C_41 ⇒ Break Statement in C

Break statement:

* Breaks are used in switch and loop.

* Break can be used only either within
  - loops
  - switch

* Whenever the break is encountered in a loop, then control will automatically exit from loop and after the loop whatever statements are there it will be executed.

Example Program ① (using for loop)

* user enter a number (i.e) exactly 5 nos; so 5 iterations and when the user enters -ve number; then the loop terminates.

```
void main()
{
  int a, i, sum = 0;
  for(i=1; i<=5; i++)
  {
    printf("Enter a number:");
    scanf("%d", &a);
    if(a<0)
      break;
    sum = sum + a;
  }
  printf("sum=%d", sum);
}
```

* for loop for iterations

Case 1

a	sum	i
1	0	1
5	1	2
2	6	3
0	8	4
10	8	5
	18	

O/P

```
Enter no: 1
Enter no: 5
Enter no: 2
Enter no: 0
Enter no: 10
sum = 18
```

Case 2

a	sum	i
1	0	1
5	1	2
2	6	3
-10	8	4

O/P

```
Enter no: 1
Enter no: 5
Enter no: 2
Enter no: -10
sum = 8
```

if (a < 0)
break
-10 < 0 → true

after this statement break;
So loop terminates

Hint:

* When we want to execute so many times (ie) infinite times but terminated using break statement we can use while loop instead of for loop.

Program 2 (using while loop)

```
void main()
{
  int a, sum=0;
  while(1)
  {
    printf("Enter a number:\n");
    scanf("%d", &a);
    if(a<0)
      break;
    sum = sum+a;
  }
  printf("sum=%d\n", sum);
}
```

if(a<0) → true

Case 1

a	sum
1	0
2	1
	3

O/P

```
Enter no: 1
Enter no: 2
Enter no: -5

sum = 3.
```

Hint

* But to break this loop, user must enter a negative number.

CODE 1:

```c
#include <stdio.h>
#include <stdlib.h>
/* 1 - break statement*/
// using for loop, for known number of iterations //
int main()
{
    int a,i,sum=0;
    for(i=1;i<=5;i++)
    {
     printf("Enter number:\n");
     scanf("%d",&a);
     if(a<0)
     break;
     sum=sum+a;
    }
    printf("sum=%d",sum);
    getch();
}

```

```
"D:\1. COMPUTER NOTEBOOK\C LANGUAGE\C PROGRAMS\PART 5_Jennys Lectures\PART 3_JENNYS LECTURE_LOOPS\9_break statem...
Enter number:
1
Enter number:
5
Enter number:
2
Enter number:
0
Enter number:
10
sum=18
Process returned 0 (0x0)   execution time : 14.996 s
Press any key to continue.
```

```
"D:\1. COMPUTER NOTEBOOK\C LANGUAGE\C PROGRAMS\PART 5_Jennys Lectures\PART 3_JENNYS LECTURE
Enter number:
1
Enter number:
5
Enter number:
2
Enter number:
-10
sum=8
```

CODE 2:

```c
#include <stdio.h>
#include <stdlib.h>
/* 2 - break statement*/
// using while loop, for unknown number of iterations //
int main()
{
    int a,sum=0;
    while(1)
    {
     printf("Enter number:\n");
     scanf("%d",&a);
     if(a<0)
     break;
     sum=sum+a;
    }
    printf("sum=%d",sum);
    getch();
}
```

```
"D:\1. COMPUTER NOTEBOOK\C LANGUAGE\C PROGRAMS\PART 5_Jennys Lectures\PART 3_JENNYS LECTUR
Enter number:
1
Enter number:
2
Enter number:
-5
sum=3
```

```
"D:\1. COMPUTER NOTEBOOK\C LANGUAGE\C PROGRAMS\PART 5_Jennys Lectures\PART 3_JENNYS LECT
Enter number:
1
Enter number:
2
Enter number:
3
Enter number:
4
Enter number:
5
Enter number:
6
Enter number:
7
Enter number:
-1
sum=28
```