



Daffodil International University

Department of Software Engineering

Faculty of Science & Information Technology

Final Term Exam, Summer 2021 @ DIU Blended Learning Center

Course Code: DS 331 (CC, AC), Course Title: Introduction to Data Science and Data Management
& Analysis (DS Major)

Level: 4 Term: 1 Section: A

Instructor: MSA Modality: Open Book Exam

Date: Sunday, August 29, 2021 Time: 11.30 am-2.00 pm

Total Marks: 40

General Directions

- The examination will start at 11:30 am and will finish at 2: 00 pm.
- Students are allowed to use resources such as lecture notes, books, research papers, the Internet etc. but are not allowed to communicate and share anything related to the exam with other human beings or intelligent machines. Any violation of this policy will lead to the award of zero(0) marks for all the involved parties.
- IF ANYONE FAILS TO SUBMIT THE ANSWER SCRIPT i.e. THE COMPRESSED FOLDER CONTAINING PICTURES OF THE ANSWER SCRIPT ON TIME, YOUR MARKS WILL BE DEDUCTED AS PER THE EXAMINATION POLICY PUBLISHED PRIOR TO THE MID TERM EXAMINATION
- All the answers of this examination have to be written by hand.

Texts in square brackets indicate Course Learning Outcomes and Bloom's Taxonomy Levels

1. Check the below Image and Apply Train test split function. For below data make 2 split and the ratio will be the middle number of your id. Like if the id is 2353 then the first ratio will be 70-30 and second will be 50-50 . Write the code and show the output. [CLO3, Level 4] **6 Marks**

	A	B	C
1	Costs	Mileage	Age
2	643	18.2	0
3	613	16.4	0
4	673	20.1	0
5	531	8.4	1
6	518	9.6	2
7	594	12.1	1
8	722	16.9	1
9	861	21	1
10	842	24.6	0
11	706	19.1	1
12	795	14.3	2
13	776	16.5	2
14	815	18.2	2
15	571	12.7	2
16	673	17.5	0

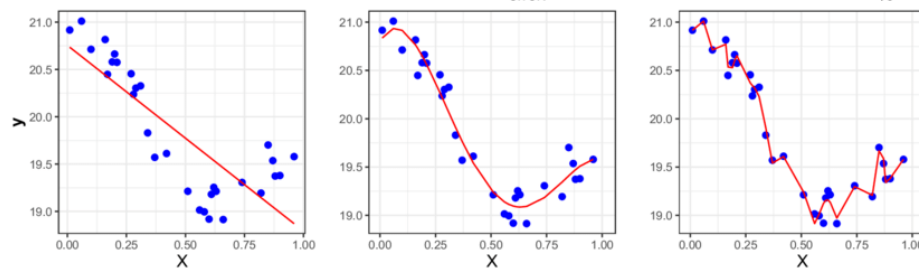
2. Summarize the below Picture and explain to find out the stoke Price Which Regression you may Use. Explain the regression with equation and Hypothesis also write down the code if I want to find the stoke price. While writing the code make sure you plot the Exam2 and Final & Exam 3 and Final – and attached those output in your answer script.

[CLO3. Level 6] 2+4+5=11 Marks

EXAM1	EXAM2	EXAM3	FINAL
73	80	75	152
93	88	93	185
89	91	90	180
96	98	100	196
73	66	70	142
53	46	55	101
69	74	77	149
47	56	60	115
87	79	90	175
79	70	88	164
69	70	73	141
70	65	74	141
93	95	91	184
79	80	73	152
70	73	78	148
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

3. Analyze the below picture and explain what type of statistical model fit on this. Write down the Technique how you can reduce the overfitting and underfitting of model. Explain the confusion Matrix and its use with proper examples.

[CLO4, Level 5] 3+3+4 = 10 Marks



4. Evaluate the picture and explain what type of algorithm is that. What is the benefit or that algorithm? Find out the Minimize Function Value for $f(x+7)^2$. Where learning Rate the last digit of your ID like you're the last digit of your id is 5 the learning rate will be 0.05.(Minimum 4 Iteration)

[CLO4, Level 7] 6+3+4=13 Marks

