**PYTHON LAB ASSIGNMENT LIST FOR SEE EXAMS**

**Assignment 1**

a.Generate the following pattern for a given value of n. (say n = 4)

1 0 0 0

0 1 0 0

0 0 1 0

0 0 0 1

b Generate the following pattern for a given value of n. (say n = 4)

align = on each line.

1 = 1

1 + 2 = 3

1 + 2 + 3 = 6

1 + 2 + 3 + 4 = 10

c. Validate a given date. Check also for leap year.

d. Generate all perfect squares which are palindromes and so are their square roots less than or equal to given number n.

**Assignment 2**

# data structures

1. Create a list of elements. Use a dict to find the frequency of each element.
2. Remove all empty files in a directory. check os module
3. Generate Pascal triangle. if n = 4, output should be

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

check : str.format for formatting

replication operator to get # of spaces

4 . program to find union ,intersection of given list

**Assignment 3**

1. Find the 5 biggest files in the directory /bin. Store the result in a list. Sort the list.

2. Given a file containing names of the state, create a file for each state. A sample file is content is given below :

karnataka:bangalore

kerala:trivandrum

kerala:munnar

tamilnad:chennai

karnataka:mysore

kerala:tekkadi

tamilnad:madurai

karnataka:hubli

kerala:kochi

tamilnad:salem

karnataka:mangalore

Hint: walk thro the file. create a dict whose key is the state name and value is the file handle. Do close all the files at the end of processing.

3 Program to find biggest file in the directory

**Assignment 4**

1. write a function to check whether a given number is prime or not. Use this function to find all prime numbers in a given range.

2. write a function which gets # of strings using variable # of arguments and returns a list of strings which are palindromes.

**Assignment 5**

1. Write a program to find all numbers which are odd and which are palindromes between a pair of numbers. Use list comprehension.

2. Write a function which takes two arguments say a and b. Decorate to check whether a is less than b.

**Assignment 6**

1. create a module MyMath.py which contains functions to compute

i) area of a sphere given the radius

ii) volume of a sphere given the radius

iii) radius of a sphere given the volume

Test these functions in the module. Write a client program to use these functions by importing.

2. create a class to represent city which contains a list of places to see.

* provide methods to create the object with just the city name.
* provide methods to add a place of visit, to remove place of visit,
* to display all places of visit.

3. create a class called MyStack which supports push and pop operations.

**Assignment 7**

1.write a program whether a given character occurs again in the same

string anywhere in the string.

2. Walk through this given string and find all tags.

<test>

<sub>PAP</sub>

<date>

<dd>30</dd>

<mm>9</mm>

<yy>2013</yy>

</date>

</test>

**Assignment 8**

Experiments with ply

a) find the # of occurrences of keywords IF DO THEN ENDDO ENDIF.

b) tokenize the following as follows:

a --- b => (a, ID) (--, OP) (-, OP) (b, ID)

a << b => (a, ID) (<<, OP) (b, ID)

a < b - c => (a, ID) (< , OP) (b, ID) (-, op) (c, ID)

**Assignment 9**

Experiment with database

create a table which has name and date of birth of a person.

a) Write a program to read the name and date of birth from the keyboard and insert into the table.

b) Write a program to display the name and the age of the person.

hint: check datadiff and curdate functions of mysql

c) Write a program to find all persons whose birth day falls in a given month.

hint: use month(dob) to get the month

**Assignment 10**

threads and multiprocessing:

1. write a program to sum the elements of an array(list) using 4 threads.

Let each thread add quarter of the array. Assume that the size of

the array is a multiple of 4.

2. repeat problem 1 using multitheading module.

3. repeat problem 1 using multiprocessing module.

**Assignment 11**

1. Write a program which generates an HTML form which reads two numbers and calls another program (as part of action) which displays the numbers and their sum.

2. Write a graphic based program to add two numbers and display the result.