

Zahid Notes

1st Year Computer Science

Chapter 7: Database Fundamentals

Federal Board (FBISE) | Proper Notes for Exam Preparation

PROPER NOTES IN ENGLISH: Detailed explanations, examples, solved short and long answers, MCQs and a revision plan.

These notes are written in original words for practice and exam preparation. They are not a copy of the official textbook and they are not a board paper. Students should also read the textbook, because board questions come from the prescribed syllabus.

1. Introduction and Detailed Explanation

A database is an organised way of keeping data so that it can be found, changed and used easily. Without a database, managing a large amount of data becomes difficult.

In a database, data is kept in tables. A table has rows, which are called records, and columns, which are called fields. Each record is one complete entry, such as the complete record of one student.

A primary key is a field that identifies each record in a unique way, such as a roll number. No two students have the same roll number, so each record can be identified separately by it.

Tables, Records and Fields in Detail

Think of a table as a list. Each row is one student. Each column tells one quality of the student, such as name, class or marks. If a table has 100 rows, it has 100 records. If it has 5 columns, it has 5 fields. This organised form makes searching very easy.

Why Databases are Better than Simple Files

In a simple file, data is written in a long list and searching takes time. In a database, data is organised, duplicate data can be reduced, and many people can use the same data at the same time in a controlled way.

2. Important Definitions

Database

Data kept in an organised way so that it can be found easily.

Table

The form of data in a database, with rows and columns.

Record

One row of a table, which shows one complete entry.

Field

One column of a table, which shows one quality of data, such as name.

Primary Key

A field that identifies each record in a unique way.

3. Solved Short Questions

Q1. What is a database?

It is data kept in an organised way so that it can be found and used easily.

Q2. Differentiate between a record and a field.

A record is one complete row. A field is one column that shows one quality.

Q3. Why is a primary key necessary?

So that each record can be identified in a unique way.

Q4. Give one advantage of a database.

A large amount of data can be found, changed and kept safe easily.

4. Solved Long Questions

Q1. Explain a database with the help of tables, records, fields and primary key.

A database is an organised collection of data. Data in a database is kept in tables. A table has rows and columns. Each row is called a record and shows one complete entry, such as one student. Each column is called a field and shows one quality, such as name or marks. A primary key is a special field that gives a unique identity to each record, such as a roll number. Because of this organised structure, data can be searched quickly, changed safely and used by many people in a controlled way.

5. MCQs, Fill in the Blanks and True / False

1. A row of a table is called:

- A. Field
- B. Record
- C. Key
- D. Data

Correct answer: B

2. A unique identity is given by:

- A. Field
- B. Table
- C. Primary Key
- D. Record

Correct answer: C

3. The purpose of a database is:

- A. To damage data
- B. To keep data organised
- C. To delete data
- D. To hide data

Correct answer: B

6. Important Points and Revision Plan

Table = rows + columns

Record = row, Field = column

Primary key = unique identity

- Read the detail once and write the definitions in your own words.
- Write the short and long answers yourself, then match them with the notes.
- Solve the MCQs and read the important points box again before the test.