**Ex 1)**Identify an Organization whose business needs can not be fulfilled by existing operational database systems and it require a data warehouse solution. List down the issues, which can not be resolved by operational databases for this particular organization and how a data warehouse would help. Also identify required levels of granularity (Be Precise).

1)The organization which want to collect more and more data for analytic based decisions.

2)he organization which have huge data and transaction growing every day

3)The organization which want to replacing/supporting human decision making with automated algorithms;

4)The organization which want to innovating new business models, products, and services.

**Issues in operational database**

1.Can handle less traffic

2.Can not collect data from multiple sources easily

3.Not good for analytics as have less BI tools integrations

**How a data warehouse would help.**

**A Data Warehouse Generates cost saving on High ROI**

Companies that have implemented data warehouses and complementary BI systems have generated more revenue and saved

more money than companies that haven't invested in BI systems and data warehouses as they can take better decision on data bases.

**A Data Warehouse Saves Time and efficiency**

Since business users can quickly access critical data from a number of sources—all in one place—they can rapidly

make informed decisions on key initiatives. They won't waste precious time retrieving data from multiple sources.

**Delivers enhanced business intelligence**

By having access to information from various sources from a single platform, decision makers will no longer need to rely on limited data or their instinct.

**Ex 2)** A data warehouse is subject-oriented. What would be the major critical business subjects for the following companies?

a. an international manufacturing company

b. a local community bank

c. a domestic hotel chain

1. an international manufacturing company

1)Shipments (shipment is the major subject for an internationalManufacturing companies)

2)Manufacturing( it contains product,order etc dimension)

3)Financial Management( it contains sales, price,account,contract)

6)Supplier

b). a local bank community

1. loans
2. profits
3. customers
4. Accounts
5. Transactions
6. Employees

c). a domestic hotel chain

1. Booking
2. Fairs
3. Branches
4. Rooms (Room type)

**EX3)**Data warehouse projects are different from projects building the transaction processing systems.

How about traditional system development life cycle (SDLC) approach?

Can we use this approach to data warehouse projects as well?

If so, what are the development phases in this life cycle?

The life cycle methodology breaks down the project complexity and removes any ambiguity with regard to the responsibilities of project team members. It implies a predictable set of tasks and deliverables.

That the life cycle approach breaks down the project complexity is alone reason enough for this approach to be applied to a data warehouse project

**Data warehouse development phases.**

* Project plan
* Requirements definition
* Design
* Construction
* Deployment
* Growth and maintenance

**Ex4)** For an airlines company, identify three operational applications that would feed into the data warehouse. What would be the data load and refresh cycles?

Booking application: need full load and the beginning and incremental load; the refresh maybe monthly or quarterly User Account application: need full load and the beginning and incremental load; the refresh maybe monthly or quarterly. User information will have huge amount to data and user information changes every day, this can fully loaded at the beginning and then update the changes each month or quarter. Flight application: need full load, the refresh maybe quarterly or yearly. Flight information is relative stable and has limited data. This can be full loaded to system.

**Ex5)**You are the vice president of marketing for a nation-wide appliance manufacturer with three production plants. Describe any three different ways you will tend to analyze your sales. What are the business dimensions for your analysis?

One way sales can be analyzed is through period comparisons in regard to the last year versus the current financial year that has just ended. These period comparisons project the improvement or lack of it in sales of a given company. The second way to analyze sales is through competitor analysis. In this case, the three plants may be levelled against each other looking for the one with the best sales over the same period. Third, sales can be analyzed through Per Capita Sales which determine the number of dollars that have been made from the sale of products by a given population.

The business dimensions can include customer type, time (period), customer region (region) and location

10)Construct an information package diagram for analyzing expenses against provided budget. for a large scale manufacturing organization dispersed across 15 countries, and more than 50 divisions and districts. Management would like to study and analyze expense over time (days, months, years and so on), district , division and budget line items. Show also a drill down dimension.

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Location** | **Product** | **payment** |
| Year | Country | Product model | Visa debit |
| Quarter | District | Product year | Online payment |
| Month | division | Product styling | Online payment |
| Date | City | Product line | Cod |
| Day of week | Store | Product category |  |
| Day of month |  |  |  |
| Season |  |  |  |
| Holyday flag |  |  |  |

11) 14. BigBook, Inc. is a large book distributor with domestic and international distribution channels. The company orders from publishers and distributes publications to all the leading booksellers. Initially, you want to build a data warehouse to analyze shipments that are made from the company’s many warehouses. Determine the metrics or facts and the business dimensions. Prepare an information package diagram.

|  |  |  |  |
| --- | --- | --- | --- |
| Time | Dealer | Costumer | Location |
| Year | Publisher | Name | Counter |
| Quarter | Author | Age | Division |
| Month |  | Gender | City |
| Date |  | Books bought | address |
| Day of week |  |  |  |
| Day of month |  |  |  |
| Season |  |  |  |
| Holyday flag |  |  |  |

Facts: dealer, publisher, costumer, location

**12)** Construct an information package diagram for hotel stays, identifying the dimensions, attributes, and facts. The hotel management would like to study the occupancy patterns in their hotels over time (days, weeks etc), locations, travel agents, customers, room types, rate plans, etc. Furthermore, they would also like to have ready access to the rooms that are occupied or vacant on a given date.

|  |  |  |  |
| --- | --- | --- | --- |
| Time | Costumers | Rooms | rate planes |
| Year | Name | booked date | One bed room |
| Quarter | location | Check in date | 2 bed room |
| Month | phone number | Check out date | Daily rent |
| Date | email | Room | Weekly rent |
| Day of week |  | Vacant or booked |  |
| Day of month |  |  |  |
| Season |  |  |  |
| Holyday flag |  |  |  |

Facts: vacant rooms, booked rooms, booking pattern, rate planes