CAP460:FUNDAMENTALS OF PYTHON

L:2 T:0 P:4   Credits:4

Course Outcomes: Through this course students should be able to

CO1 :: define the python syntax and semantics of control flow statements

CO2 :: understand the working of strings, functions and files

CO3 :: apply various operations on data structures like lists, tuples, dictionaries and sets for problem solving

CO4 :: analyze the unexpected situations and manage them using appropriate exception handling mechanism

Unit I

Introduction to python : installation, working with python, basic syntax, variables, blocks, applications of python

Data types and operators : declaring and using numeric data types: int, float, complex, python basic operators, use of sequence data types

Unit II

Program flow control : conditional blocks using if, else and elif, simple for loops in python, use of while loops in python, loop manipulation using pass, continue, break and else

String handling : accessing strings, string length, string traversal, string comparison, find function, for loop using string

Unit III

Lists : accessing lists, operations on list, slices, deletion, for loop using list, functions and methods

Tuples : accessing tuples, operations on tuple, working with tuple functions and methods

Unit IV

Dictionaries : accessing values in dictionaries, working with dictionaries, properties, functions, for loop using dictionaries

Sets : access set items, add set items, remove set items, looping on sets, join sets, set methods

Unit V

Functions : defining a function, calling a function, types of functions, function arguments

File handling : printing on console, reading data from keyboard, text and binary files, opening and closing file, reading and writing files

Unit VI

Exception handling : exception, exception handling, except clause, multiple except with single try, nested of try, try and finally clause, user defined exceptions

List of Practicals / Experiments:

Programs on
- data types and operators
- program flow control
- strings
- lists
- tuples
- dictionaries
- sets
- functions
- file handling
- exception handling

Text Books: 1. PROGRAMMING AND PROBLEM SOLVING WITH PYTHON by ASHOK KAMTHANE, AMIT ASHOK KAMTHANE, MC GRAW HILL

References: 1. PYTHON: THE COMPLETE REFERENCE by MARTIN C. BROWN, MC GRAW HILL