**UCS 2312 Data Structures Lab**

**Assignment 1: Array ADT and its application**

**Date of Assignment: 07.10.2022**

Create an ADT for the array data structure with the following functions. *arrADT* will have the integer array and size. [CO1, K3]

1. create(arrADT,size, array) – Create the array with the required elements
2. deleteAt(arrADT, pos ) – Delete the specified element
3. insertAtEvery(arrADT,data) – Insert data before every element
4. search(arrADT, key) – return the position of the second occurrence of the element. If found return the position, otherwise return 1
5. printArray(arrADT) – prints the elements of the array

Write an application to use the arrADT to do the following:

Test the operations of arrADT with the following test cases

|  |  |
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| **Operation** | **Expected Output** |
| create(arrADT,20,[2,4,6,8,10]) | 2,4,6,8,10 |
| deleteAt(arrADT, 3) | 2,4,6,10 |
| insertAtEvery(arrADT,1) | 1,2,1,4,1,6,1,10 |
| search(arrADT,1) | 2 |
| search(arrADT,2) | -1 |
| printArray(arrADT) | 1,2,1,4,1,6,1,10 |

Best practices to be followed:

* Design before coding
* Usage of algorithm notation
* Use of multi-file C program
* Versioning of code