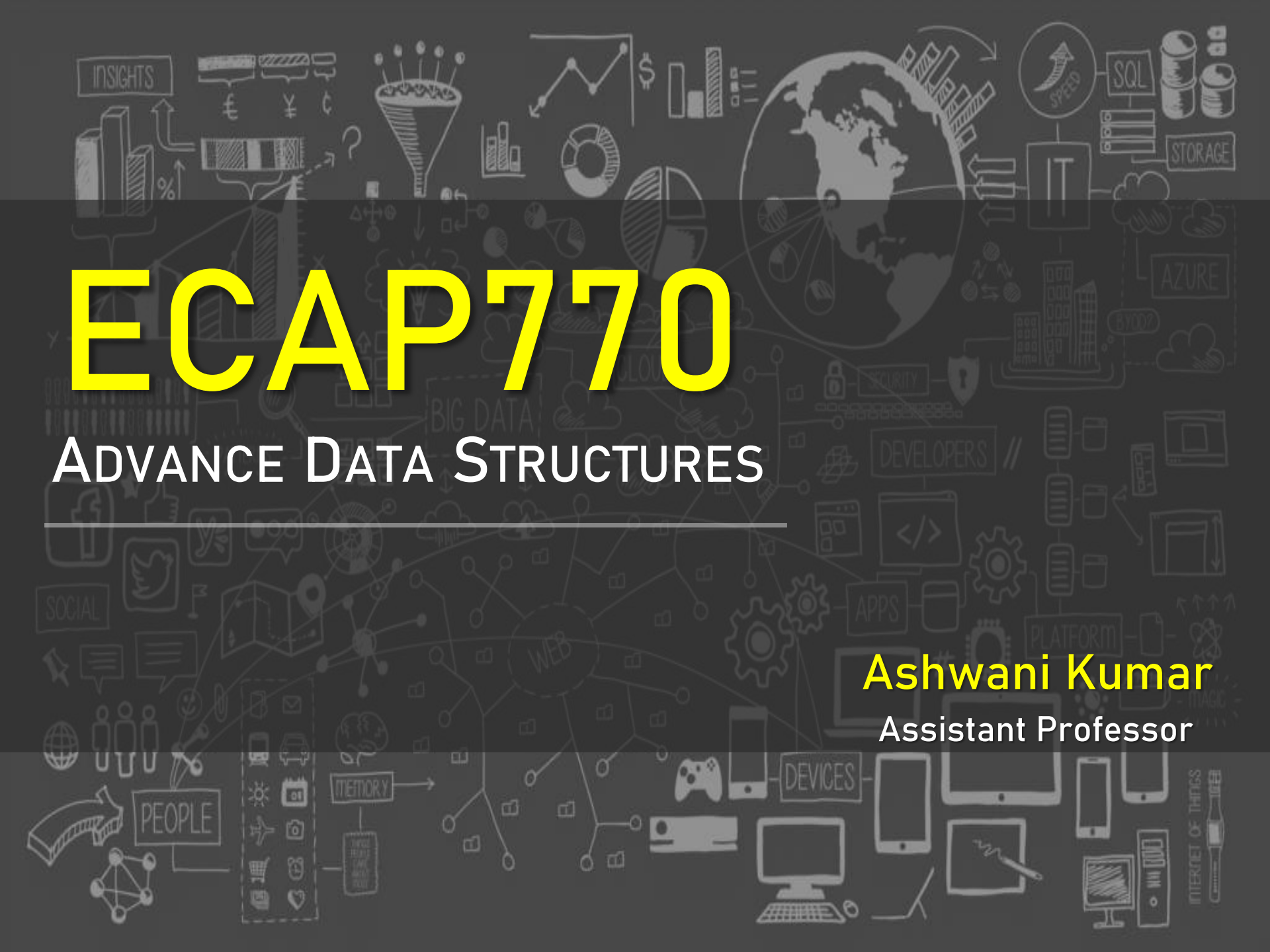

ECAP770

Advance Data Structures

Ashwani Kumar

Assistant Professor

Learning Outcomes

After this lecture, you will be able to

- Operations on arrays

Operations on arrays

- Following operations can be performed on arrays:
- Traversing
- Searching
- Insertion
- Deletion
- Sorting
- Merging

Array traversing

- Traversing is process of visiting each element of the array exactly once.
- As element of linear array can be accessing directly, only we have to vary an index from lower bound to upper bound in step of one to access individual elements in order

Array traversing

- We have linear array Arr as below:

1	2	3	4	5
15	28	30	35	60

- Here we will start from beginning and will go till last element and during this process we will access value of each element exactly once as below:

Arr [1] = 15

Arr [2] = 28

Arr [3] = 30

Arr [4] = 35

Arr [5] = 60

Algorithm

- Step 1 : [Initialization] Set I = LB
- Step 2 : Repeat Step 3 and Step 4 while I < = UB
- step 3 : [processing] Process the A[I] element
- Step 4 : [Increment the counter] I = I + 1
- [End of the loop of step 2]
- Step 5: Exit

Here LB is lower Bound and UB is Upper Bound A[ ] is linear array)

Program

```
#include <stdio.h>

main()
 {
   int arr[ ] = {10,12,15,20,14};
   printf("The array elements are :\n");
   for(int i = 0; i<5; i++)
        {
      printf("arr[%d] = %d \n", i, arr[i]);
   }
}
```

output

```
the array element are
arr[0]=10
arr[1]=12
arr[2]=15
arr[3]=20
arr[4]=14

Process returned 0 (0x0)   execution time : 0.018 s
Press any key to continue.
```

Exercise

- Program to demonstrate traversal operation on array

That's all for now...