

(Question E)

Interpreter	Compiler
Translates program one statement at a time.	Scans the entire program and translates it as a whole into machine code.
It takes less amount of time to analyze the source code but the overall execution time is slower.	It takes large amount of time to analyze the source code but the overall execution time is comparatively faster.
No intermediate object code is generated, hence are memory efficient.	Generates intermediate object code which further requires linking, hence requires more memory.
Continues translating the program until the first error is met, in which case it stops. Hence debugging is easy.	It generates the error message only after scanning the whole program. Hence debugging is comparatively hard.
Programming language like Python, Ruby use interpreters.	Programming language like C, C++ use compilers.

(Question G)

ASCII:

- It is a character encoding standard for electronic communication.
- ASCII code is the numerical representation of a character such as 'a' or '@' or an action of some sort.
- It includes descriptions of the first 32 non-printing characters.
- It was actually designed for use with teletypes and so the descriptions are somewhat obscure.

#### UTF-8:

- It is a method for encoding Unicode characters using 8-bit sequences.
- It is a variable width character encoding capable of encoding all 1,112,064 valid code points in Unicode using one to four 8-bit bytes.
- It is backwards compatible with ASCII. UTF-8 is the preferred encoding for e-mail and web pages

(Question F)



# PYTHON 2 vs 3

## 2018 DIFFERENCES

### PYTHON 2

### PYTHON 3

#### ← Legacy

It is still entrenched in the software at certain companies



#### Library

Many older libraries built for Python 2 are not forwards-compatible

0100  
0001

#### ASCII

Strings are stored as ASCII by default



$$5/2=2$$

It rounds your calculation down to the nearest whole number

`print "hello"`

Python 2 print statement



#### Future →

It will take over Python 2 by 2020



#### Library



Many of today's developers are creating libraries strictly for use with Python 3



#### Unicode

0000  
0000  
0100  
0001

Text strings are Unicode by default



$$5/2=2.5$$

The expression 5 / 2 will return the expected result



`print ("hello")`

The print statement has been replaced with a print () function



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