COVID – 19 (ONLINE EXAMINATION)

DSVV

देव संस्कृति विश्वविद्यालय

शान्तिकुन्ज, हरिद्वार

आन्तरिक मूल्यांकन परीक्षा – INTERNAL EVALUATION TEST

उत्तर–पुस्तिका

परीक्षार्थी अनुक्रमांक (अंकों में) 1824006 पेपर कोड .....
Student's Roll No. (in numbers) Paper code

परीक्षार्थी अनुक्रमांक (शब्दों में) Aniket Kumar नामांकन संख्या 1800000129
Student's Roll No. (in words) Enrollment Number

कक्षा BCA (VI Semester) विषय DWDM
Class Subject

दिनाँक 26/02/2021 दिन Friday
Date Day

प्रश्न पत्र संख्या .....
Examination Paper Number

लघुत्तरीय A) Short Answer Type		योग/Total
1	2	
दीर्घ उत्तरीय B) Long Answer Type		
1		
कुल योग अंकों में / TOTAL IN DIGITS		
कुल योग शब्दों में/TOTAL IN WORDS		

Aniket

परीक्षार्थी के हस्ताक्षर
Signature of student's

परीक्षक के हस्ताक्षर
Signature of Examiner

Short Answer

Ans 1. Data Mart

- The term data mart means a data store that is subsidiary to a data warehouse of integrated data. It is a subset of Data warehouse.
- The data mart is directed at a partition of data (often called a subject area) that is created for the use of a dedicated group of users.
- A data mart can be a set of denormalised, summarized, or aggregated data.

Types of data marts

- Dependent data marts – Partitioned segments within an enterprise data warehouse.
- Independent data marts – act as a standalone system that doesn't rely on a data warehouse.
- Hybrid data marts – Combine data from existing data warehouses and other operational sources.

Steps in Implementing a Datamart

Designing → Constructing → Populating → Accessing → Managing

Example-

We can take the example of the Student Information System of a university. Here, the seperate informations like Personal details, academic details, exam marks, etc. are connected ~~by~~ via dimensional tables that are some or subsets of each other. These connected marts via a confirmed student dimension makes it easier for OLAP tools to use the data and allows nonspecialists to do much of the work.

Ans 2 OLAP - Online Analytical Preprocessing

- It is a computing method that enables users to easily and selectively extract and query data in order to analyze it from different points of view.
- In other words, OLAP is the process of creating and summarizing historical, multidimensional data -
  - to help users understand the data better
  - Provide a basis for informed decisions
  - Allow users to manipulate and explore data themselves, easily and intuitively.

Working of OLAP

- Data is collected from multiple data sources and stored in data warehouses, then cleaned and organized into data ~~marts~~. Cubes.
- Each OLAP Cube contains data categorized by dimensions, derived by dimensional tables in the data warehouses.
- Dimensions are then populated by members that are organized hierarchically.
- The 5 types of OLAP analytical operations are - Roll up, Drill-down, Slice, Dice and Pivot.

Need for OLAP

- Solving modern business problems such as market analysis and financial forecasting.
- The business problems are characterized by the need to retrieve large number of records from very large data sets and summarize them.
- It is very useful in trend analysis, financial reporting, sales forecasting, budgeting and other planning purposes.

Long Answer

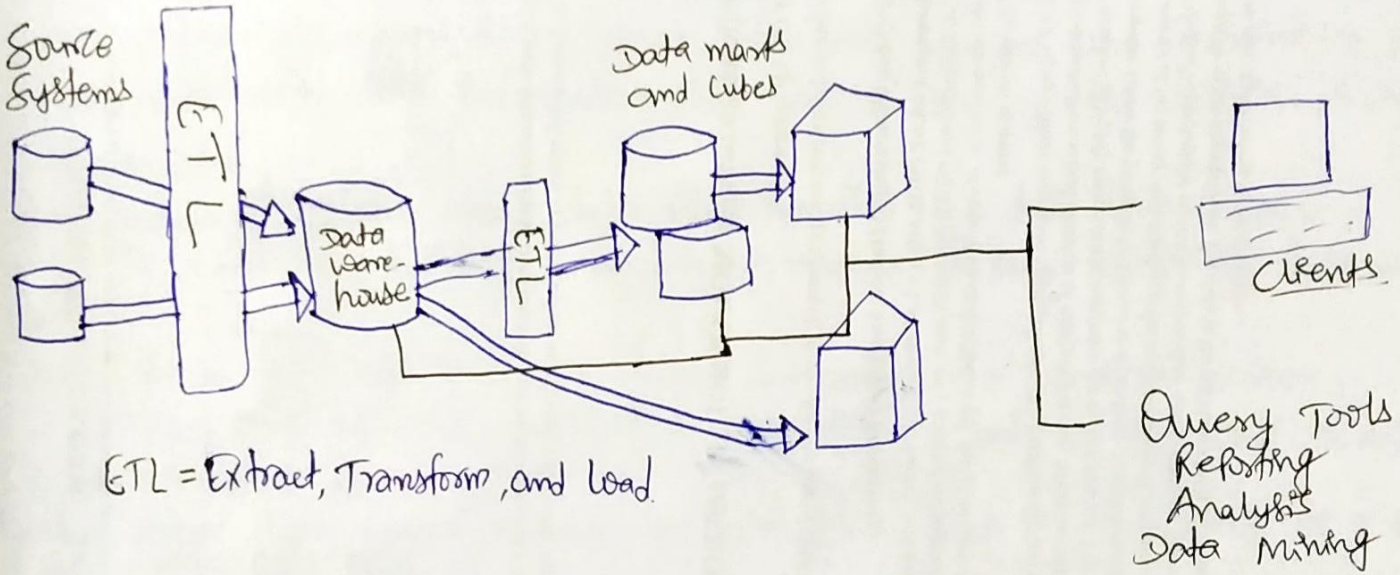
Ans 1 - In today's competitive business environment, it requires agile access to a data storage warehouse, organized in a manner that will improve business performance, deliver fast, accurate, and relevent data insights.

- Business Intelligence architecture has emerged to meet those requirements, with data warehousing as the backbone of these processes.
- Business Intelligence ~~architecture~~ refers collectively to the tools and technologies used for the collection, integration, analysis, and visualization of data.
- The raw data which we collect from different data sources transform into comprehensive data or meaningful information using Business Intelligence technologies.

Role of data warehouse in business intelligence

- Data warehousing and Business Intelligence often go hand in hand, because the data made available in the data warehouses are central to the Business Intelligence tools' use.
- Business Intelligence tools like Tableau, Chartio, Looker, etc, use data from the data warehouses for purposes like query, reporting, analytics and data mining.
- Business Intelligence with data warehousing is helpful in operational efficiency which includes ERP reporting, KPI tracking, risk management, Product Profitability, costing, Logistics, etc.
- It also helps in Customer interaction which includes Sales analysis, Sales forecasting, Segmentation, Campaign Planning, Customer Profitability, etc.

Architecture of Datawarehousing and BI -



Components of the Data Warehouse

- The data warehouse architecture is based on a relational database management system (RDBMS) server that functions as the central repository for informational data. following are the components of the data warehouse:-

• Data warehouse database

- The central data warehouse database is the cornerstone of the data warehousing environment.
- Certain data warehouse attributes, such as very large database size, adhoc query processing and the need for flexible user view creation have become drivers for different technological approaches to the data warehouse database.

Sourcing, Acquisition, Cleanup and Transformation Tools

The data Sourcing, Cleanup, transformation and migration tools perform all of the Conversions, Summarizations, Key changes, Structural changes, and Condensations needed to transform disparate data into information that can be used by the decision support tool.

Metadata

- metadata is data about data that describes the data warehouse.
- It is used for building, maintaining, managing and using the data warehouse.

Access Tools

The type of access tools we choose determines the level of access:
Query and reporting, Application development, Data mining and OLAP tools.

Data Marts

- The term data mart means - A data store that is subsidiary to a data warehouse of integrated data.
- Data marts can be dependent, independent or Hybrid.

Data warehouse Administration and Management

It includes Security and Priority management, monitoring updates from the multiple sources, data quality checks, managing and updating meta data, purging data, replicating, subsetting and distributing data, backup and recovery and data warehouse storage management.

Information Delivery System

It is used to enable the process of subscribing for data warehouse information and having it delivered to one or more destinations.