DIS Miniproject - fclub

Anders Eiler & Bjarke Søndergaard

aeiler09@student.aau.dk / bsoend09@student.aau.dk

Branch: SW7 701e12a

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1 Task B - Choose business process(es)

A short description of the business process and the granularity. List also considered alternatives, if any. Give also between 4 and 8 examples of queries you want to be able to answer.

1.1 Business Processes

The fclub's main purpose is to sell its products to its members. We have found two business processes in the fclub that we can model:

- Sales of products to members.
- Payments from the members.

In this miniproject we have chosen to focus on the business process that describes the sales.

1.2 Granularity

For the chosen business process we wish to be able to see each individual sales. This means that the data in the data warehouse will be of high granularity.

It is possible to choose a lower granularity, such as modeling sales by grouping each sale by the product by the hour. This however disables us from doing some statistics, such as the purchases made by each member.

1.3 Queries

We aim to design our data warehouse to be able to answer the following quries:

- What is the most popular product?
- What are the sales for a specific product grouped by different time measures (events, week-day, hour etc.).
- Which products are most popular at the different rooms?
- What are the sales for a specific member?
- When are sales the highest?
- When are most members purchasing products?

2 Task C – Dimensional modeling

We model the sales on a per sale basis. We use two fact tables to keep track of the information necessary, Table 1 and Table 2, representing the value of each sale and the balance of members, respectively. Table 1 has the dimensions Time, Product, Location, and Member, which will be explained momentarily. Table 2 has the dimensions Time and Member. We chose to create a fact table for balance instead of having it within the Member dimension, as the balance

will change with every purchase and thus our Member dimension would grow as quickly as our fact table. This is because balance is a rapidly changing dimension.

The Time dimension is shown in Table 3, and contains nothing special - simply a reference to when different facts happen, and goes with the Date Dimension shown in Table 4. The Product dimension is shown in Table 5 and contains the slowly changing Price, since products' price might increase or decrease over time. This may or may not be implemented depending on time. The Location dimension shown in Table 6 keeps track of where/in which context every purchase has been made. Lastly the Member dimension shown in Table 7 contains every member within the fclub. Each member has an id in the system, which we will present with the UserId, this is because surrogate keys should always be used, in case updates might happen.

Time_id(FK)	Date_id(FK)	Product_id(FK)	Location_id(FK)	Member_id(FK)	Sale

Table 1: Fact Table for Sales

Time_id(FK)	Date_id(FK)	Member_id(FK)	Balance

Table 2: Fact Table for Balance

Time_id(PK)	Hour	Minute	Second

Table 3: Time Dimension Table

Date_id(PK)	Year	Month	Week	DayOfWeek	Day

Table 4: Date Dimension Table

Product_id(PK)	Name	Price

Table 5: Product Dimension Table

Location_id(PK)	Name	Room Id

Table 6: Location Dimension Table

Member_id(PK)	UserID	Active	Year

Table 7: Member Dimension Table