

## UCS406 Data Structures and Algorithms

### Lab Assignment-I

✓ 1) Develop a Menu driven program to demonstrate the following operations of Arrays

— MENU —

- 1.CREATE
- 2.DISPLAY
- 3.INSERT
- 4.DELETE
- 5.SEARCH
- 6.EXIT

✓ 2) Design the logic to remove the duplicate elements from an Array and after the deletion the array should contain the unique elements.

✓ 3) Predict the Output of the following program

```
int main()
{
    int i;
    int arr[5] = {1};
    for (i = 0; i < 5; i++)
        printf("%d ", arr[i]);
    return 0;
}
```

4) Implement the logic to

- ✓ i) Reverse the elements of an array
- ii) Find the matrix multiplication
- iii) Find the Transpose of a Matrix

✓ 5) Implement the Binary search algorithm regarded as a fast search algorithm with run-time complexity of  $O(\log n)$  in comparison to the Linear Search.

✓ 6) Bubble Sort is the simplest sorting algorithm that works by repeatedly swapping the adjacent elements if they are in wrong order. Code the Bubble sort with the following elements:

64	34	25	12	22	11	90
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✓ 7) Design the Logic to Find a Missing Number in a Sorted Array.