name separated by “-” **e.g. 1356-NUERO-ALI** for department “NUERO” and patient name is “ALI” in department wise shelves.

You have to perform following operations:

1. Allow Admin to add new patients data to hospital’s each record shelf according to department (Nuero, Heart, Bones). If the Admin wants to **add new patient**, it should be added in the related department After adding new record to shelf , show the updated record with their **count.**
2. Admin can **remove any** record from any shelf. Show the updated shelf after deletion
3. **Sort** the records in each shelf with reference to serial number in descending order
4. Allow Admin to **search** any patient in any shelf.

**QUESTION 03: (2 Marks)- CLO 1**

VIVA