CS112 – Programming Fundamentals

Weekly Assignment for Learning and Improvement

Lecture 2-3

**Q1: Write few applications of using Python programming?**

A: There are many practical applications of Python Programming. Some of them are listed below.

**GUI-Based Desktop Applications:**

Python has simple syntax, modular architecture, rich text processing tools and the ability to work on multiple operating systems which make it a desirable choice for developing desktop-based applications. There are various GUI toolkits like wxPython, PyQt or PyGtk available which help developers create highly functional Graphical User Interface (GUI).

### Web Frameworks and Web Applications:

Python has been used to create a variety of web-frameworks including CherryPy, Django, TurboGears, Bottle, Flask etc. These frameworks provide standard libraries and modules which simplify tasks related to content management, interaction with database and interfacing with different internet protocols such as HTTP, SMTP, XML-RPC, FTP and POP. Google App engine is one of the popular web applications based on Python.

### Enterprise and Business Applications:

With features that include special libraries, extensibility, scalability and easily readable syntax, Python is a suitable coding language for customizing larger applications. Reddit, which was originally written in Common Lips, was rewritten in Python in 2005. Python also contributed in a large part to functionality in YouTube.

**Operating Systems:**

Python is often an integral part of Linux distributions. For instance, Ubuntu’s Ubiquity Installer, and Fedora’s and Red Hat Enterprise Linux’s Anaconda Installer are written in Python.

### Language Development:

Python’s design and module architecture has influenced development of numerous languages. Boo language uses an object model, syntax and indentation, similar to Python. Further, syntax of languages like Apple’s Swift, CoffeeScript, Cobra, and OCaml all share similarity with Python.

### Prototyping:

Besides being quick and easy to learn, the agility, extensibility and scalability and ease of refactoring code associated with Python allow faster development from initial prototype structures.

**Q2: What are the main steps you should consider when writing the coding?**

Ans: The general steps for writing a program include the following:

* Understand the problem you are trying to solve
* Design a solution
* Draw a flow chart
* Write algorithm code
* Write code
* Test and debug
* Test with real-world users
* Release program
* Iterate the steps for the next version

**Q3: Can you write an algorithm for finding the resistance of 3 resistors connected in parallel circuit?**

**Algorithm:**

Input r1 = Enter Resistance 1

Input r2 = Enter Resistance 2

Input r3 = Enter Resistance 3

Total resistance = 1/( (1/r1)+(1/r2)+(1/r3) )

Print Total resistance

**Q4: How many ways you have learned to code python?**

Ans: Only One which is instructed by the teacher.