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

7) Design the Logic to Find a Missing Number in a Sorted Array.