

IST722: Class Exercise 3

This is an individual assignment.

Before you begin, please make sure you've read and understand 1) our class honor code, 2) course policies on late work and 3) participation policies as posted on the syllabus. "I didn't know" is not an excuse.

You should cite your sources in a standard format like MPA or APA and include a list of works cited.

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Instructions (Refer Unit 3)

Answer each of the following questions as concisely as possible. More is not necessarily better. Please justify your answer by citing your sources from the assigned readings from our textbooks, our class lectures, or online if directed to do so. Be sure to cite in text and include a list of works cited. Place your answer below each question. When you're finished, print out this document and bring it to class as part of your participation grade.

Questions

[1] How does dimensional modeling reflect business processes? What are dimensions in dimensional modeling? Provide examples.

Ans - Dimensional modeling is a method of data modeling in data warehousing that mirrors an organization's business processes. It arranges data into dimensions and facts, which capture the context and metrics of the business. Dimensions provide context for the facts; they have attributes which describe and categorize their values. These help in constraining and summarizing facts. The examples are Student, Major, Year, Dormitory, Gender.

[2] Explain the difference between a functional and non-functional requirement? Provide examples.

Ans - Non-functional requirements outline how a system should perform in terms of quality qualities such as performance, security, usability, availability, and scalability, whereas functional requirements describe what a system should accomplish in terms of particular features and functions. User identification, inventory management, and payment processing are examples of functional needs, whereas non-functional requirements include performance objectives, security measures, and scalability capabilities.

[3] What are the three business process types? Provide an example of each.

Ans – The three types of business process are:

1. Events or Transactions: Event or transaction-based procedures entail collecting individual events or transactions as they occur in the source systems and storing them in the data warehouse. For example, an event or transaction-based operations involves logging online purchase transactions.

2. Accumulating Snapshots: Accumulating snapshot methods require taking snapshots of key performance indicators (KPIs) or critical business metrics at regular intervals. These snapshots depict the condition of the company at various moments in time and are updated. For example, providing monthly sales performance snapshots in the data warehouse

3. Periodic Snapshots: In Periodic snapshots complete pictures of the whole business or specific components of it are captured at regular periods. These snapshots give a comprehensive perspective of the business at certain times in time, allowing for historical analysis and trend detection. For example, frequent snapshots of quarterly financial statements, such as the balance sheet.

[4] What are the three types of facts? Provide an example of each.

Ans – Three types of facts are:

Additive Facts: Additive facts are numerical measures that may be summed across dimensions using mathematical processes. They are frequently employed in computations, reporting, and analysis. Total sales income, amount sold, and profit are examples of additive facts.

Semi-Additive Facts: Semi-additive facts are numerical measures that can be aggregated along some but not all dimensions. They can be added together for specified dimensions while retaining their uniqueness for others. Account balance and inventory are two examples of semi-additive facts.

Non-Additive Facts: Non-additive values are numeric values that cannot be added using mathematical formulas such as addition. Instead, they represent ratios, percentages, or other results that lose their meaning when added. Examples of non-additive facts are average unit price and replacement cost.

[5] Come up with your own functional requirement for any business/department – state that as a single question. Then, identify the business process, business process type, dimensions and fact(s) based on that statement.

Ans – How many units of television did the dealer sell last month?

How many units- Fact or measure

Television- type of product- attribute of Product Dimension

Month- attribute of Date Dimension

Transactions - Business Process type

Sell (Sales)- Business Process (Fact table)

WORKS CITED:

Class slides and Professor Fudge slides.