RAMAIAH Institute of Technology

Department of Computer Science & Engineering

Subject Code: CSL48 **TERM:15.04.2024 – 27.07.2024**

Subject Name: Data Visualisation with Python **Faculty In-charge:** Darshana A Naik

Credits: 0:0:1 **SEMESTER :** IV

SL. No.	QUESTIONS	CO	PO
1.	a. Write a python program to read 2 numbers from the keyboard and perform the basic arithmetic operations based on the choice. (1-Add, 2-Subtract, 3-Multiply, 4-Divide)	1	2,3,5
	b. Write a python program to create a list of tuples having first element as the strings and the second element as the length of the string. Output the list of tuples sorted based on the length of the string.	1	2,3,5
2.	a. Write a python program to display all the prime numbers in the given range.	1	1,2,3,5
	b. Write a python program to create a list with all the subject names of the 4th semester and perform the following operations. • Display the list using for loop. • Display 2nd and 5th element of the list. • Display first 4 elements of the list using the range of indexes. • Display last 4 elements of the list using the range of negative indexes. • Display if "Python Programming Lab" is available in the List or not. • Demonstrate the working of append () and insert () function. • Demonstrate the working of remove() and pop() function.	1	2,3,5
3.	a. Create a dictionary for words and their meanings. Write functions to add a new entry (word: meaning), search for a particular word and retrieve meaning, given meaning find words with same meaning, remove an entry, display all words sorted alphabetically. [Program must be menu driven].	3	2,3,5
	b. Write a python program to perform the following operations using user defined functions • Display the maximum and minimum number from the array. • Display the second largest number from the array without sorting	3	1,2,3,5
4.	a. Write a python program to initialize a dictionary of usernames and passwords associated with it.passwd={'rahul': 'genius', 'kumar': 'smart', 'ankita': 'intelligent'} perform the following functions: • To print all the items in the dictionary. • To print all the keys in the dictionary. • To print all the values in the dictionary.	1	2,3,5

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	• To get the passwords of users. For example, passwd['rahul']= genius • e) Change the password of a particular user. For example, passwd['ankita']='brilliant'		
	a. Develop a python program to count all the occurrences of vowels, consonants and digits from the given text using Regular expressions.	3	1,2,3,5
5.	b. Write a python program to create a tuple and perform the following operations • Adding an items • Displaying the length of the tuple • Checking for an item in the tuple • Accessing an items	1	2,3,5
	c. Write a python program to create a text file and ask the user to enter 5-6 lines of text. Display the longest and the shortest word from the file. Display the length of these words.	2	2,3,5
6.	a. Write a python function binary Search () to read a sorted array and search for the key element. Display the appropriate messages.	1	1,2,3,5
	b. Write a python program to simulate saving account processing in a bank using constructors. Create Deposit and Withdraw with other member function and Check for Validation while withdrawing the amount. Raise the appropriate exceptions when depositing and withdrawing an incorrect amount. Display appropriate messages.	2	1,2,3,5
7.	a. Develop a python program to create two classes called as Stack and Queue. Provide the necessary data members and methods to display the operations that can be performed on stacks and queues. Test for all type of conditions.	2	2,3,5
	b. Write a python program to utilize NumPy and perform the following operations. • Read and display a 2D Array. • Display the array elements in the reverse order. • Display all the elements of principal diagonal elements. • Sort the 2D array in ascending and descending order	3	1,2,3,5
8.	a. Develop a python program to read 20 random numbers. Display all the odd numbers from this list which are of length 2 and 4.	2	1,2,3,5
	b. Develop a python program to create a text file and ask the user to enter 5-6 lines of text. Count the number of upper case, lower case and digits in the file. Display the details of the file.	3	1,2,3,5
9.	a. Develop a python program read a dataset and perform the following using Pandas • Visualize the dataset using plot (). • Draw the Scatter plot for the dataset on any column. • Display the scatter plot with different colors. • Draw the Histogram for the dataset on any column.	2	1,2,3,5

	a. Develop a python program to demonstrate handling multiple exceptions using try, except , else and finally block statements..	2	1,2,3,5
10.	b. Write a python program to demonstrate handling of the following exceptions using try and except. • Name Error • Index Error • Key Error • Zero Division Error	2	2,3,5
	c. Write a python program to read the Iris dataset and perform the following operations using Pandas • Display first 5 rows of the dataset. • Display last 5 rows of the dataset. • Display the information about the dataset. • Display the overview of the values of each column. • Visualize the dataset using plot ().	3	1,2,3,4,5

Note:

- **Student is required to solve one program from PART-A and one program from PART-B. The questions are allotted based on lots.**

Marks Distribution:

Conduction and Result	Write-Up	Execution	Viva/Demo	Change of Program	Total
Part – a	**2**	**5**	**5**	**-5 Marks**	**20 Marks**
Part – b	**2**	**6**			

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