In the Name of

Allah

The Most Merciful and Compassionate the most gracious and beneficent, Whose help and guidance we always solicit at every step, at every moment.

Database Systems
2022

Database Approach and Advantages of Database Approach
Lec-2

Database Approach

- Why database approach?

- Two main factor
  - In TFPS the definition of data is embedded in the application programs rather than being stored separately and independently.
  - There is no control over the access and manipulation of data in TFPS.

- **To overcome above problems database approach was developed**

Database Approach

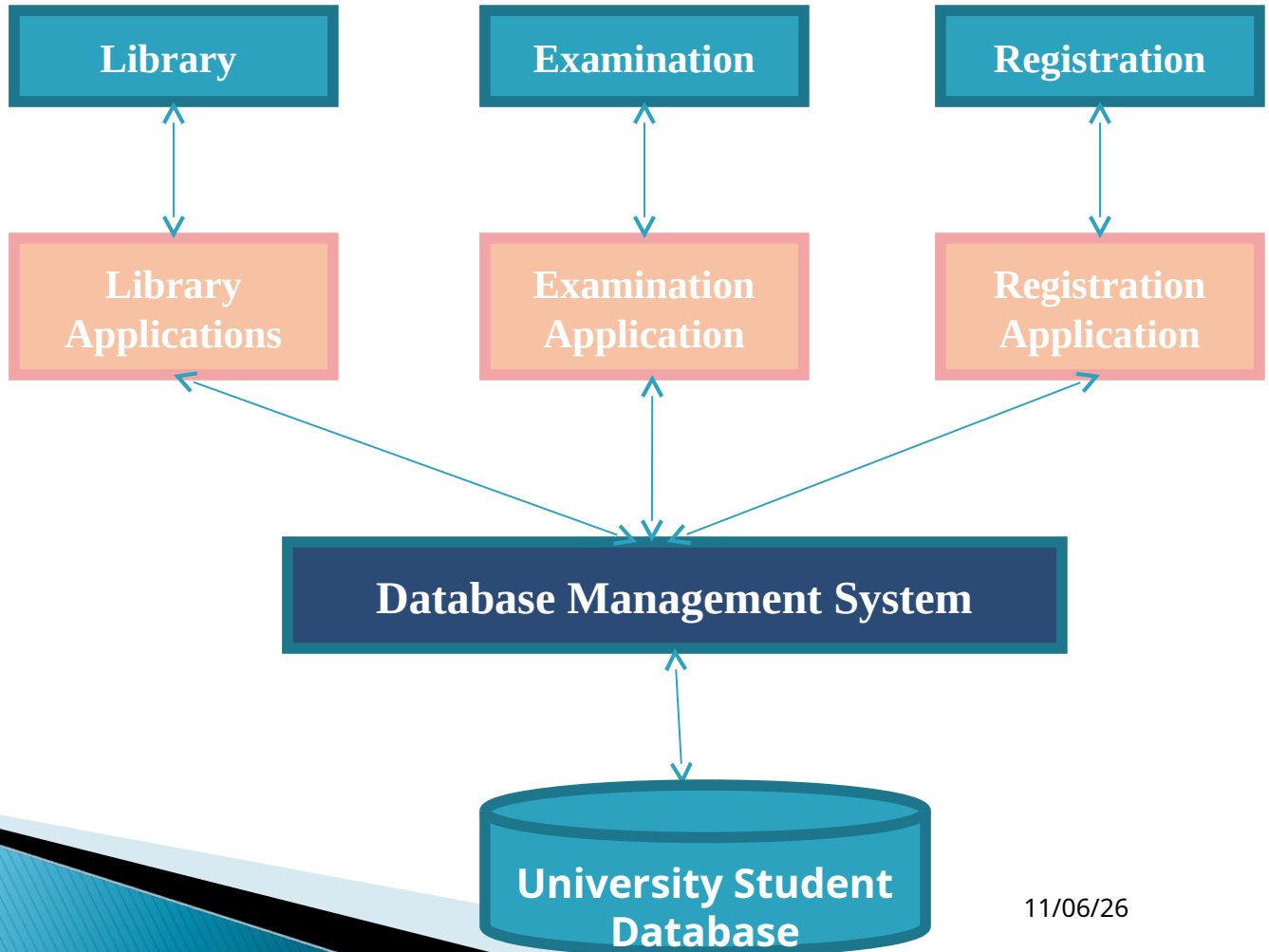
- Database approach emphasizes the integration and sharing of data throughout the organization.
- Single centralized database is used for all department of organization.
- **Self describing collection** of integrated records.
- Remove nearly all the drawback of file processing system.

Database Approach

- **Advantages of Database Approach**
  - Program-data independence
  - Planned data redundancy
  - Improved data consistency
  - Improved data sharing
  - Increased productivity of application development
  - Improved data quality
  - Improved data accessibility and responsiveness
  - Reduced program maintenance
  - Improved decision support

Database Approach

- **Advantages of Database Approach**



Database Approach

- **Advantages of Database Approach**

- **Program-data independence**
  - The separation of **data description** from the application program is called data independence.

  - Data descriptions are store in a central location called **repository.**

Database Approach

- **Advantages of Database Approach**

- **Planned Data Redundancy**
  - Single centralized database is used for all department of organization. So there is no need to store the data in several places.

- **Improved Data Consistency**
  - Eliminating or controlling data redundancy improve data consistency.

Database Approach

- **Advantages of Database Approach**

- **Improved Data Sharing**
  - Data is stored in central location so it is accessible to all users of the organization.
  - Authorized users are granted permission to use the database.
  - **User view** is provided to one or more user to use data.

- **Increased Productivity of Application Development**
  - Reduces the time and cost for developing new business applications

Database Approach

- **Advantages of Database Approach**

- **Improved Data Quality**
  - Database designer specify the **constraints** to improve the quality of data.
  - Database approach provide number of tools and process to improve the quality of data.

- **Improved Data Accessibility and Responsiveness**
  - Accessing and retrieving of data is very easy because DBMS uses **SQL** through which data can be accessed fastly

Database Approach

- **Advantages of Database Approach**

- **Reduced Program Maintenance**
  - Program maintenance includes: add new data item and types, change the formats of data etc.
  - In database approach changes either in application program or data done without affecting other factors.

- **Improved Decision Support**
  - Data warehouse is used for decision making process.

Cost and Risk of the Database Approach

- New, specialized personnel
- Installation and management cost and complexity
- Conversion costs
- Need for explicit backup and recovery
- Organizational conflict

Database Management System

- A database management is a software that is used to create, maintain, and provide controlled access to user databases.
- DBMS provides an environment that is both convenient and efficient to use.
- Example of DBMS: MS Access, SQL Server, Oracle……

Have a Nice Day