**ASSIGNMENT 1**

**Q1. What is JPython & CPython?**

**Solution: Jython**, which started as **JPython** and was later renamed, is the JVM implementation of the Python programming language. It is designed to run on the Java platform. A Jython program can import and use any Java class. Just as Java, Jython program compiles to bytecode. One of the main advantages is that a user interface designed in Python can use GUI elements of AWT, Swing or SWT Package.

**CPython** can be defined as both an [interpreter](https://en.wikipedia.org/wiki/Interpreter_(computing)) and a [compiler](https://en.wikipedia.org/wiki/Compiler) as it compiles Python code into [bytecode](https://en.wikipedia.org/wiki/Bytecode) before interpreting it. It has a [foreign function interface](https://en.wikipedia.org/wiki/Foreign_function_interface) with several languages including C, in which one must explicitly write [bindings](https://en.wikipedia.org/wiki/Language_binding) in a language other than Python.

**Q2. What is the basic difference between Python2 & python3?**

**Solution:**

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| **Basis of Comparison** | **Python2** | **Python3** |
| **Function print** | print(“hello”) | print”hello” |
| **Division of integers** | Whenever 2 integers are divided, you get a float value | When two integers are divided you always provide integer value |
| **Unicode** | Default storing of stringsis Unicode | To store Unicode string value, you require to define them with ‘u’ |
| **Leak of variables** | Value of variables never change | Value of global variable will change while using it inside for loop |
| **Exception handling** | Exceptions to be enclosed in parenthesis | Exceptions to be enclosed in notations |
| **Rules of ordering comparisons** | Rules are simplified | Rules are very complex |
| **Iteration** | The new Range() function introduced to perform iterations. | xrange() function is used for iterations. |
| **Syntax** | Simpler and easily understandable | Comparatively difficult to understand. |

**Q3. Difference between ASCII & Unicode.**

**Solution:**

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| **ASCII** | **UNICODE** |
| **ASCII**is a character-encoding scheme and it was the first character encoding standard. | Unicode is a universal international standard character encoding that is capable of representing most of the world's written languages. |
| ASCII usually represents lowercase letters and uppercase letters, digits and symbols | Unicode represents all letters of Arabic, English, and other languages. |
| ASCII defines 128 characters, which map to the numbers 0–127. | Unicode defines (less than) 221characters, which, similarly, map to numbers 0–221 |
| ASCII uses 7 bits to represent a character. | It assigns each character a unique number, or code point. |
| Requires less space | Requires more space |