Lab Assignment No. 1
UCS411 (Artificial Intelligence)

1	Find the sum of the series ($1 + x + x^2/2! + \ldots + x^n/n!$). Number x and n should be entered at run time.
2	WAP to create a list of 100 random numbers between 100 and 900. Count and print the: (i) All odd numbers (ii) All even numbers (iii) All prime numbers
3	Find the prime numbers between two given numbers.
4	Find the common elements from two lists.
5	Print the leap years between any two years. The limit of the years should be entered at execution time.
6	Write a Python Program to input basic salary of an employee and calculate its Gross salary according to following: Basic Salary <= 10000 : HRA = 20%, DA = 80% Basic Salary <= 20000 : HRA = 25%, DA = 90% Basic Salary > 20000 : HRA = 30%, DA = 95%.
7	Write a Python program to check the validity of password input by users. **Validation:** • At least 1 letter between [a-z] and 1 letter between [A-Z]. • At least 1 number between [0-9]. • At least 1 character from [$#@]. • Minimum length 6 characters. • Maximum length 16 characters.
8	Create a List L having data as= [10, 20, 30, 40, 50, 60, 70, 80]. (i) WAP to add 200 and 300 to L. (ii) WAP to remove 10 and 30 from L. (iii) WAP to sort L in ascending order. (iv) WAP to sort L in descending order.
9	D is a dictionary defined as D= {1:"One", 2:"Two", 3:"Three", 4: "Four", 5:"Five"}. (i) WAP to add new entry in D; key=6 and value is "Six" (ii) WAP to remove key=2. (iii) WAP to check if 6 key is present in D. (iv) WAP to count the number of elements present in D. (v) WAP to add all the values present in D.
10	(i) Write a function which takes principal amount, interest rate and time. This function returns compound interest. Call this function to print the output. (ii) Save this function (as a module) in a python file and call it in another python file.