



Vidyavardhaka College of Engineering

Gokulam III stage, Mysuru – 570 002

Autonomous Institute under Visvesvaraya Technological University (VTU)

Accredited by NBA (2020- 2023) & NAAC with 'A' Grade (2018 - 2023)

Semester – III		
Course Name	: Python Programming Laboratory	Course Code : 20CS38
No. of Lecture Hours / Week	: 01	CIE Marks : 50
No. of Tutorial / Practical Hours / Week	: 02	SEE Marks : 50
Total No. of Lecture + Tutorial / Practical Hours	: 32	SEE Duration : 03 hr.
L:T:P	: 1:0:2	Credits : 02
Course Overview The laboratory course Python Application Programming aims to introduce the students about the basics of writing and running python scripts. The students will be able to enhance their analyzing and problem-solving skills by implementing suitable functionality using core data structures like lists, dictionaries, tuples and sets in Python to store and process the data.		
Course Learning Objectives (CLO) The course should enable the students to <ul style="list-style-type: none">• Learn the syntax and semantics of Python• Interpret the use of procedural statements like assignments, conditional statements, loops and function calls• Demonstrate the use of built-in functions• Infer the supported data structures like list, dictionaries and tuples in Python		
Part – A		
<ol style="list-style-type: none">1. Develop a Python program to<ol style="list-style-type: none">a) Calculate the sum of digits of an input number & repeat it until you get single digit. If resultant sum is equal to 1 then print it as a Magic number.b) Print all prime numbers smaller than or equal to a specified number.2. Design a Python program to implement the Rock-Paper-Scissor game.3. Develop a Python program to<ol style="list-style-type: none">a) Extract substring present between @ and #.b) Count occurrence of character 'e' in a string without using built-in method.c) Remove the word "the" present in a string without using replace() method.d) Count the total number of apples bought by the guests in the given dictionary AllGuests = {'Alice': {'apples': 5, 'pretzels': 12}, 'Bob': {'ham sandwiches': 3, 'apples': 2}, 'Carol': {'cups': 3, 'apple pies': 1}}4. Develop a Python program to<ol style="list-style-type: none">a) Accept a string and display the string in reverse order. The displayed string must contain all characters at the even position of accepted string ignoring the blank spaces.b) Print all ';' separated email IDs present in a string without using List.		



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- c) Count the occurrence of all the characters in the string.
5. Develop a Python program to implement the Hangman Game (guessing game) for two or more players. One player thinks of a word, phrase or sentence and the other(s) tries to guess it by suggesting letters or numbers, within a certain number of guesses.
6. Develop a Python program to
- Print all words present in a string along with their length and total words present in the string.
 - Display first 'n' Fibonacci numbers in reverse order.
7. Design a Python program using Regular expressions to
- Extract Email IDs from a given text.
 - Validate the user password with minimum length=6 and maximum length=16 and must have at least one lower-case letter, upper-case letter, number and special symbol (#, @, \$, _).
8. Perform the following file operations using Python program:
- Traverse a path and display all the files and subdirectories in each level till the deepest level for a given path. Also, display the total number of files and subdirectories.
 - Read a file content and copy only the contents at odd lines into a new file.
9. Develop an application using 'tkinter' package to randomly assign program numbers for students and store the assigned details in a CSV file.
10. Create an Interactive Dictionary Application in Python by reading the external JSON file which contains words and different meanings associated with it. Program will ask the user for a word and returns the meaning for the user given word from the JSON file, if the actual meaning is not available for the user given word, the program should through suggestion to user by analyzing the word to check if a user somehow mistypes the word and meant something else.

Part B

Open-Ended Experiments: The student can choose to solve any one open-ended problem to illustrate python application in the domains specified below (but not restricted to) using various python packages

- Excel file handling
- PDF/word file manipulation
- CSV file analysis
- Web scraping
- Chabot
- Image processing
- Database Management
- Network Programming
- GUI development for python application
- Simple Games



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Experiment Weightage

Type of Experiment	Program-No	Weightage
Demonstration	1, 3	18%
Exercise	2,4,5,6	36%
Structured Enquiry	7,8,9,10	36%
Open ended	-	10%

Course Outcomes (COs)

At the end of the course, students will be able to

CO1	Demonstrate the usage of Python language constructs
CO2	Design and Develop Python programs using data structures like lists, dictionaries, tuples and sets
CO3	Employ various IDEs and packages for the development of python application for the given problem

CO – PO – PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2												2		
CO2			3										3		
CO3					2								1		
Avg.	2		3		2								2		