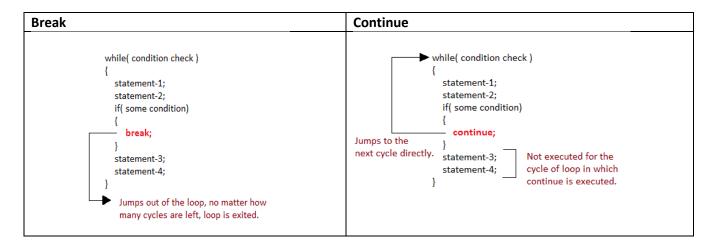


Department of Electrical and Computer Engineering, NSU CSE 115L: Fundamentals of Computer Programming Week 3 (LOOP)

Loop: Loop is generally used for performing a same task, a fixed number of times.

For Loop:	While Loop	<u>Do-while Loop</u>
// same task fixed number of	//10 random number generator	// Taking input only even numbers
times	#include <stdio.h></stdio.h>	#include <stdio.h></stdio.h>
#include <stdio.h></stdio.h>		
	int main()	int main()
int main()	{	{
{	int i=1;	int num;
int i;		
	while(i<=10)	do{
for(i=0; i<5 ; i++)	{	printf("Enter a number:");
{	int num= rand()%10+1;	scanf("%d",#);
<pre>printf("Repeating %d times!\n",i);</pre>	printf("%d. Random number:	
}	%d\n",i,num);	}while(num%2==0);
	i++;	
return 0;	}	return 0;
}		}
	return 0;	
	}	

[NOTES: i++ is the same as i=i+1]



```
Ex-8 break example
                                                       Ex-9 Continue example
#include<stdio.h>
                                                       #include<stdio.h>
int main()
                                                       int main()
  int i:
                                                          int i:
  for(i=10; i>=0; i=i-2)
                                                          for(i=10; i>=0; i--)
    if(i==6)
                                                            if(i==6 | | i==3)
       break;
                                                              continue;
    else
                                                            }
       printf("%d ",i);
                                                            else
                                                              printf("%d",i);
  return 0;
                                                          }
```

Task(10 marks)

- 1. Write a program using while loop that ask the user to about how many number he/she wants to enter. Your task is to take input those many number and calculate their sum.
- 2. Print summation of the following series: $1 + 1/2 + 1/3 + \frac{1}{4} + 1/5 + \dots + 1/n$ where integer n will be input to your program.
- 3. Write a program that calculates the factorial of number N using while loop and prints the value.
- 4. Take an integer n as input from the user. Write a program that displays the Fibonacci series up to n term. In Fibonacci series, the first two numbers are 0 and 1. The remaining numbers are sum of the previous two.

Enter a number: 10 The first 8 Fibonacci numbers are: 0 1 1 2 3 5 8 13 21 34

5. Print the following patterns using nested loop if user input is 5.

Pattern 1:	<u>Pattern 2:</u>
*	5 4 3 2 1
* *	5 4 3 2
* * *	5 4 3
* * * *	5 4
* * * * *	5

HW

- 1. Write a program to find the GCD (Greatest Common Divisor) of two positive integer inputs. Enter two integers: 45 120 GCD: 15
- 2. Write a program that will take a positive integer as input and will display the sum of all the digits as output. If the input is 135, then your program should display 9.