C-39 ⇒ Do while loop in C

do while

* do while loop is exit Controlled loop.

* While we exit from loop; the Condition is checked.

syntax:
```
do
{
    statements;
} while (Condition);
```

```
Initialization
do
{
    statement 1;
    :
    :
    statement n;
    modify / update;
} while (Condition);
```

Flow chart :-

```
        ┌─────────────────┐
        │  Initialization │
        └─────────────────┘
                 │
                 ▼
        ┌─────────────────┐
        │ Statement block.│
        └─────────────────┘
                 │
                 ▼
        ┌─────────────────┐
        │  modify / update│
        └─────────────────┘
                 │
                 ▼
   True        ◇ Condition ◇        False
        ◇                    ◇
                 │
                 ▼
        ┌─────────────────┐
        │  out of loop    │
        └─────────────────┘
```
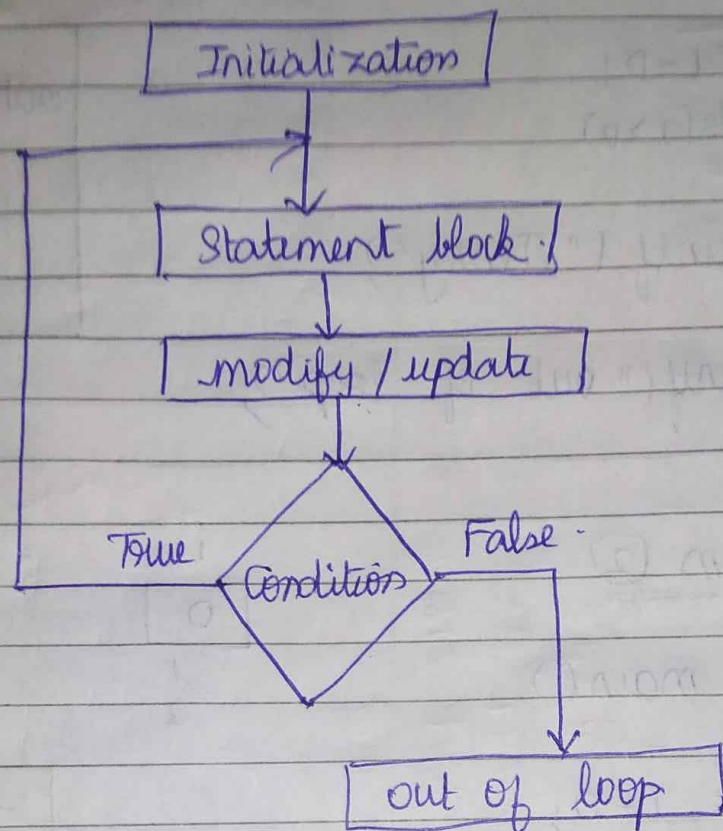
Hint :

* In do while loop; the loop body is executed atleast once independent of the Condition either it is true or false; since Condition is placed out of the loop.

Program (do while)

① int i = 0;
      do
      {
            printf ("Jenny");
      } while (i > 0);
      printf ("out of loop \n");

Program: (while)

```
int i=0;
while (i>0)
{
    printf ("Jenny");
}
printf ("out of loop");
```

O/P

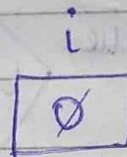| |
|---|
| out of loop |

Program ②

```
void main()
{
    int i=0;
    do
    {
        printf ("Jenny");
        i++;
    } while (i>0);
    printf ("out of loop\n");
}
```

i

0

1
2
⋮
32767
-32768

-32768 > 0

loop terminates

O/P

Jenny
⋮
Jenny (i=) -32768
loop terminate
out of loop

CODE 1:

```c
#include <stdio.h>
#include <stdlib.h>
/* 1 - do while loop */
int main()
{
    int i=0;
    do
    {
     printf("Jenny\n");
    }while(i>0);
    printf("Out of loop..\n");
    getch();
}
```

```
Jenny
Out of loop..
```

CODE 2:

```c
#include <stdio.h>
#include <stdlib.h>
/* 2 - do while loop */
int main()
{
    int i=0;
    do
    {
     printf("Jenny\n");
     i++;
    }while(i>0);
    printf("Out of loop..\n");
    printf("i=%d",i);
    getch();
}
/* loop is executed until value of i comes to 32767, -32768 >0 is false and
    loop terminates and comes out of loop, now i value is -32768 */
```

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```
Jenny
Jenny
Jenny
Jenny
Jenny
Jenny
Jenny
```