

## DATA TYPES IN C

### Definition:

A data type in C defines the type of data that a variable can store.

### Why We Use Data Types:

Data types tell the compiler how much memory to allocate and what kind of value will be stored.

### Main Data Types in C:

#### 1. int

Used to store integer values.

Example: `int number = 10;`

#### 2. float

Used to store decimal (single precision) values.

Example: `float price = 99.5;`

#### 3. double

Used to store large decimal (double precision) values.

Example: `double pi = 3.14159;`

#### 4. char

Used to store a single character.

Example: `char grade = 'A';`

#### 5. void

Represents no value.

Example: `void main();`

### Type Modifiers:

#### 1. short

Used for small range integers.

Example: `short int x;`

#### 2. long

Used for large range integers.

Example: `long int y;`

#### 3. signed

Can store both positive and negative values.

#### 4. unsigned

Can store only positive values.

### Example Program:

```
#include
```

```
int main() {  
int age = 21;  
float marks = 85.5;  
char grade = 'A';
```

```
printf("Age: %d
```

```
, age);  
printf("Marks: %.2f  
, marks);  
printf("Grade: %c  
, grade);  
  
return 0;  
}
```

Key Points:

- Data type defines the type of data stored.
- It decides memory size and value range.
- Every variable must have a data type.