Roll No. _____ **USN:**_____

Karnatak Law Society's

GOGTE INSTITUTE OF TECHNOLOGY

UDYAMBAG, BELAGAVI-590008

Laboratory Record

Academic year 2025 - 26

Name: _____ **Semester:** Ist **Div: A**

Program: Master of Computer Applications

Title of the Lab Course: PYTHON PROGRAMMING (I)

Lab Course Code: MMC101

Marks Scored (Maximum 40 marks): _____

Marks Scored in words :_____

Signature of Student **Signature of faculty member**

Institute Vision

Gogte Institute of Technology shall stand out as an institute of Excellence in technical education and in training the individuals for outstanding caliber, character coupled with creativity and entrepreneurial skills.

Institute Mission

To train the students to become quality engineers with high standards of professionalism and ethics who have positive attitude, a perfect blend of Techno-Managerial skills and problem solving ability with an analytical and innovative mindset.

Department Mission

To train the graduates to become IT professionals having strong fundamental knowledge in the field of computer application with ethical values to meet increasing global challenges of ever evolving technologies.

Department Vision

The department of Master of Computer Applications shall strive to stand out as par excellence in generating and grooming, technically competent and skilled intellectual professionals to meet the challenges of the modern computing industry.

COURSE OUTCOMES (COs)

CO1.	
CO2.	
CO3.	
CO4.	

PROGRAM OUTCOMES (POs)

PO1.	
PO3.	
PO5.	

Note : You have to write the below details in the above table.

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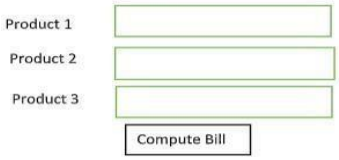
Course Outcomes

1.	Explain core elements of Python Programming and key features of Object Oriented Programming
2.	Build applications for problem solving using core and object oriented concepts of python programming
3.	Utilize NumPy, pandas, Matplotlib, and GUI library (Tkinter) for efficient data manipulation, analysis, visualization, and user interface design.
4.	Analyze the problem to determine the operations and constraints and choose the right data structure & other programming elements that best meets these requirements for implementation

PO Number	PROGRAM OUTCOMES (POs)
1	(Foundation Knowledge): Apply knowledge of mathematics, programming logic and coding fundamentals for solution architecture and problem solving.
3	(Development of Solutions): Design, develop and investigate problems with as an innovative approach for solutions incorporating ESG/SDG goals.
5	(Individual and Teamwork): Function and communicate effectively as an individual or a team leader in diverse and multidisciplinary groups. Use methodologies such as agile.

Index Sheet

Expt. No.	Date	Title of the Experiment	Write up (Max Marks 5)	Faculty Signature
1.		Create a Python program that manages a dictionary of words and their meanings. The program should provide the following options for the user: 1. .Add a new word – Allow the user to add a word along with its meaning. 2. Find the meaning of a word – Let the user search for a word and display its meaning if it exists. 3. Display the dictionary – Show all words along with their meanings. 4. Delete a word – Remove a word from the dictionary. 5. Modify the meaning of a word – Update the meaning of an existing word. 6. Quit – Exit the program. The program should continue running until the user chooses to quit.		
2.		Write a menu-driven Python program that performs various number-related operations. The program should use a user-defined function for each task and provide the following options: 1. Check if a number is prime 2. Find the factorial of a number 3. Check whether a number is even or odd 4. Check whether a number is a perfect number 5. Exit the program The program should continuously display the menu and execute the chosen option until the user decides to exit.		
3.		Create a table to store the population and land area of the Karnataka state sume data) 1. Create a new database called census.db. 2. Make a database table called Density that will hold the name of the district (TEXT), the population (INTEGER), and the land area (REAL). 3. Insert data into the table. 4. Display the contents of the table. 5. Display the populations. 6. Display the districts that have populations of less than 1 million. 7. Display the districts that have populations less than 1 million or greater than 5 million. 8. Display the districts that do not have populations less than 1 million or greater than 5 million. 9. Display the populations of districts that have a land area greater than 200,000 square kilometers. 10. Display the districts along with their population densities (population divided by land area).		
4.		Create a Python program to simulate a bank account system with the following functionalities: 1. Create Account 2. Deposit Money 3. Withdraw Money 4. Check Balance 5. Display Account Details 6. Exit Implement a menu where users can select options to perform these tasks. The program should continue running until the user chooses to exit.		

5.		Write a Python program to demonstrate operator overloading by overloading the + operator to add two objects of a class Distance.		
6.		Create a GUI application using Tkinter to design the following form and perform the actions mentioned below.  ● Price of Product1=Rs.500/unit ● Price of Product2=Rs.50/unit upto 50 units, otherwise it is Rs.45 ● Price of Product3=Rs.100/unit and minimum quantity to buy is 10 units ● When the Compute Bill button is clicked, the final billing amount should be displayed.		
7.		Create a Python program for the following exercises by using Numpy and pandas. ● Create an identity matrix. ● Find the square root of each element in an array. ● Sort an array. ● Square each element in an array. ● Take logs of each element in an array. ● Create an array of zeros. Create an array of ones. ● Find the mean of array. ● Create two data frames and merge them.		
8.		Create the following plots by using Matplotlib. ● Line plot ● Histogram ● Bar Chart ● Scatter plot ● Pie charts		
		Average [Max. Marks: 5]		
		OBE Activity [Max. Marks: 5]		
		Lab IA Test [Max. Marks: 30]		
		Total [Max. Marks: 40]		