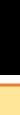


File Based System VS.

Database approach

CSI-406 Database Systems











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Traditional File-based approach



- The term 'file-based approach' refers to the situation where data is stored in one or more separate computer files defined and managed by different application programs.
- Typically, for example, the details of customers may be stored in one file, orders in another, etc.







- Computer programs access the stored files to perform the various tasks required by the business.
- Each program, or sometimes a related set of programs, is called a computer application.







- For example, all of the programs associated with processing customers' orders are referred to as the order processing application.
- The file-based approach might have application programs that deal with purchase orders, invoices, sales and marketing, suppliers, customers, employees, and so on.



File-based approach cont... Limitations



- Data duplication (Redundancy):
- Each program stores its own separate files.
- If the same data is to be accessed by different programs, then each program must store its own copy of the same data.



File-based approach cont... Limitations



- Data inconsistency:
- Data redundancy leads to data inconsistency.
- If the data is kept in different files, there could be problems when an item of data needs updating, as it will need to be updated in all the relevant files; if this is not done, the data will be inconsistent, and this could lead to errors.





File-based approach cont... Limitations



- Difficult to implement data security:
- Data is stored in different files by different application programs.
- This makes it difficult and expensive to implement organization-wide security procedures on the data.



File-based approach vs Database Systems



• The difference between file processing system and database approach is as follow:

File based system	<u>Database system</u>
1. The data and program are inter-	1. The data and program are
dependent.	independent of each other.
2. File-based system caused data	2. Database system control data
redundancy. The data may be	redundancy. The data appeared only
duplicated in different files	once in the system.









File based system	<u>Database system</u>
3. File -based system caused data	3. In database system data always
inconsistency. The data in different files	consistent. Because data appeared only
may be different that cause data	once.
inconsistency.	
4. The data cannot be shared because	4. In database data is easily shared
data is distributed in different files.	because data is stored at one place.
5. In file based system data is widely	5. It provides many methods to maintain
spread. Due to this reason file based	data security in the database.
system provides poor security.	







File based system	<u>Database system</u>
6. File based system does not provide	6. Database system provides a different
consistency constrains.	consistency constrains to maintain data
	integrity in the system.
7. File based system is less complex	7. Database system is very complex
system.	system.
8. The cost of file processing system is	8. The cost of database system is much
less then database system.	more than a file processing system.







File based system	<u>Database system</u>
9. File based system takes much space in the	9. Database approach store data more efficiently
system, and memory is wasted in this approach.	it takes less space in the system and memory is
	not wasted.
10. To generate different report to take a crucial	10. The report can be generated very easily in
decision is very difficult in file based system.	required format in database system. Because
	data in database is stored in an organized
	manner. And easily retrieve to generate report.
11. File based system does not provide	11. Database system provides concurrency
concurrency facility.	facility.
12. File based system does not provide data	12. Database system provides data atomicity
atomicity functionality.	functionality.







File based system	<u>Database system</u>
13. The cost of file processing system is	13. The cost of database system is more
less than database system.	than file processing system.
14. It is difficult to maintain as it	14. Database provides many facility to
provides less controlling facility.	maintain program.
15. If one application fail it does not	15. If database fail it affects all
affects other files in system.	application that dependent on database
16. Hardware cost is less than database	16. Hardware cost is high in database
system	than file system.

