

VARIABLES

Variable is an identifier that is used to represent some specified type of information within a designated portion of the program. A variable may take different values at different times during execution called memory location.

It contain a storage area to hold data. It is also called identifier. The value of the variable can be change during the execution. The rule for naming the variables is same as the naming identifier. Before used in the program it must be declared.

Declaration of variables specify its name. Data types and range of the value that variables can store depends upon its data types.

Syntax

```
int a;
char c;
float f;
```

Variable initialization

1. When we assign any initial value to variable during the declaration is called initialization of variables.
2. When variable is declared but contain undefined value then it is called garbage value.
3. The variable is initialized with the assignment operator such as
Data type variable name = constant;

Example

```
int a= 20;
Or int a;
a=20;
statements;
```

Rules for variables:

1. A variable name is formed with alphabets, digits, and a special character (-).
2. The first character must be an alphabet.
3. No special character are use other than underscore.
4. Both Upper case and lower case letters are used. But they are not treated as same.

Program

```
#include<stdio.h>
#include<conio.h>
void main()
{
int name = 20;
clrscr();
```

```
printf("The first value is%d \n",name);
getch();
}
```

Output

The first value is : 20

Types of variables

1. Local
2. Global
3. Static

1. Local Variable

Variables declared within a block that are local to the block

Example,

```
main()
{
int a; //local variable
}
```

2. Global Variable

If we want to use a single variable for many function Global Variables are used.

1. All Global variables are initialized to zero as default.
2. Global variables are stored in the data segment in memory
3. All functions can access this global variable.
4. Declared outside the function block.

Example:

```
int b; //Global variable
main()
{
int a; //Local variable
}
```

3. Static Variable

1. Static variable retains the value between function calls
2. It is initialized only during first call.
3. Static variable stored in the data segment in memory like global variable.
4. Initialized to zero by default.

Example

```
#include<stdio.h>
#include<conio.h>
void function(); // function declaration
```

```
void main()
{
clrscr();
function();
function()
function();
getch();
}
void function()
{
stack int a = 10;
++a;
printf(“%d\n”,a);
}
}
```

OUTPUT

11
12
13

