Question Paper

Exam Date & Time: 23-Apr-2018 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SCHOOL OF INFORMATION SCIENCES (SOIS)
FIRST SEMESTER MASTER OF ENGINEERING- ME (Big Data and Data Analytics)
DEGREE EXAMINATION - APRIL 2018
Monday, 23 Apri 2018
Time: 10:00am to 1:00pm

Principles of Data Visualization [BDA 615.3]

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1) Give any five reasons for why visualization is a better tool for communicating information. (10)

2) Show the contexts in which you would choose the following Visualization techniques: Stacked graphs, Small-multiples, Horizon graphs. Give an example for each to justify your response. (10)

3) Provide the formal definition and an example for each of the following operators found in the algebra of Grammar of Graphics: Nest operator Blend operator. (10)

4) With an example for each, state the rationale behind the following rules for producing better visualization: Know your audience, Identify your message, Adapt figure to the support medium. (10)

5) Define exploratory and explanatory data visualization. Bring out the differences between them. (10)

6) What is D3? What it does and what it doesn't do? (10)

7) Write D3 script to create a bar chart. (10)

8) Assume that "bill.csv" contains history of sales done in a shop. Fields in csv are "Product Name", "Unit Price", "Quantity" and "Customer Name". Write the script using pandas, to perform following tasks. (10)

    Load to DataFrame.
    List unique customer name
    List Item name with its unit price
    List transactions from row number 10 to 20

9) Write python code to create subplot containing three rows. (10)

Each row should contain two graphs. Type of visualization need to be created is line graph. Use different colors to represent lines in each graph. Provide proper labels and line ticks.

10) Write python script to perform following actions: (10)
Find indices of non-zero elements from [1,2,0,0,4,0]
Create a random vector of size 30 and find the mean value
Create random vector of size 10 and replace the maximum value by 0
Create a null vector of size 10 but the fifth value which is 1

-----End-----