

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 = &star;  
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 Declaration

```
void printNumbers (int arr[ ], int n)
```

OR

```
void printNumbers (int *arr, int n)
```

//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]
```