Homework 3
+
New topic C Programming break and continue Statement

1. break Statement

In C programming, break is used in terminating the loop immediately after it is encountered. The break statement is used with conditional if statement.

Syntax of break statement

```
break;
```

The break statement can be used in terminating all three loops for, while and do...while loops.

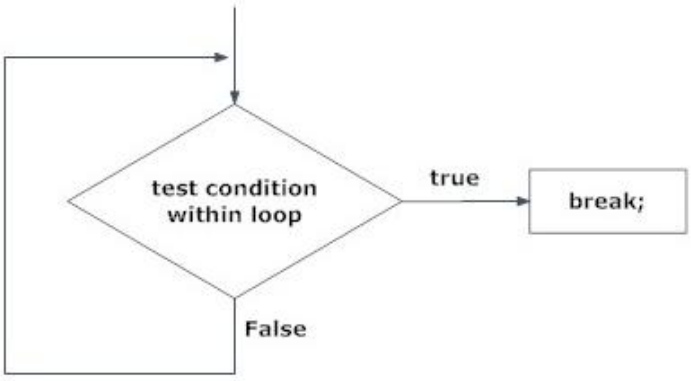
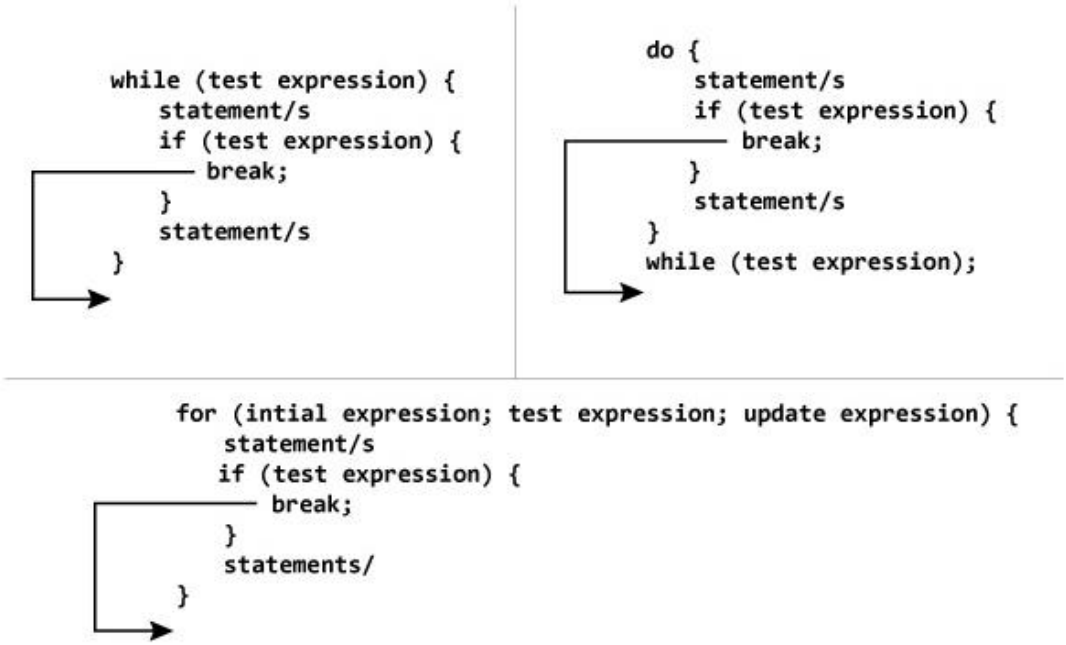


Figure: Flowchart of break statement

The figure below explains the working of break statement in all three type of loops.



NOTE: The break statment may also be used inside body of else statement.

Example of break statement

Write a C program to find average of maximum of n positive numbers entered by user. But, if the input is negative, display the average(excluding the average of negative input) and end the program.

```
/* C program to demonstrate the working of break statement by terminating a
loop, if user inputs negative number*/
# include <stdio.h>
int main(){
   float num,average,sum;
   int i,n;
   printf("Maximum no. of inputs\n");
   scanf("%d",&n);
   for(i=1;i<=n;++i){
       printf("Enter n%d: ",i);
       scanf("%f",&num);
       if(num<0.0)
       break;                    //for loop breaks if num<0.0
```

```
        sum=sum+num;
}
  average=sum/(i-1);
  printf("Average=%.2f",average);
  return 0;
}
```

```
Output

Maximum no. of inputs
4
Enter n1: 1.5
Enter n2: 12.5
Enter n3: 7.2
Enter n4: -1
Average=7.07
```

2. continue Statement

It is sometimes desirable to skip some statements inside the loop. In such cases, continue statements are used.

Syntax of continue Statement

```
continue;
```

Just like break, continue is also used with conditional if statement.

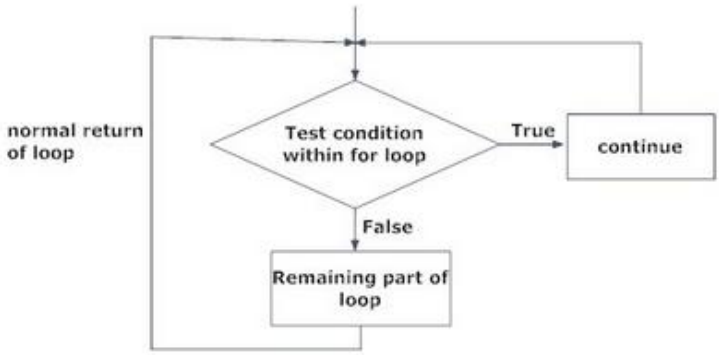


Fig: Flowchart of continue statement

For better understanding of how continue statements works in C programming. Analyze the figure below which bypasses some code/s inside loops using continue statement.

```
while (test expression) {
    statement/s
    if (test expression) {
        continue;
    }
    statement/s
}
```

```
do {
    statement/s
    if (test expression) {
        continue;
    }
    statement/s
}
while (test expression);
```

```
for (intial expression; test expression; update expression) {
    statement/s
    if (test expression) {
        continue;
    }
    statements/
}
```

NOTE: The continue statment may also be used inside body of else statement.

Example of continue statement

Write a C program to find the product of 4 integers entered by a user. If user enters 0 skip it.

```
//program to demonstrate the working of continue statement in C programming
# include <stdio.h>
int main(){
    int i,num,product;
    for(i=1,product=1;i<=4;++i){
        printf("Enter num%d:",i);
        scanf("%d",&num);
        if(num==0)
            continue;  / *In this program, when num equals to zero, it skips
the statement product*=num and continue the loop. */
        product*=num;
}
    printf("product=%d",product);
return 0;
}
```

```
Output

Enter num1:3
Enter num2:0
Enter num3:-5
Enter num4:2
product=-30
```

HW Arrays

EX1: Example of Multidimensional Array In C

Write a C program to find sum of two matrix of order 2*2 using multidimensional arrays where, elements of matrix are entered by user.

```
Ouput

Enter the elements of 1st matrix
Enter a11: 2;
Enter a12: 0.5;
Enter a21: -1.1;
Enter a22: 2;
Enter the elements of 2nd matrix
```

```
Enter b11: 0.2;
Enter b12: 0;
Enter b21: 0.23;
Enter b22: 23;

Sum Of Matrix:
2.2     0.5
-0.9    25.0
```

EX2: C Program to Calculate Average Using Arrays

This program takes n number of element from user(where, n is specified by user), stores data in an array and calculates the average of those numbers.

Output

```
Enter the numbers of data: 6
1. Enter number: 45.3
2. Enter number: 67.5
3. Enter number: -45.6
4. Enter number: 20.34
5. Enter number: 33
6. Enter number: 45.6
Average = 27.69
```

EX3: C Program to Find Transpose of a Matrix

This program asks user to enter a matrix (size of matrix is specified by user) and this program finds the transpose of that matrix and displays it.

```
Output

Enter rows and column of matrix: 2
3

Enter elements of matrix:
Enter elements a11: 1
Enter elements a12: 2
Enter elements a13: 9
Enter elements a21: 0
Enter elements a22: 4
Enter elements a23: 7

Entered Matrix:
1  2  9

0  4  7


Transpose of Matrix:
1  0

2  4

9  7
```

EX4: C Program to Insert an element in an Array

Output of the Program :

```
Enter no of elements : 5

1 2 3 4 5

Enter the element to be inserted : 6

Enter the location : 2

1 6 2 3 4 5
```

EX5: C Program to Search an element in Array

Output :

```
Enter no of elements : 5

11 22 33 44 55

Enter the elements to be searched : 44

Number found at the location = 4
```

HW: Strings

Ex1: C Program to Find the Frequency of Characters in a String

This program asks user to enter a string and a character and this program checks how many times that character is repeated in the string entered by user.

Output

```
Enter a string: This website is awesome.

Enter a character to find frequency: e

Frequency of e = 4
```

EX2: C Program to Find the Length of a String

You can use standard library function strlen() to find the length of a string but, this program computes the length of a string manually without using strlen() funtion.

Output

```
Enter a string: Programiz

Length of string: 9
```

EX3: C Program to Reverse String Without Using Library Function

You can only use library function strlen(),To find the length of the string

Output :

```
Enter the string  : Pritesh
Reverse string is : hsetirP
```