

MANIPAL ACADEMY OF HIGHER EDUCATION, DUBAI CAMPUS
School of Business

II SEMESTER PGDDS INTERNAL EXAMINATION – April 2022
COURSE: Business Intelligence (DSC 422)

Time:1 Hour

MAX.MARKS: 20

Instructions to Candidates:

Answer all questions

Attach a completed PBIX File under Internal Exam Assignment

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Ques. 1 Choose the correct option (1 x 7 = 7 marks)

1. A manager at Gampco Inc. wishes to know the company's revenue and profit in its previous quarter. Which of the following business analytics will help the manager?
 - A. prescriptive analytics
 - B. normative analytics
 - C. **descriptive analytics**
 - D. predictive analytics
2. Predictive analytics:
 - A. summarizes data into meaningful charts and reports that can be standardized or customized.
 - B. identifies the best alternatives to minimize or maximize an objective.
 - C. uses data to determine a course of action to be executed in a given situation.
 - D. **detects patterns in historical data and extrapolates them forward in time.**
3. Descriptive decision models:
 - A. aim to predict what will happen in the future.
 - B. **describe relationships but do not tell a manager what to do.**
 - C. help analyze the risks associated with various decisions.
 - D. do not facilitate evaluation of different decisions.

4. Understanding customers better has helped Amazon and others become more successful. The understanding comes primarily from
- A. collecting data about customers and transactions.
 - B. developing a philosophy that is data analytics-centric.
 - C. analyzing the vast data amounts routinely collected.
 - D. asking the customers what they want.
5. The data field "ethnic group" can be best described as
- A. nominal data.
 - B. interval data.
 - C. ordinal data.
 - D. ratio data.
6. When the decision maker must consider several possible outcomes for each alternative, each with a given probability of occurrence, this is decision making under
- A. certainty.
 - B. uncertainty.
 - C. risk.
 - D. duress.
7. Why are companies like IBM shifting to provide more services and consulting?
- A. Customers see that significant value can be created with the application of analytics, and need help completing these tasks.
 - B. They can no longer compete in the software market.
 - C. New regulations forced them into this market.
 - D. None of these.

Ques. 2 Read the excerpts about Big Data and answer the case scenario questions.

Our brains work extremely quickly and are efficient and versatile in processing large amounts of all kinds of data: images, text, sounds, smells, and video. We process all different forms of data relatively easily. Computers, on the other hand, are still finding it hard to keep up with the pace at which data is generated—let alone analyze it quickly. We have the problem of Big Data. So what is Big Data? Simply put, it is data that cannot be stored in a single storage unit. Big Data typically refers to data that is arriving in many different forms, be they structured, unstructured, or in a stream. Major sources of such data are clickstreams from Web sites, postings on social media sites such as Facebook, or data from traffic, sensors, or weather. A Web search engine like Google needs to search and index billions of Web pages in order to give you relevant search results in a fraction of a second. Although this is not done in real time, generating an index of all the Web pages on the Internet is not an easy task. Luckily for Google, it was able to solve this

problem. Among other tools, it has employed Big Data analytical techniques. There are two aspects to managing data on this scale: storing and processing. If we could purchase an extremely expensive storage solution to store all the data at one place on one unit, making this unit fault tolerant would involve major expense. An ingenious solution was proposed that involved storing this data in chunks on different machines connected by a network, putting a copy or two of this chunk in different locations on the network, both logically and physically. It was originally used at Google (then called Google File System) and later developed and released as an Apache project as the Hadoop Distributed File System (HDFS). However, storing this data is only half the problem. Data is worthless if it does not provide business value, and for it to provide business value, it has to be analyzed. How are such vast amounts of data analyzed? Passing all computation to one powerful computer does not work; this scale would create a huge overhead on such a powerful computer. Another ingenious solution was proposed: Push computation to the data, instead of pushing data to a computing node. This was a new paradigm, and it gave rise to a whole new way of processing data. This is what we know today as the MapReduce programming paradigm, which made processing Big Data a reality. MapReduce was originally developed at Google, and a subsequent version was released by the Apache project called Hadoop MapReduce. Today, when we talk about storing, processing, or analyzing Big Data, HDFS and MapReduce are involved at some level. Other relevant standards and software solutions have been proposed. Although the major toolkit is available as open source, several companies have been launched to provide training or specialized analytical hardware or software services in this space. Some examples are HortonWorks, Cloudera, and Teradata Aster. Over the past few years, what was called Big Data changed more and more as Big Data applications appeared. The need to process data coming in at a rapid rate added velocity to the equation. One example of fast data processing is algorithmic trading. It is the use of electronic platforms based on algorithms for trading shares on the financial market, which operates in the order of microseconds. The need to process different kinds of data added variety to the equation. Another example of the wide variety of data is sentiment analysis, which uses various forms of data from social media platforms and customer responses to gauge sentiments. Today Big Data is associated with almost any kind of large data that has the characteristics of volume, velocity, and variety.

Gilt Groupe's Flash Sales Streamlined by Big Data Analytics

Gilt Groupe is an online destination offering flash sales for major brands by selling their clothing and accessories. It offers its members exclusive discounts on high-end clothing and other apparel. After registering with Gilt, customers are sent e-mails containing a variety of offers. Customers are given a 36-48 hour window to make purchases using these offers. There are about 30 different sales each day. While a typical department store turns over its inventory two or three times a year, Gilt does it eight to 10 times a year. Thus, they have to manage their inventory extremely well or they could incur extremely high inventory costs. In order to do this, analytics software developed at Gilt keeps track of every customer click—ranging from what brands the customers click on, what colors they choose, what styles they pick, and what they end up buying. Then Gilt tries to predict what these customers are more likely to buy and stocks inventory

according to these predictions. Customers are sent customized alerts to sale offers depending on the suggestions by the analytics software. That, however, is not the whole process. The software also monitors what offers the customers choose from the recommended offers to make more accurate predictions and to increase the effectiveness of its personalized recommendations. Some customers do not check e-mail that often. Gilt's analytics software keeps track of responses to offers and sends the same offer 3 days later to those customers who haven't responded. Gilt also keeps track of what customers are saying in general about Gilt's products by analyzing Twitter feeds to analyze sentiment. Gilt's recommendation software is based on Teradata Aster's technology solution that includes Big Data analytics technologies.

Questions

1. What makes this case study an example of Big Data analytics?

Answer: Big Data is data that cannot be stored in a single storage unit and typically is arriving in many different forms or in a stream. Although the case does not describe the volume of data that Gilt Groupe is analyzing, it does say the company is receiving a stream of data because it is measuring every click on the company's website, as well as references to Gilt on Twitter. Also, the software the company uses is based on Teradata Aster's technology solution that includes Big Data analytics technologies.

2. What types of decisions does Gilt Groupe have to make?

Answer: Gilt Groupe must decide what to order—both the selection of brands and styles and the quantity of each item—to minimize inventory costs. It makes personalized recommendations, so it needs to decide what items to recommend to each customer. It needs to decide on the timing of e-mails that communicate the offers.

(3 x 3 =6 marks)

Ques.3 Access the Contexture Sales data file uploaded on teams. You are required to compute the following.

1. Create a new column in MS power BI, rename as Full name, transform the individual column into one.
2. Calculate the Total Cost Price of the product.
3. Calculate the Total revenue if the selling price is 40% of the total cost.
4. Calculate the price of weekends and weekdays.
5. Calculate the commission @5% on the selling price will be credited to the account of the representative if they sold more than 50 units. Calculate and show the commission paid to eligible representatives.
6. Create a report items wise Total cost, Total revenue, region wise.
7. Create a report which will representative wise total units sold and total profit made.

(7 Marks)