Objective:
Here you are expected to differentiate / compare two imperative programming language namely C and Python with respect to Compilation, Simplicity, Readability, and Writability.

To open and run your Python program follow the steps given below:

Step1: Start-> All Programs-> Python 3.4-> IDLE (python GUI)
Step 2: New File-> Create a directory -> Give file name (make sure it is saved with extension **.py**-> type your program.
Step 3: To run your program press F5.

Program 1: Write Hello World program in C and Python

cProgram.c	pythonProgram.py

#include<stdio.h>
int main()
{
printf("Hello World!");
}
	print ("Hello World!");

Program 2: Write a program in C and Python to concatenate two strings "BITS" and "PILANI".

cProgram.c	pythonProgram.py

#include<stdio.h>
int main()
{
//Write your program here
}
	name = "BITS"
	place = "PILANI"
	Institute = name + place;
	print Institute

Program 3: Write a program in C and Python to concatenate two strings "BITS" and "PILANI".

cProgram.c	pythonProgram.py

#include<stdio.h>
int main()
{
//Write your program here
}
	strn =input("Please enter a string: ")
	print ("You typed " + strn)

Type **strn*3** on the command promt and see what see what will happen.

Program 4: Swap two numbers

cProgram.c	pythonProgram.py

#include<stdio.h>
int main()
{
//Write your program here
}
	m=5
	n= 6
	n,m=m,n

Program 5: Operations on List / Arrays

There are several fundamental operations on a list.

- accessing items in a list.
- modifying items, including adding or removing them.
- finding specific items in a list.

C Program	Python Program

#include<stdio.h>
int main()
{
//Write your program here
 	
}
	Accessing single item from list by indexing
	Accessing multiple item by slicing
	Setting the value of single item in the list
	Setting the value of a range of item in the list
	`>>>numbers = [1,2,3,4,5,6,7,8,9,10]`
	`>>> numbers[3:6]`
	`>>> [4,5,6]`
	`>>>numbers[3:6] = [14,15,16]`
	`>>> numbers`
	`[1,2,3,14,15,16,7,8,9,10]`
	Appending to a list
	`>>> numbers.append(11)`
	`>>> numbers`
	`[1,2,3,4,5,6,7,8,9,10,11]`
	
	Try with negative indexing
	
	numbers[-4]
	
	Creating lists with consecutive integer values
	
	The built-in **range** function will create (initialize) lists filled with integers in numerical order.
	
	`>>> range(10)`
	`>>> range(3,12)`
	`>>> range(-10,2)`
	`>>> range(0,10,2)`
	`>>> range(11,1,-2)`

Note: In python 3.4 output of range function should be converted to list type explicitly as shown below.

```
m =list(range(30));
```

Program 6

Iterations in C and Python

Write C and Python to print letter by letter in the string "BITS-PILANI"

C Program	Python Program

#include<stdio.h>
int main()
{
//Write your program here
 	
}
	`for letter in 'BITS-PILANI':`
	`  print('Current Letter :', letter);`

Program 7:

Write a C and Python program to create the list called fruits= ['banana','apple','grapes','orange'] and display fruit by fruit.

C Program	Python Program

#include<stdio.h>
int main()
{
//Write your program here
 	
}
	`fruits = ['banana', 'apple',  'grapes','orange']`
	`for fruit in fruits:`
	`  print ('Current fruit :', fruit)`

	`fruits = ['banana', 'apple',  'grapes','orange']`
	`for index in range(len(fruits)):`
	`  print ('Current fruit :', fruits[index])`

Program 8

Write C and Python Program to perform Bubble sort on a list of integer. Modify the program to work with float and character type.

Note: Since python follow implicit typing, you need to change the values alone. But you need to rewrite whole program or explicitly change the type of list in C Language

C Program	Python Program

#include<stdio.h>
int main()
{
//Write your program here
 	
}
	`my_list = [12,5,8,16,65,10]`
	
	`def bubble(bad_list):`
	`  length = len(bad_list) - 1`
	`  sorted = False`
	
	`  while not sorted:`
	`  sorted = True`
	`  for i in range(length):`
	`  if bad_list[i] > bad_list[i+1]:`
	`  sorted = False`
	`  bad_list[i], bad_list[i+1] =`
	`bad_list[i+1], bad_list[i]`
	
	`bubble(my_list)`
	`print (my_list)`

Program 9:

Write Python function to swap two number. Modify it to work for char type.

Note: Individual values are passed by value.

Program 10

Write C and Python Program to perform search an element in the array/ list of integers.
Modify the program to work with float and character type.

Program 11

Write C and Python program to perform addition, subtraction , multiplication and division of complex number. Note: you can create complex numbers using in built function complex (real,imag);

Example: m = complex(2,5);

```
>> m
   (2+5j);
```