Preprocessor directive

Macro value

```
#define PI 3.14
```

Macro name

Type	Size	Range	Format specifier	Example
char	1 byte	-128 to +127	%c	'a' , 'A'
unsigned char	1 byte	0 to 255	%c	'a' , 'A'
int	2 byte	-32768 to +32767	%d	-25, 5, 0, -5
unsigned int	2 bytes	0 to 65535	%u	254, 36777
long int	4 bytes	-2147483648 to +2147483647	%ld	45l, -5l, 5000l
unsigned long	4 bytes	0 to 4294967295	%lu	1000l, 20000l
float	4 bytes	$\pm 3.4*10^{\pm 38}$	%f	-3.5f ,125.13f
double	8 bytes	$\pm 1.7*10^{\pm 308}$	%lf	-125.25 , 270.6
long double	10 bytes	$\pm 3.4*10^{\pm 4932}$	%Lf	-330.45L, -1.2L

$2^8 - 1 = 256 - 1 = 255$

0 -> 255

$-\frac{256}{2} = -128$

$255 - 128 = 127$

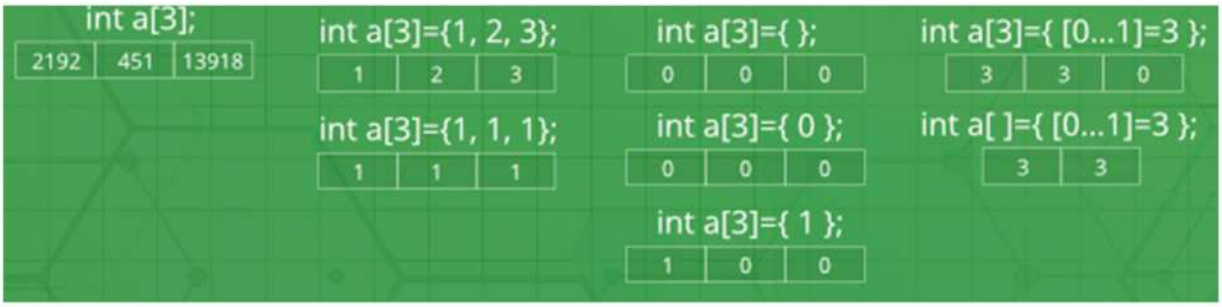
0

```
int v1 = 10;
int v2 = 20;
int v3 = 30;
int v4 = 40;
int v5 = 50;
.
.
.
```

Multiple variables to store each value

10	20	30	40	50	.

Single Array to store all values




```
#include <stdio.h>
Void main()
{
Int array [ ] ={1,2,3,4,5}
Int ii, n=5;
Printf ("the array element are :\n");
For(i=0 ; i<n ; i++)
{
Printf ("array[%d] =%d /n",I, array[i]);
}
}
```

Output

```
The array element are:
Array[0] = 1
Array[1] = 2
Array[2] = 3
Array[3] = 4
Array[4] = 5
```

int x[3][3]; Col_1 Col_2 Col_3

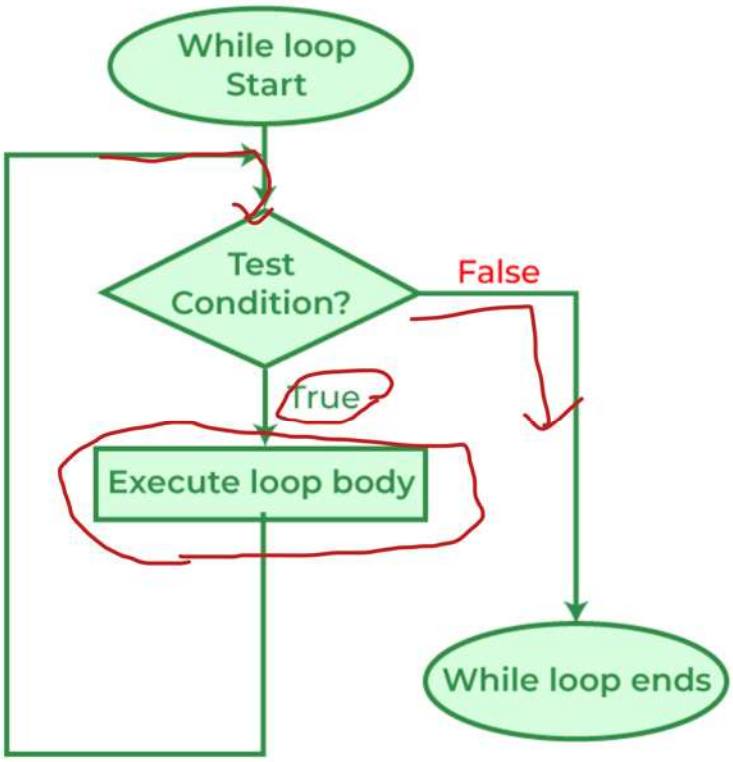
Row_1	x[0][0]	x[0][1]	x[0][2]
Row_2	x[1][0]	x[1][1]	x[1][2]
Row_3	x[2][0]	x[2][1]	x[2][2]

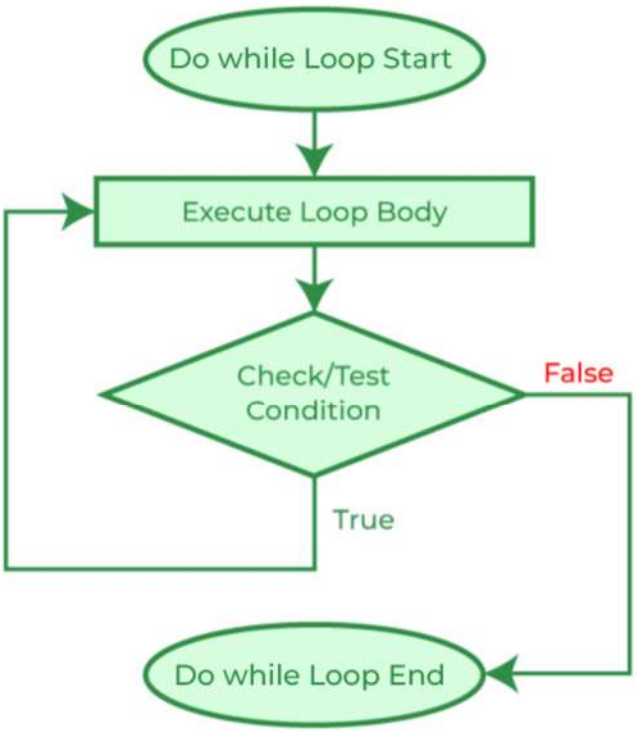
Bits $b_7 b_6 b_5$ →	000	001	010	011	100	101	110	111
b_4 b_3 b_2 b_1 ↓ / Row ↓ / Column →	0	1	2	3	4	5	6	7
0 0 0 0	0	NUL	DLE	SP	0	@	P	`	p
0 0 0 1	1	SOH	DC1	!	1	A	Q	a	q
0 0 1 0	2	STX	DC2	"	2	B	R	b	r
0 0 1 1	3	ETX	DC3	#	3	C	S	c	s
0 1 0 0	4	EOT	DC4	$	4	D	T	d	t
0 1 0 1	5	ENQ	NAK	%	5	E	U	e	u
0 1 1 0	6	ACK	SYN	&	6	F	V	f	v
0 1 1 1	7	BEL	ETB	'	7	G	W	g	w
1 0 0 0	8	BS	CAN	(	8	H	X	h	x
1 0 0 1	9	HT	EM	)	9	I	Y	i	y
1 0 1 0	10	LF	SUB	*	:	J	Z	j	z
1 0 1 1	11	VT	ESC	+	;	K	[	k	{
1 1 0 0	12	FF	FS	,	<	L	\	l	|
1 1 0 1	13	CR	GS	—	=	M	]	m	}
1 1 1 0	14	SO	RS	.	>	N	^	n	~
1 1 1 1	15	SI	US	/	?	O	_	o	DEL

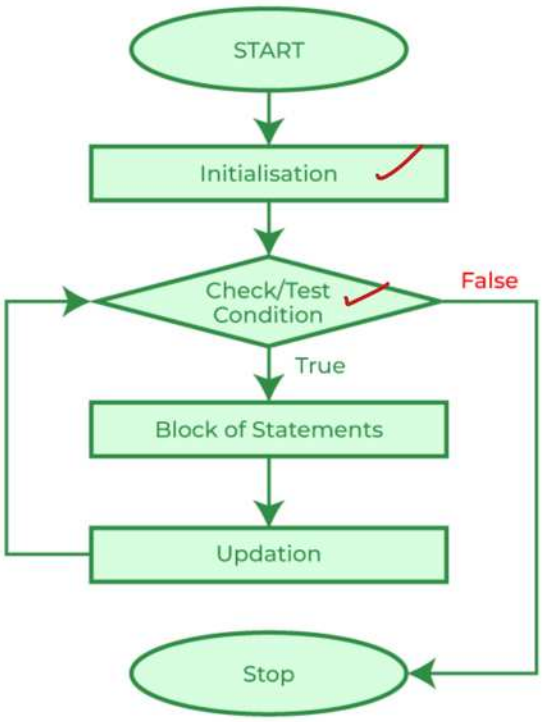
char s[11] = "javatpoint"

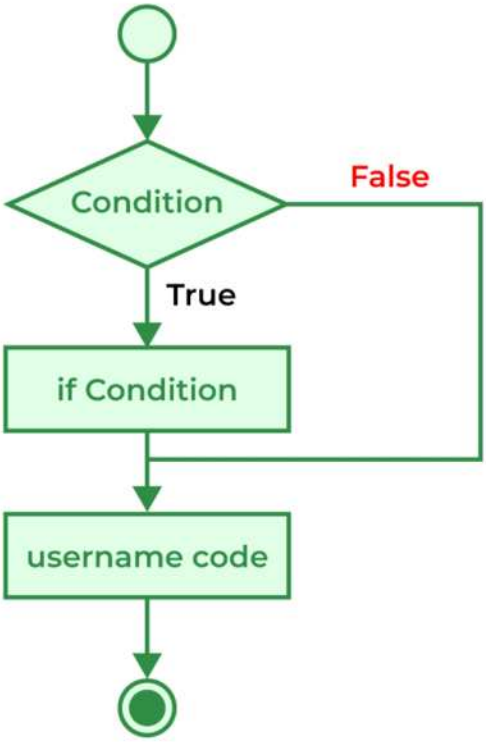
Index	0	1	2	3	4	5	6	7	8	9	10
values	j	a	v	a	t	p	o	i	n	t	\0

Escape Sequences	Meaning
\'	Single Quote
\"	Double Quote
\\	Backslash
\0	Null
\a	Bell
\b	Backspace
\f	form Feed
\n	Newline
\r	Carriage Return
\t	Horizontal Tab
\v	Vertical Tab









Conditional Statements in C

- If-else
  - If
  - If-else
  - If-else-if
  - Nested-if
- (condition) ? true : false
- Switch

If

```
if(condition)
{
    //true
}
```

If-else

```
if(condition)
{
    //true
}
else
{
    //false
}
```

If-else-if

```
if(condition 1)
{
    //true
}
else if(condition 2)
{
    //true
}
else
{

}
```

Nested-if

```
if(condition 1)
{
    if(condition)
    {
    }
    else
    {
    }
}
else
{
    if(condition)
    {
    }
    else
    {
    }
}
```

Switch

```
Switch expression
{
    case 1;
    break;

    case 2;
    break;

    case 3;
    break;

    default;
}
```