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Information Technology Infrastructure -02

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1

Data Base management software

- DBMS software helps to create and manage databases for personal or organizational use.
- Provides systematic ways to create, retrieve, update and manage data.
- Enables users to create , read, update and delete data in database.
- Serves as the interface between database and application programs.
- Ensures data is consistently organized with minimum redundancy and provides easy access to stored data.
- Ex : MS Access , MS SQL,MS-SQL Server

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2

DBMS Functions

- Data Dictionary facility
- Data Storage management
- Security management
- Multi user access control
- Backup and recovery management
- Data integrity management
- Database access language and application programming interfaces
- Database communication interfaces
- Transaction management

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3

Data Dictionary facility

- Stores the definitions of the data elements and their relationships (Metadata)
- Uses this function to look up the required data component structures and relationships.
- This function removes the structural and data dependency and provides the user with data abstraction.
- This is often hidden from the user view and used by DB admin.

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4

Data Storage management

- Refers to storage of data and any related data entry forms or reports, data validation rules, procedural codes and other data formats.

- This allows to hide how data is stored or manipulated for users.

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5

Security management

- Sets rules that determines access levels for specific users that are allowed to access the DB.
- Users are give credentials or sometimes biometric authentication

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6

Multi user access control

- Data integrity and data consistency are the basic functions of this.

- Allows multiple users to access the DB simultaneously without affecting the integrity of the DB.

Backup and recovery management

- use to take backup of copies of the DB in case of potential outside threats such as power outage.
- This helps to maintain data safety and integrity

Data integrity management

- Enforces these rules to reduce unnecessary data duplication which is called "Data Redundancy".

- Minimizes data is stored in more than one place unnecessarily and maximizing data consistency making sure DB receiving same data through front end application all time.

Database access language and application programming interfaces

- uses a non procedural language to retrieve data from the DB.

- SQL is supported by the major DB vendors.

- user friendly and easy for user to specify what they want done without the headache of explaining how to specifically do it.

Database communication interfaces

- This refers to how DBMS accepts different user requests through different network environments.

- Ex: A DBMS runs on internet through a web browser must provide requests came from chrome, Mozilla Firefox and IE

Transaction management

- This refers to all updates in a given transaction are completed or not.

- Must follow the ACID properties.

- Atomicity – Transaction must perform as whole and not part by
- Consistency – DB must update when transaction happens
- Isolation – Transactions executed independently. Shouldn't visible the part of the transaction
- Durability – Successful transaction must store permanently in the DB and must not lost due to any failures.

Presentation Software

- Provide facilities to create slide based presentation with images ,animations and multimedia.
- Contains text editor.
- Facilitate to add charts and graphic images such as photographic clips and multimedia components.
- Ex : MS power point, Open office impress, keynote

13

Web Browser software

- Designed to locate, retrieve, and display html enable content.
- Using a hyperlink or URL of a website the is able to fetch websites of one or more web pages from the internet.
- Ex : Internet explorer, Mozilla Firefox, Google chrome, Safari

14

Email Software

- Used for creating, sending, receiving and organizing electronic mail.
- Modern email services provides facilities like email message editors, anti spam and anti phishing securities, and advance search capabilities.
- Ex: Microsoft outlook, Windows live mail, Mozilla thunderbird
- Webmail is not required to installed on user's computer.

15

Graphics Software

- These software's create , edit and manages two dimensional images.
- These computer graphics may be clip art, web graphics, logos, headings, backgrounds, digital photos or any other digital images.
- Ex : Corel draw, Adobe fireworks, Adobe photoshop

16

Communication Software

- Used to provide remote access to systems and exchange files and messages in text, audio, or video formats between different computers or users over the networks.
- These softwatware offers,
  1. Work remotely
  2. Increase productivity
  3. Easy to integrate
  4. Capture important information
  5. Minimize costs

17

Accounting Software

- Used to manage accounts and perform accounting related operations by accounting professionals.
- Allows to prepare required reports and financial analysis to meet legal or internal managerial requirements.
- Ex : Fresh book, Xero, QuickBooks, Wave, Zoho books, Peachtree, cash manager, Declaree

18

Application specific Software

- Also known as function specific software are designed to handle specific tasks to cater user requirements.
- Contains more specific functions and features.

- Ex : Supply chain management software , CAD , TurboTax

19