

List of Experiments

Group A				
Sr.No	Name of the Experiment	Assignment Mapped	Unit Mapped	CO Mapping
1	Introduction to data Science and Python Spyder Tool with its some basic operation	-	1,2	CO1, CO2, CO5
2	<p>a) Write a program that prompts the user to input the radius of a circle and outputs the area and circumference of the circle. The formula is</p> <p>b) Suppose a, b, and c denote the lengths of the sides of a triangle. Then the area of the triangle can be calculated using the formula:</p> $Area = \sqrt{s(s-a)(s-b)(s-c)}$ <p>where $s = \frac{a+b+c}{2}$</p> <p>Write a program that asks the user to input the length of sides of the triangle and print the area.</p>	1	2	CO1, CO2
3.	Write python program to accept subject marks and to display their Grade card.	1,2	2,3	CO1, CO2
4.	<p>Functions</p> <p>a) Write a function reverse to reverse a list.</p>	1	2,3	CO1, CO2

2

	<p>Without using the reverse function.</p> <p>b) Write function to compute gcd, lcm of two numbers. Each function shouldn't exceed one line.</p>			
5.	<p>Write a program in python that accepts a string to setup a passwords. Your entered password must meet the following requirements:</p> <p>The password must be at least eight characters long.</p> <p>It must contain at least one uppercase letter.</p> <p>It must contain at least one lowercase letter.</p> <p>It must contain at least one numeric digit.</p> <p>Your program should perform this validation.</p>	1,2	2,3	CO1, CO2
6	<p>a. Write a program to count the numbers of characters in the string and store them in a dictionary data structure</p> <p>b. To write a python program to generate all permutations of a given string using list or tuple</p>	3	2,3	CO1, CO2
7	<p>Write a program that generates a random number and asks the user to guess what the number is. If the user's guess is higher than the random number, the program should display "Too high, try again." If the user's guess is lower than the random number, the program should display "Too low, try again." The program should use a loop that repeats until the user correctly guesses the random number. Program should count and display number of tries to win the game.</p>	1,2, 3	2,3	CO1, CO2

Sr. No	Experiment Name	Course Assignment Mapped	Unit Mapped	CO-Mapping
8	Create a 2D numpy array of 6 soccer team players with their [height(meters), weight(kgs)] by reshaping an 1D numpy array. i) Find out the average height ii) median height iii) standard deviation on height iv) Calculate the bmi and print the bmis >25 v) Create two arrays by checking the bmis. a) Arr1: bmi >25 b) Arr2 : bmi <25 and print both the arrays	4	4	CO3
9	Write a python function that takes two numpy.ndarray objects, checks if they are the same shape (printing ERROR and aborting if they aren't), then raises the numbers b of the second array to the exponents a in the first array. Do this without using numpy functions like numpy.power in your function. Make sure that it works with differently sized numpy arrays arrays of 0 dimensions, 1 dimension and 2 dimensions. Do the same using the numpy.power function.	4	4	CO3

10	Write a python program to search for a string in an heterogeneous array of 7 items by using a user defined function that accepts two arguments. i) If string found return the position of the string ii) if string not found, add the string to the list. Note: Do not use built in functions/methods.	4	4	CO2 , CO3
11	Using Panads library read excel sample file of 100 records into Dataframe. Also write these 100 records into particular sheet of excel file.	4	4	CO3
12	Using Panads library read CSV/excel sample file and write into JSON file formation	4	4	CO3
13	Write a python program to create a DataFrame of 6 rows from Dictionary. First create a Tourism_visitors dictionary from four lists of "Cities", "Visitors", "signups" and "Weekdays". Convert the dictionary to Dataframe importing Pandas library. And create row_labels as the short forms of the country names. And display the DataFrame.	4	4	CO3,CO4
14	Download 100 CC Records csv from http://eforexcel.com/wp/downloads-17-sample-csv-files-data-sets-for-testing-credit-card/ . And read the CSV into a DataFrame. <ul style="list-style-type: none"> Display the card type, holder name, issuing bank and credit limit of the holders from 20 to 40(row indexes) using loc and iloc commands. Display all columns and table information. 	4	4	CO3,CO4

Group C

Sr. No	Experiment Name	Course Assignment Mapped	Unit Mapped	CO-Mapping
15	Using the sample dataset i. Handle the null values if any by removing them or perform imputation ii. Import the necessary package and perform the train and test split on the dataset.	4	5	CO4
16	Perform various data visualization using matplotlib library.	5	5	CO3
17	Plot line and scatter charts for students interests in programming against their year in the Engineering college. And derive a distribution of the same over 10	6	5	CO3

4

	years using a histogram.			
18	Study and Implement any one type of regression model (linear, multiple regression) using appropriate dataset	7, 10	5	CO4
19	Using Naïve Bayes, Decision Tree, KNN predict if a customer with certain age and Salary will purchase a product or not	8	5	CO4
20	Study and Implement K-mean clustering using appropriate dataset.		5	CO4
21	Given a case study : Perform Interactive Data analysis on titanic dataset using data analysis tool.	11	5	CO5
Content Beyond Syllabus				
1	Using R programming perform Data Visualization – Bar chart, Histogram, box plot, bar chart, scatter plot and heat chart			