

**E) Find 3 differences between a compiler and an interpreter.**

<b>BASIS FOR COMPARISON</b>	<b>COMPILER</b>	<b>INTERPRETER</b>
Input	It takes an entire program at a time.	It takes a single line of code or instruction at a time.
Output	It generates intermediate object code.	It does not produce any intermediate object code.
Working mechanism	The compilation is done before execution.	Compilation and execution take place simultaneously.

## **F) Find the difference between Python 2 and 3?**

### Python 2

print functional brackets optional.

Prefix string with u to make unicode string.

Division of integers always return integer –  $5/2=2$ .

Raw\_input () reads string.

input() evaluates data read.

generator .next().

### Python 3

print functional brackets compulsory.

String unicode by default.

Division of integers may result in float –  $5/2=2.5$ .

Raw\_input() not available.

Input always reads string.

Next (generator).

Py2 to py3 utility.

Dictionary .keys() and .values() returns a view not a list.

Can no longer use comparison operators on non natural comparisons.

Eg. None < None will raise a TypeError instead of returning false.

Percent (%) string formatting operator is deprecated use the .format()

Function or concatenation.

## G) What is ASCII and UTF-8?

### ASCII

In ASCII, every letter, digits, and symbols that mattered (a-z, A-Z, 0–9, +, -, /, “, ! etc.) were represented as a number between 32 and 127.

ASCII uses 7 bits to represent a character. By using 7 bits, we can have a maximum of  $2^7$  (= 128) distinct combinations. Which means that we can represent 128 characters maximum.

### UTF-8

In UTF-8, every code-point from 0–127 is stored in a single byte. Code points above 128 are stored using 2, 3, and in fact, up to 6 bytes.

We would have needed an entirely new character set... that's the rational behind Unicode. Unicode doesn't contain every character from every language, but it sure contains a gigantic amount of characters