Lecture 5:

Accept 2 strings and swap first two characters of each string.

e.g. Input: str1=dog, str2=dinner

Output: str1=dig, str2=donner

Control flow statements:

C) Repeatitions (Loops):

I) Enumeration controlled: Where number of iterations is already known

II) Logically controlled: Loop termination is depends on some logical condition

a) for loop:

for <loop\_variable> in <iterable-container>

<body of for>

>>> for x in range(10):

... print(x)

...

0

1

2

3

4

5

6

7

8

9

>>>

range() is a built in function to generate list of numbers. e.g. range(10) generates list of numbers from 0 to 9.

range(<start\_index>, <end\_index>, <step\_value>)

e.g. range(1,10) ---> It will generate list from 1 to 10.

"For" loop on a string iterates string character by character.

>>> for x in "India":

... print(x)

...

I

n

d

i

a

>>>

for(i = 0; i< 10000; i++); // This is do nothing loop in C. Also known as "time delay" loop.

Python syntax:

for \_ in range(10000): // Here '\_' is an anonymous variable.

pass // Its a null operation. Nothing executes here.

Nested for loop:

>>> for x in range(3):

... for y in range(2):

... print(x,y)

...

0 0

0 1

1 0

1 1

2 0

2 1

>>>

WAP to accept integer from user and print its table.

b) while loop:

while <condition>:

<body>

>>>

>>> ch=""

>>> while ch!='n':

... print(ch)

... ch=input("Enter string. Enter 'n' to stop: ")

...

Enter string. Enter 'n' to stop: Test

Test

Enter string. Enter 'n' to stop: again

again

Enter string. Enter 'n' to stop: n

>>>

>>>

Based on condition test, loops are categorized as: pre-test, post-test and mid-test.

D) Jump Statements: break, return, continue

- break: To break the current loop

>>> while True:

... i=eval(input("Enter number: "))

... if i==10:

... break;

... print(i)

...

Enter number: 2

2

Enter number: 3

3

Enter number: 4

4

Enter number: 67

67

Enter number: 10

>>>

>>>

- continue: To go to the condition check

>>>

>>> i=0;

>>> while i < 10:

... if (i%2==0):

... i+=1

... continue;

... print(i)

... i+=1

...

1

3

5

7

9

>>>

>>>

-return: It returns the control to caller.

In python, there is provision to add else block to a loop.

Note: The else block just after for/while is executed only when the loop is NOT terminated by a break statement.

WAP to find factorial of a number.

Functions:

'def' is a keyword used to define a function.

e.g. def factorial(number):

body

WAP to find factorial of a number using function.

Rewrite code for previous assignments using function.