**ASSIGNMENT OF PYTHON SESSION #1**

Q. 1. Difference between ASCII format and Unicode format.

Ans. **ASCII –**

* Stands for American Standard Code for Information Interchange.
* It encodes 128 characters. It includes English letters, numbers from 0 to 9 and a few other symbols.
* ASCII uses 7 bits to represent a character.

**Unicode –**

* Stands for Universal code.
* Unicode covers a large number of characters than ASCII. It represents most written languages in the world. Unicode is a superset of ASCII.
* Unicode uses 8 bits, 16 bits or 32 bits depending on the encoding type.
* The Unicode requires more space than ASCII.

Q. 2. What is JPython & CPython?

Ans. **CPython –**

It is the most widely used interpreter in Python, developed in C and python, the bindings for the interpreter must be written in a foreign language other than Python. CPython uses a Global Interpreter Lock (GIL) on each process thus python bytecode for a single process is executed on a single thread.

This interpreter is not suitable for CPU intensive algorithms. CPython finds its use as many libraries are C optimized i.e. many libraries will run its processes faster in a C based code. Also, python is a dynamic programming language as it allocates the resources on the go not considering future consequences.

However, when the same code is defined for CPython based compiler systems the type definition is taken into consideration. The steps of compilation are: Decoding, Tokenizing, Parsing, AST(Abstract Syntax Tree), Compiling.

**Jython or JPython –**

Jython is an implementation that has been designed for the seamless integration of Python code over Java virtual machine, the advantage of this integration is that it provides an opportunity for amalgamation of a popular scripting language like python to a vast library of the Java virtual machine. Jython compiles files to .class extensions.

The Jython programs can inherit and run any Java class and compile the code to bytecode. Along with this Jython can be used to implement any Java-based packages especially desirable for creating solutions using Servlets, Swing, SWT, and AWT packages. Jython was created in 1997 by Jim Hugunin. Jython uses the Global interpreter lock (GIL) like CPython.

Q. 3. Basic difference between Python2 & python3.

Ans.

* Python 3 syntax is simpler and easily understandable whereas Python 2 syntax is comparatively difficult to understand.
* Python 3 default storing of strings is Unicode whereas Python 2 stores need to define Unicode string value with "u."
* Python 3 value of variables never changes whereas in Python 2 value of the global variable will be changed while using it inside for-loop.
* Python 3 exceptions should be enclosed in parenthesis while Python 2 exceptions should be enclosed in notations.
* Python 3 rules of ordering comparisons are simplified whereas Python 2 rules of ordering comparison are complex.
* Python 3 offers Range() function to perform iterations whereas, In Python 2, the xrange() is used for iterations.