

S. No	Computational Statistics Lab Experiments UCT-304												
1.	<p>Our first primary objective is to learn basics of Python Language.</p> <p>Write a Python program by creating two variables and assign the random values from users and then apply following simple operations. (a) Addition (b) Subtraction (c) Multiply (d) Divide.</p>												
2.	<p>Write a Python program by creating two linear 1D array and assign the random values from users and then apply following simple element by element wise operations on two arrays. (a) Addition element-by-element wise (b) Subtraction element-by-element wise (c) Multiply element-by-element wise (d) Divide element-by-element wise. After applying the aforementioned operations on two arrays, calculate mean and variance on the resultant arrays.</p>												
3.	<p>Write a Python program by creating two linear 1D array and assign the random values from users and then apply following simple element by element wise operations on two arrays. By using if-else, for, while, do-while and multiple if-else statements. (a) Addition element-by-element wise (b) Subtraction element-by-element wise (c) Multiply element-by-element wise (d) Divide element-by-element wise.</p>												
4.	<p>Write a Python program by creating two linear 1D array and assign the random values from users and then apply following simple element by element wise operations on two arrays. By using function for all the operations. (a) Addition element-by-element wise (b) Subtraction element-by-element wise (c) Multiply element-by-element wise (d) Divide element-by-element wise.</p>												
5.	<p>Write a Python program for Linear regression on the following data.</p> <table border="1"> <thead> <tr> <th>X</th><th>Y</th></tr> </thead> <tbody> <tr><td>95</td><td>85</td></tr> <tr><td>85</td><td>95</td></tr> <tr><td>80</td><td>70</td></tr> <tr><td>70</td><td>65</td></tr> <tr><td>60</td><td>70</td></tr> </tbody> </table> <p>Read this data from text file and then apply Linear regression formulations to calculate the value of $y_{\text{estimated}}$ when $X=82$?</p>	X	Y	95	85	85	95	80	70	70	65	60	70
X	Y												
95	85												
85	95												
80	70												
70	65												
60	70												
6.	Write a Python Program to implement Multiple linear regressions (MLR) by taking 3 different Variables randomly or on dataset of MLR .												
7.	Write a Python Program to implement Multivariate regression (MVLR) by taking 3, 4, 5 and 6 different Variables randomly or on dataset of MVLR .												
8.	Write a Python Program to implement the concept of KNN clustering on any dataset downloaded from Kaggle.												
9.	Write a Python Program to implement the concept of PCA on images or any dataset downloaded from Kaggle.												
10.	Write a Python Program to implement the concept of Linear Discriminant analysis (LDA) on images or any dataset downloaded from Kaggle.												
11.	Write a Python Program to implement the concept of Factor analysis (FA) on any dataset downloaded from Kaggle.												