PYTHON APPLICATION PROGRAMMING

Course Objectives:

The objective(s) of this course is:

- • Explore Python's object-oriented features.
- Learn to use Standard Libraries in Python.
- Search text using regular expressions.
- Develop functional and reliable applications

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Course Outcomes: At the end of the course, the student will be able to:

- Understand beneath the hood workings of Python
- Understand and use Standard Libraries in Python
- Develop Industry Strength Applications in Python

Course Content:

1. **Classes, Objects and Design Patterns**: Class definition syntax, Class Objects, Instance Objects, Method Objects, Inheritance, Private Variables, Iterators,Closures, Generators. Design Patterns - Singleton, Facade, Observer ,Adapter. **6 Hrs**

2. **Regular Expressions** : Finding Patterns in Text ,Compiling Expressions, Multiple Matches,Pattern Syntax,Constraining the Search,Dissecting Matches with Groups,Search Options. Modifying Strings with Patterns,Splitting with Patterns. **6 Hrs**

3.**Multithreading, Multiprocessing** : threads, IPC, parallel processes, locks, mutex, semaphores. **6 Hrs**

4. **DataBase Programming:** connection and cursor objects, Sqlite, Sqlalchemy. **5 Hrs**

5. **Networking :** sockets - TCP and UDP. **5 Hrs**

Pre-requisite

Courses):

1.UE18CS101 – Introduction to computing using Python
2.UE18CS252 – Database Management Systems

Also:
UE18CS301 – Computer Networks should be running parallel to this course

Reference Books:

1. The Python 3 Standard Library by Example - Dough Hellman - ISBN-10: 0134291050 – Addison-Wesley.
2. Core Python Applications Programming, 3rd Edition – Wesley Chun - ISBN-10: 0132678209 – Prentice Hall.