## Chapter: 7

# C Programs with Mustafa Rahman

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## Arrays

Collection of similar data types stored at contiguous memory locations

# Syntax

int marks[3];

char name[10];

float price[2];



# Input & Output

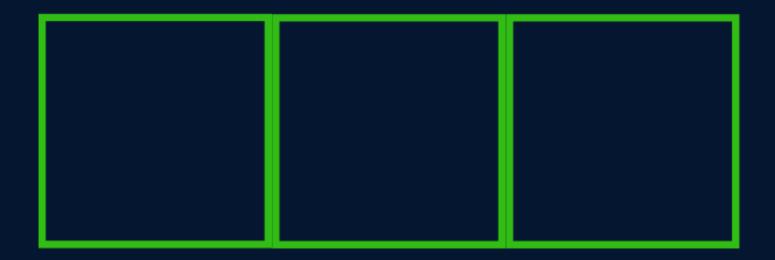
```
scanf("%d", &marks[0]);
```

```
printf("%d", marks[0]);
```

## Inititalization of Array

```
int marks[] = \{97, 98, 89\};
```

int marks[
$$3$$
] = { $97$ ,  $98$ ,  $89$ };



Memory Reserved:

### Pointer Arithmetic

Pointer can be incremented & decremented



#### CASE 1

```
int age = 22;
int *ptr = &age;
ptr++;
```

### Pointer Arithmetic

#### CASE 2

```
float price = 20.00;
float *ptr = &price;
ptr++;
```

#### CASE 3

```
char star = '*';
char *ptr = ☆
ptr++;
```



### Pointer Arithmetic

- We can also subtract one pointer from another

- We can also compare 2 pointers

# Array is a Pointer

```
int *ptr = &arr[0];
```

```
int *ptr = arr;
```

# Traverse an Array

```
int aadhar[10];
```

int \*ptr = &aadhar[0];



## Arrays as Function Argument

```
//Function Call printNumbers(arr, n);
```

## Multidimensional Arrays

### 2 D Arrays

```
int arr[][] = \{ \{1, 2\}, \{3, 4\} \}; //Declare
```

#### //Access

arr[0][0]

arr[0][1]

arr[1][0]

arr[1][1]