MODULE-2

PPT-3

Looping Techniques

- When looping through dictionaries, the key and corresponding value can be retrieved at the same time using the items() method.

```
knights = {'gallahad': 'the pure', 'robin': 'the brave'}
for k, v in knights.items():
    print(k, v)
```

- When looping through a sequence, the position index and corresponding value can be retrieved at the same time using the enumerate() function.

```
for i, v in enumerate(['tic', 'tac', 'toe']):
    print(i, v)
```

- To loop over two or more sequences at the same time, the entries can be paired with the zip() function.

```
questions = ['name', 'quest', 'favorite color']
answers = ['lancelot', 'the holy grail', 'blue']
for q, a in zip(questions, answers):
    print('What is your {0}?  It is {1}.'.format(q, a))
```

- To loop over a sequence in reverse, first specify the sequence in a forward direction and then call the reversed() function.

```
for i in reversed(range(1, 10, 2)):
    print(i)
```

- To loop over a sequence in sorted order, use the sorted() function which returns a new sorted list while leaving the source unaltered.

```
basket = ['apple', 'orange', 'apple', 'pear', 'orange', 'banana']
for f in sorted(set(basket)):
    print(f)
```

While loop

- The syntax of a while loop in Python programming language is −

```
while expression:
   statement(s)
```

```
count = 0
while (count < 9):
   print 'The count is:', count
   count = count + 1

print "Priyanka"
```

Using else Statement with While Loop

- Python supports to have an else statement associated with a loop statement.
- If the else statement is used with a while loop, the else statement is executed when the condition becomes false.

```
count = 0
while count < 5:
   print count, " is  less than 5"
   count = count + 1
else:
   print count, " is not less than 5"
```

Program to calculate factorial of a number.

```
print "Enter number"
number = input()
fact = 1
if number == 0:
  print 1
else:
  while number>=1:
    fact = fact*number
    number = number-1
  print fact
```

Practice questions

- Write a program to find sum of first and last digit of a number.
- Write a program to find greatest common divisor (GCD) or highest common factor (HCF) of given two numbers.
- Write a program to check whether a number is palindrome or not.
- Write a program to find two's complement of a binary number.
- Write a program to find frequency of each digit in a given integer.
- Write a program to print Pascal triangle upto n rows.