

Tishk International University  
Department of Information Technology  
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# Database Systems I

## Lecture 1

### Introduction to Database

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# Lecture Outcomes



- What is Database
- What is Database Management System (DBMS)
- What is File System
- Difference between DBMS and File System

# Database



- It is an organized collection of structured information or data.
- Typically stored electronically in a computer system (e.g.: database server.).
- It is usually controlled by a database management system (DBMS).



# Database (cont.)



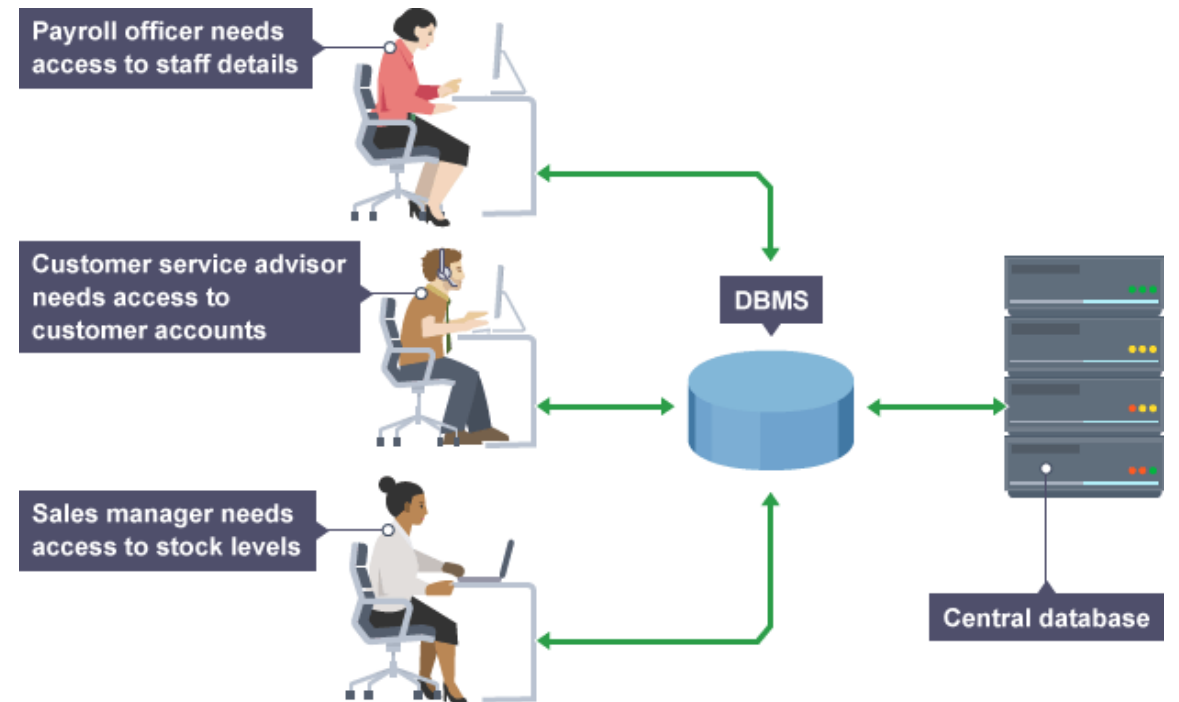
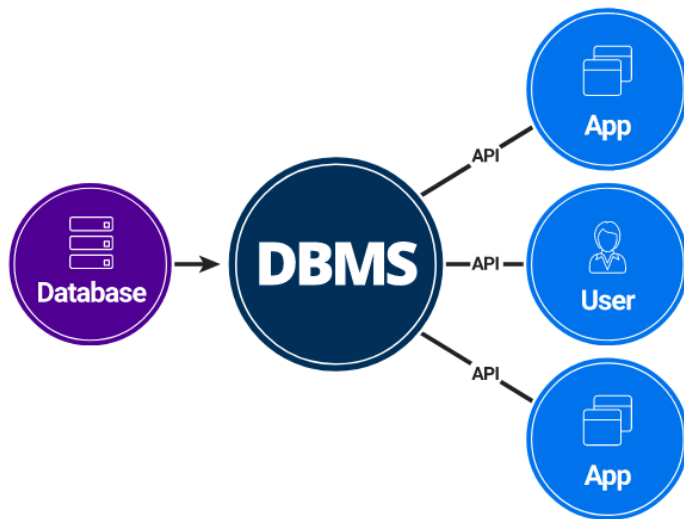
- Database can be very large.
- Databases touch almost all aspects of our lives.



# Database Management System (DBMS)



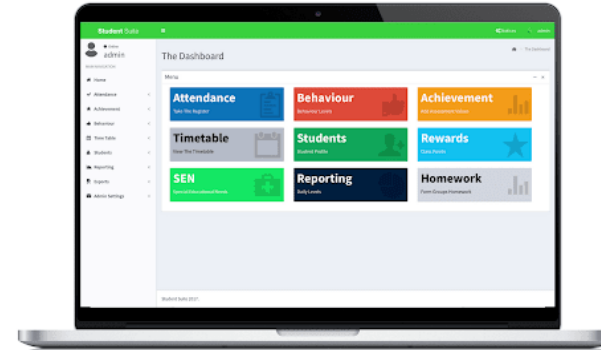
- Is a software for creating and managing databases.
- It provides users and programmers with a systematic way to create, retrieve, update and manage data.



# Uses of Database



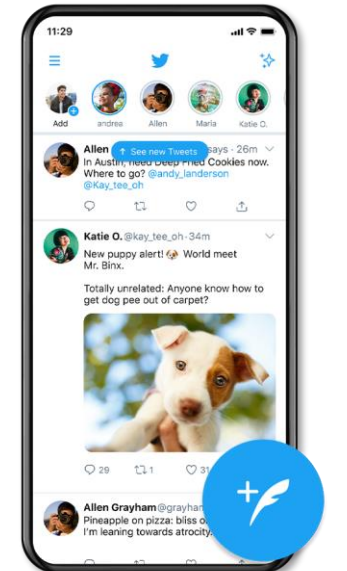
- Database can be used in:
  - **Universities:** registration, grades
  - **Banking:** transactions
  - **Airlines:** reservations, schedules



# Uses of Database (cont.)



- **Sales** (e.g.: Shopping markets): products, purchases
- **Manufacturing:** production, orders
- **Social Media:** communication, announcement



# Database Example

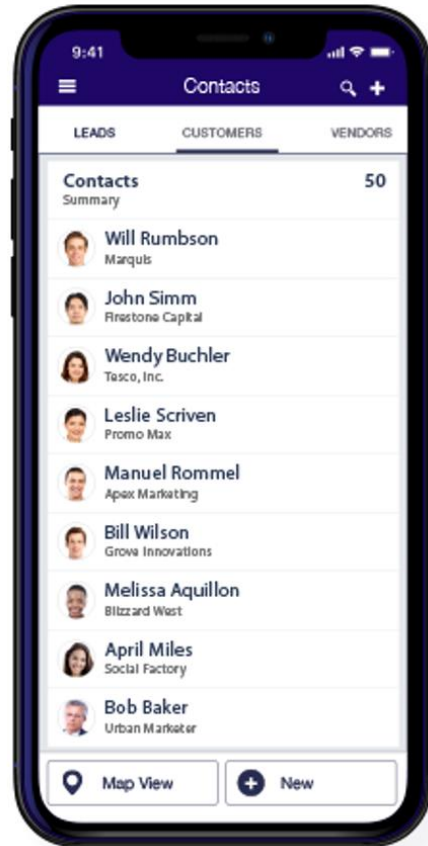
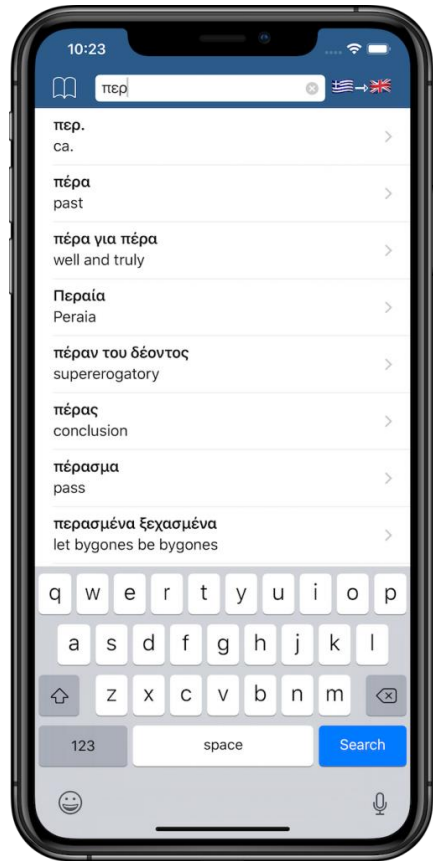


- Shopping market database performs:
  - Adding new items to the store
  - Calculation of the receipt on the cashier
  - Deduction of sold items from the system
  - Reporting of the needed items
  - Filling the place of the sold items with the ones from the store.
  - Reporting of the sold items and calculation of the amount of profit within a period.

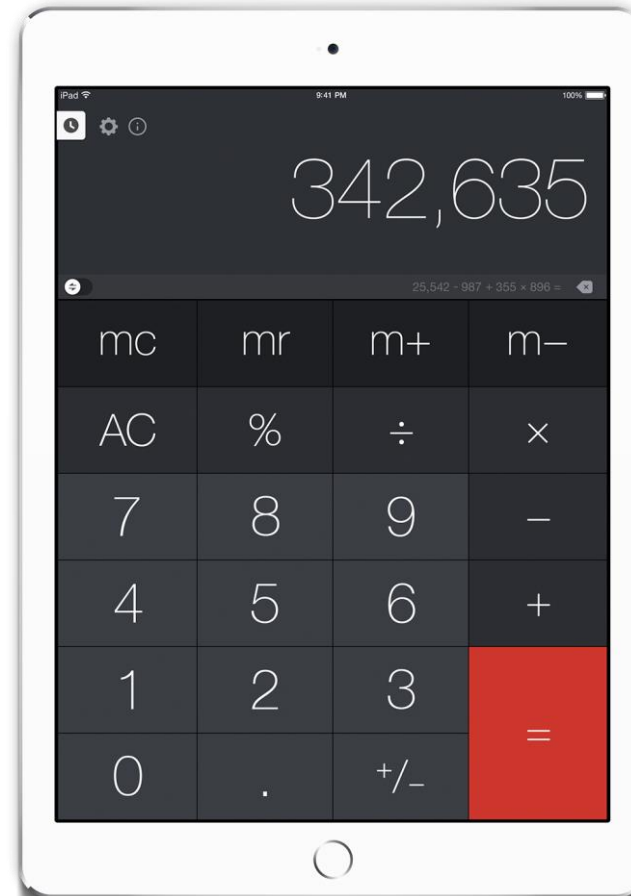




# Apps with Database



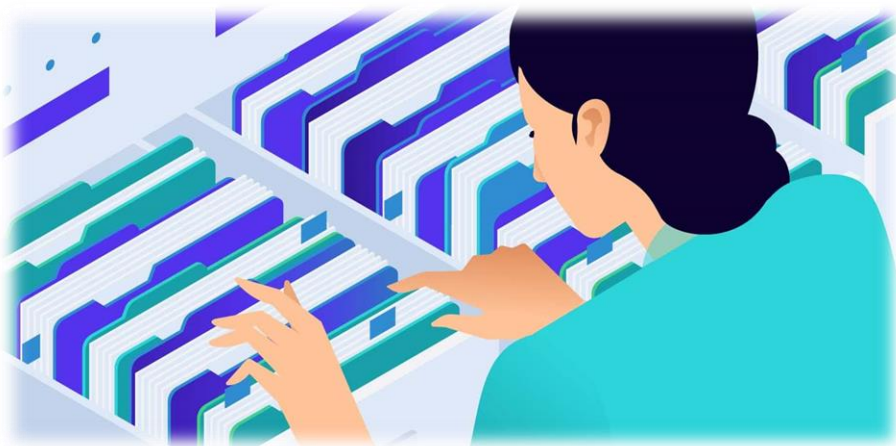
# Apps without Database



# File System



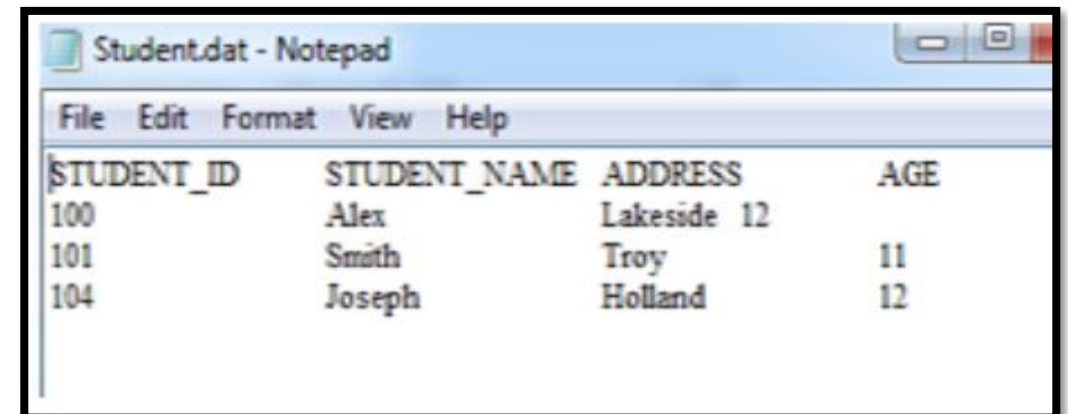
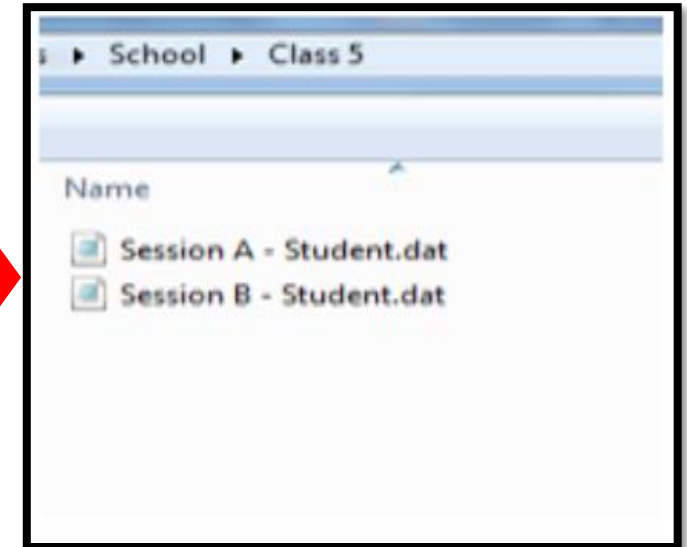
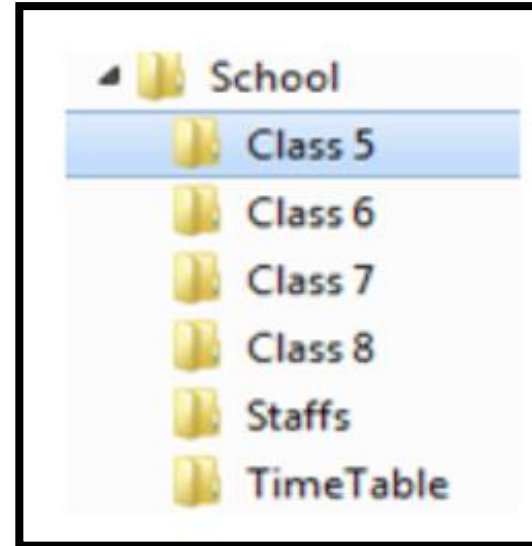
- It is basically a way of arranging the files in a storage medium like hard disk.
- It organizes the files and helps in retrieval of files when they are required.



# File System (cont.)



- File systems consist of different files which are grouped into directories. The directories further contain other folders and files.
- File system performs basic operations like management, file naming, giving access rules etc.



# DBMS vs File System



DBMS	File System
<ul style="list-style-type: none"><li>• Is a software for managing the database within a computer or a server.</li></ul>	<ul style="list-style-type: none"><li>• Is a software that manages the files in a storage medium within a computer.</li></ul>
<ul style="list-style-type: none"><li>• There is no redundant data.</li></ul>	<ul style="list-style-type: none"><li>• Redundant data can be present</li></ul>
<ul style="list-style-type: none"><li>• It provides backup and recovery of data even if it is lost.</li></ul>	<ul style="list-style-type: none"><li>• It doesn't provide backup and recovery of data if it is lost.</li></ul>
<ul style="list-style-type: none"><li>• There is efficient query processing</li></ul>	<ul style="list-style-type: none"><li>• There is no efficient query processing</li></ul>
<ul style="list-style-type: none"><li>• It has more security mechanisms as compared to file system.</li></ul>	<ul style="list-style-type: none"><li>• Provides lesser security in comparison to DBMS.</li></ul>
<ul style="list-style-type: none"><li>• It has a comparatively higher cost than a file system.</li></ul>	<ul style="list-style-type: none"><li>• It is less expensive than DBMS.</li></ul>



Thank You