WS 6 – Tuples
Attempt the following questions in the class work note book:

1. Why tuples are called immutable types? What are mutable counterparts of tuples? How individual elements of tuples accessed?

2. How do you create the following tuples :
    i. (4,5,6)
    ii. (-2,1,3)
    iii. (-9,-8,-7,-6,-5)
    iv. (0,1,2)

3. If a=(5,4,3,2,1,0) evaluate the following expression :
    i. a[0]
    ii. a[1]
    iii. a[a[0]]
    iv. a[a[-1]]
    v. a[a[a[a[2]+1]]]

4. If a=(1,2,3) , b=(4,5,6) and c=5 evaluate the following statement :
    i. print(a+b)
    ii. print(a*b)
    iii. print(a*c)
    iv. print(a+c)

5. Write the output :
    >>> t=(((('a',1),'b','c'),'d',2),'e',3)
    >>> print(len(t))

6. Write a python code to accept a tuple T of n integers and print the smallest and second smallest element.

7. What will be stored in the variables a,b,c,d,e,f,g,h
    perc=(88,85,80,88,83,86)
    a=perc[2:2]
    b=perc[2:]
    c=perc[:2]
    d=perc[:-2]
    e=perc[-2:]
    f=perc[2:-2]
    g=perc[-2:2]
    h=perc[:]

8. Given a tuple namely cars with car names as elements :
    ('Toyota','Honda','GM','Ford','BMW','Porshe','Ferrai','Mercedes')
    Write a program to print names of the cars in the index range 2 to 6 both

inclusive. The output should also include the index in words as shown below :

| One | Honda |
| Two | GM |

9. Answer the following :
   i. How is an empty tuple created.
   ii. How is a tuple containing just one element created.
   iii. How can you add an extra element to a tuple.
   iv. When will you prefer a tuple over list.
   v. Does the slice operator produce a new tuple

10. Predict the output of the following:

```
Tup1=(1,)*3
Tup1[0]=2
print(Tup1)
Tup2=((1,2),)*7
print(Tup2)
print(len(Tup2[3:8]))
```

11. Predict the output of the following:

```
Tup1=('Rachna Sagar')*2
print(type(Tup1))
print(Tup1)
print(len(Tup1))
```

12. Create the following tuple using a for loop :
    i. A tuple containing squares of the integers 1 to 50.
    ii. The tuple ('a','bb','ccc','dddd') that ends with 26 copies of the letter z.

13. Write a python program that creates a tuple storing first 10 terms of Fibonacci series.

14. How tuples and string are similar?

15. What do you mean by tuple unpacking? Give example