# Standard - X

Subject: IT(402)

Topic: Database Management System – Part I
(Unit 3.1 & 3.2)

Let's Learn to

- identify field, record and table in a database

- identify the primary and foreign key in a database

- create and edit tables using wizard and SQL commands

Database

 An organised collection of data.

 Allows to store related data in the form of tables.

Data in each table is stored in rows and columns.
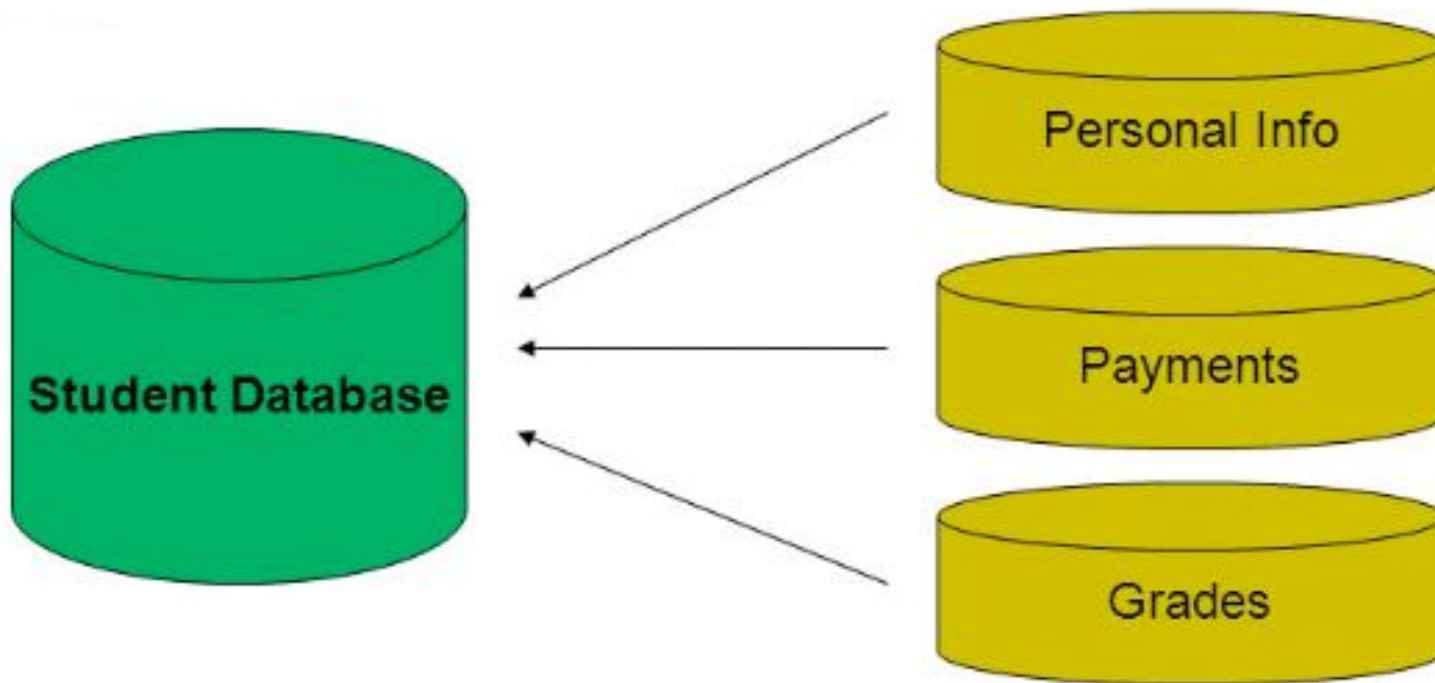
Database Management System

☐ A software package used for creating and managing databases.

☐ Provides tools to store, add, modify, delete data, search for

specific data.

☐ Example: OpenOffice Base, Microsoft Access, SQL, etc.

OpenOffice Base

☐ Provides components like **Tables**, **Queries**, **Forms** and **Reports** to store, display and print your data in a organised manner.
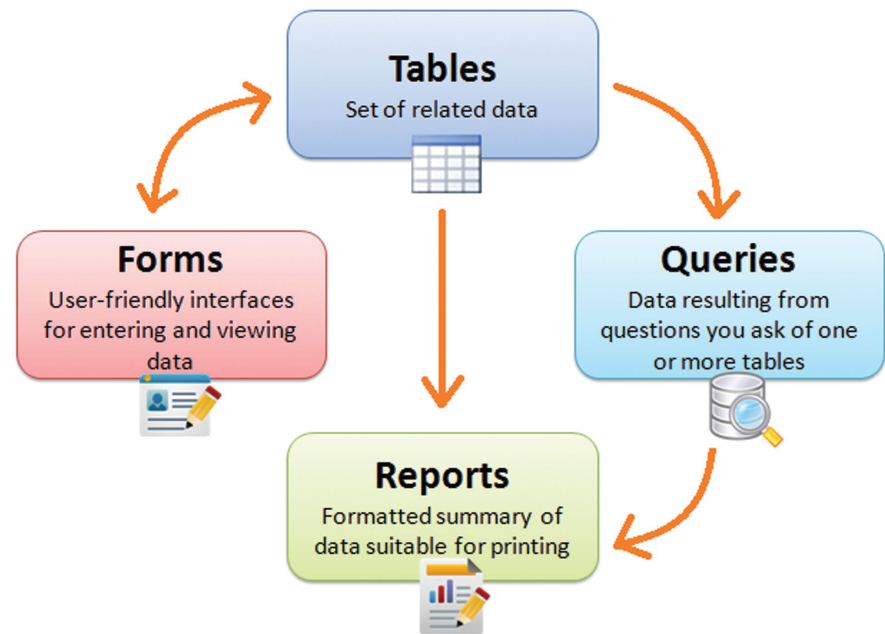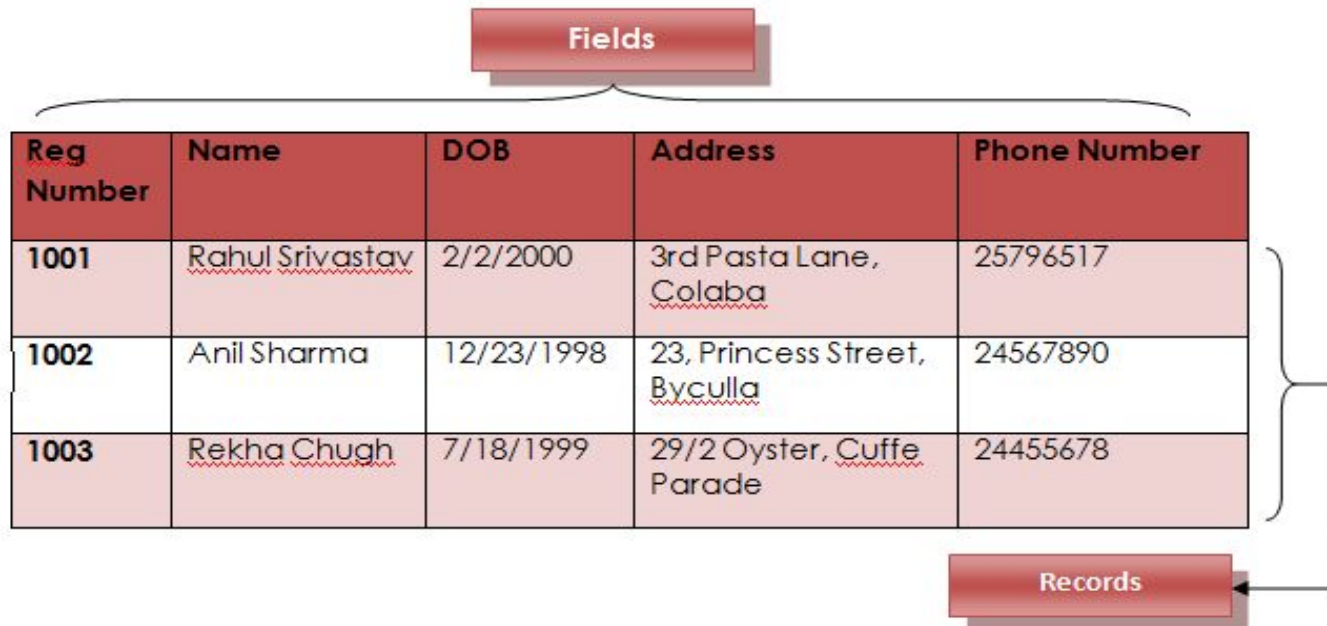
Elements of a database

Tables: Shows the records in an organised manner

Records: All of the data or information about a person or thing.

Fields: One piece of data or information about a person or thing.

Fields

Reg Number	Name	DOB	Address	Phone Number
1001	Rahul Srivastav	2/2/2000	3rd Pasta Lane, Colaba	25796517
1002	Anil Sharma	12/23/1998	23, Princess Street, Byculla	24567890
1003	Rekha Chugh	7/18/1999	29/2 Oyster, Cuffe Parade	24455678

Records

Datatypes

Text (fix) - Text with a fixed amount of characters

Text (Default) - Text or combinations of text and numbers

Number - Numeric data used in mathematical calculations

Integer - Number to which Auto Value can be applied

Date/Time - Date and time values

Yes/No - Yes and No values and fields that contain only one of two values (Yes/No, True/False, or On/Off).

Creating a Database

Step 1: Click the **Start** button

Step 2: Click **All Programs** and select **OpenOffice Base**. The **Database Wizard** window appears.
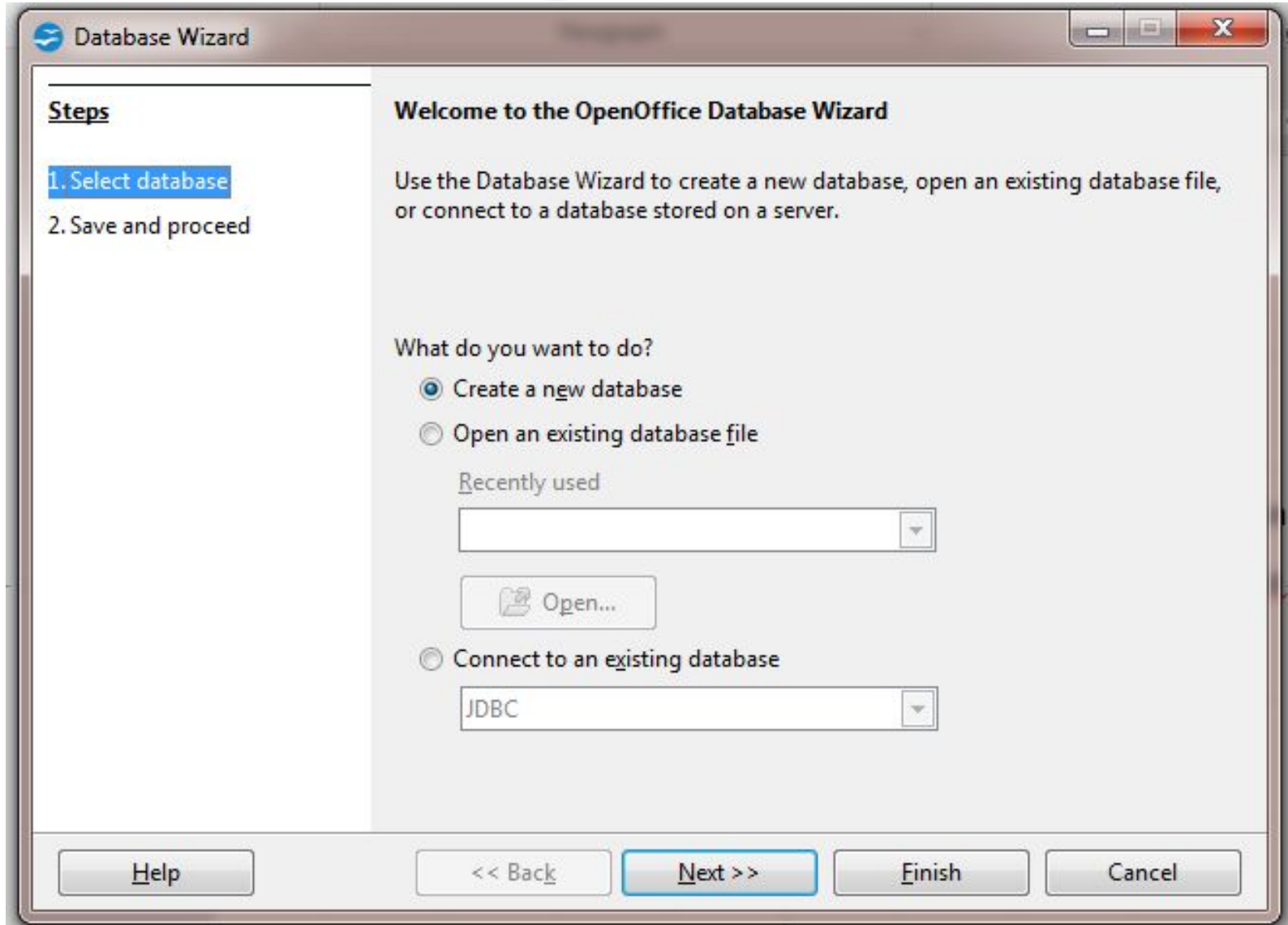
Step 3: Select the **Create a new database o**ption and click the **Next** button.

Step 4: In the **Save and proceed** step, register the database in OpenOffice and open the database file for editing once it has been saved.
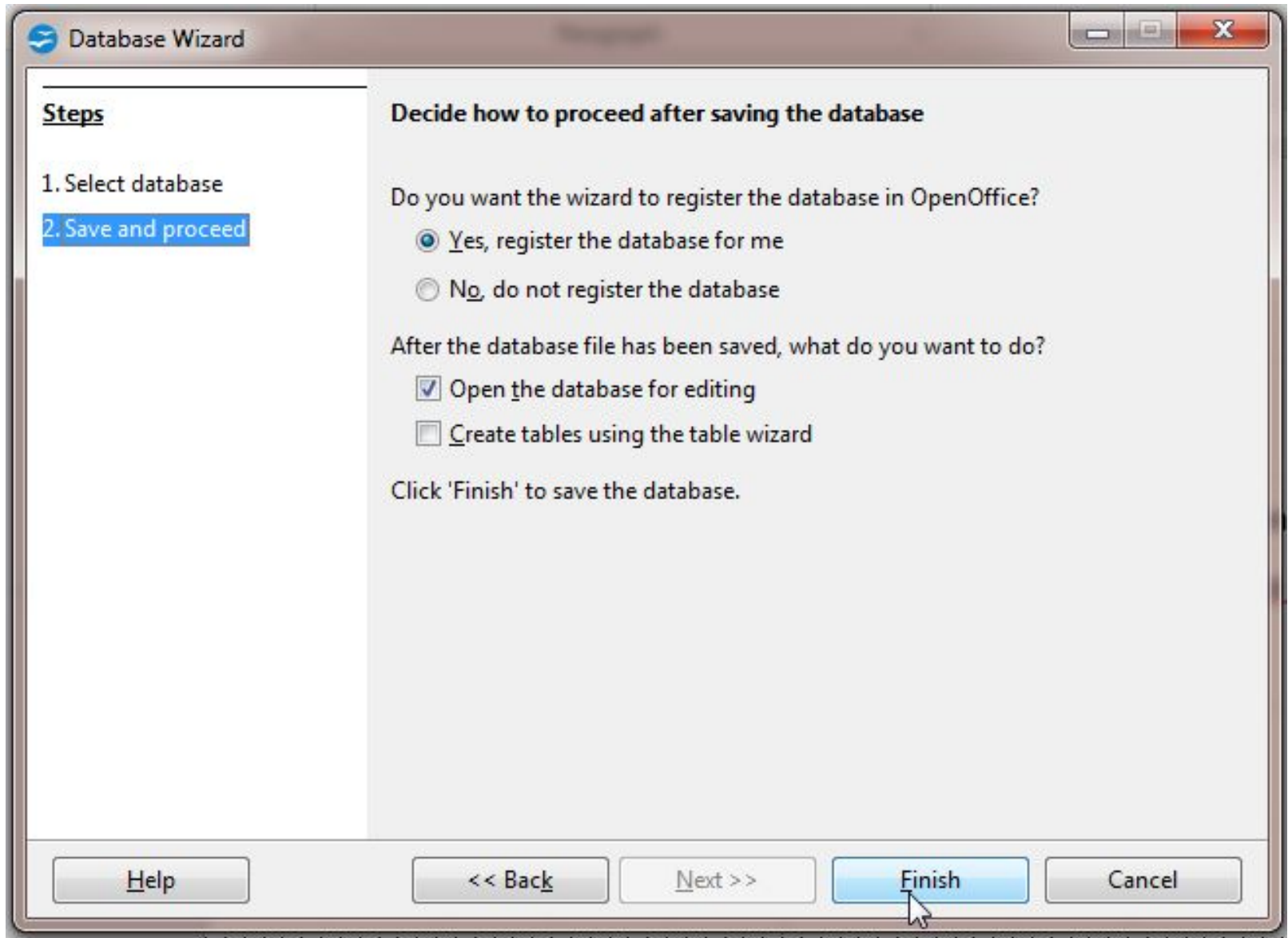
Click the **Finish** button to save the database.

Step 5: The **Save As** window appears. You can specify the name of the database and click on the **Save** button.
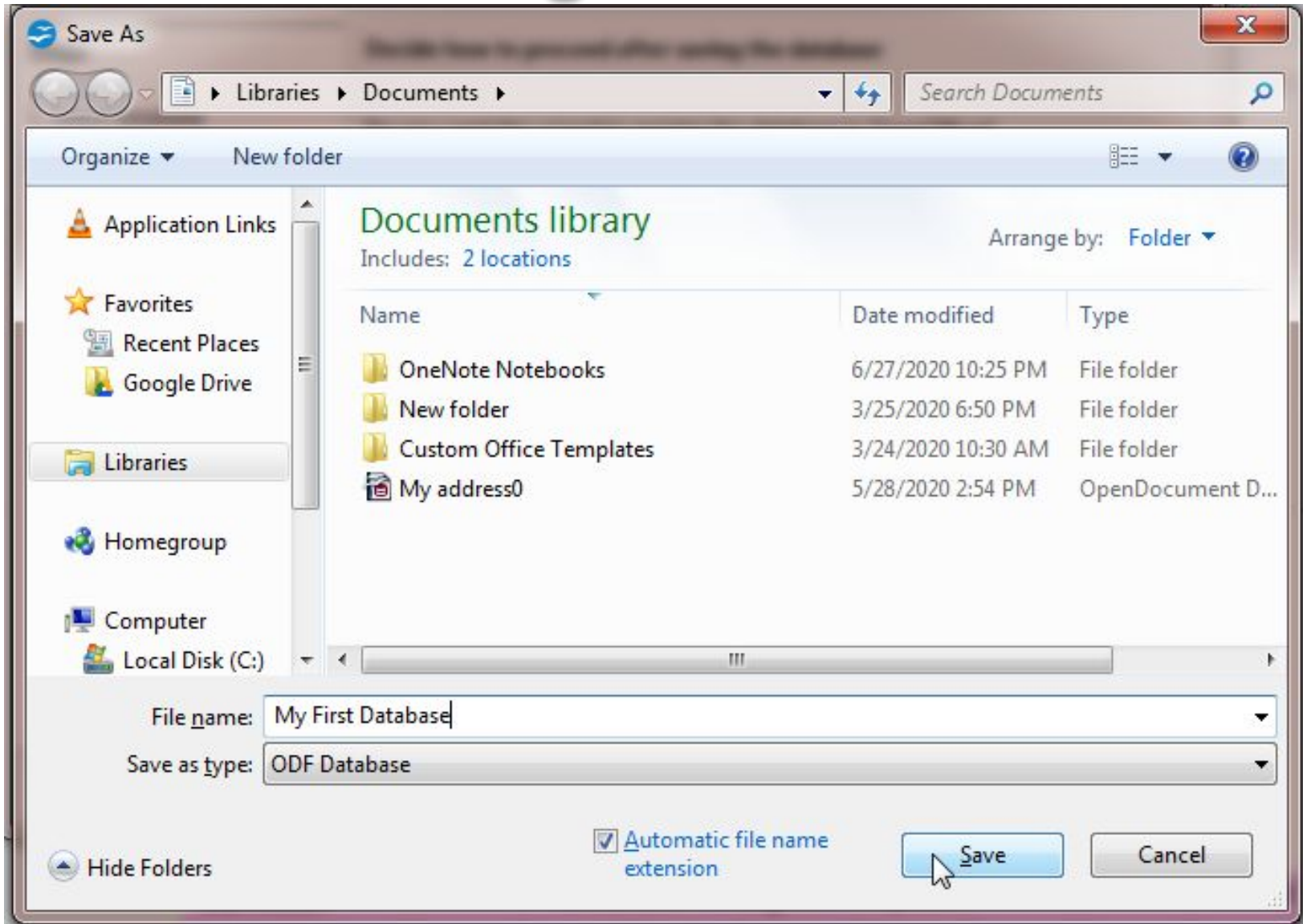
Creating a Database

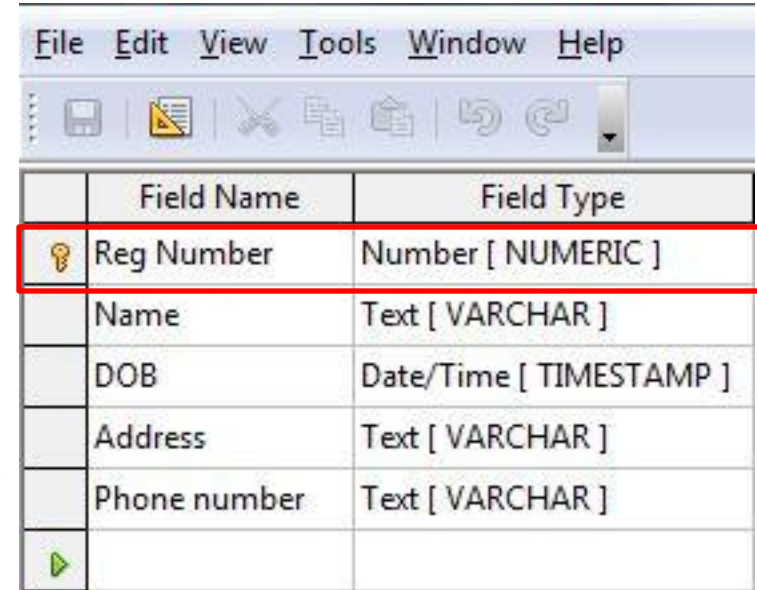# Creating a Database

Database Management System

Creating a Database

Primary Key

A **primary key** is one field whose values uniquely identify each record in a table.

It does not allow blank values.

It is used to relate a table to other tables.

To make/remove a field as **primary key,** right click on the field or select the field and click on the **Primary key** button.

You can set **AutoValue** to "Yes", so Base can automatically increment the value for each new record.

	Field Name	Field Type
🔑	Reg Number	Number [NUMERIC]
	Name	Text [VARCHAR]
	DOB	Date/Time [TIMESTAMP]
	Address	Text [VARCHAR]
	Phone number	Text [VARCHAR]
▷		

Foreign Key

 A **foreign key** is a key used to link two tables together.

 A **foreign key** is a field (or collection of fields) in one table that

refers to the primary key in another table.

 The relationship between 2 tables matches the Primary Key in

one of the tables with a Foreign Key in the second table

Example

Primary key

Person's table

PersonID	LastName	FirstName	Age
1	Hansen	Ola	30
2	Svendson	Tove	23
3	Pettersen	Kari	20

Order's table

OrderID	OrderNumber	PersonID
1	77895	3
2	44678	3
3	22456	2
4	24562	1

Foreign key

Create Table in Design View

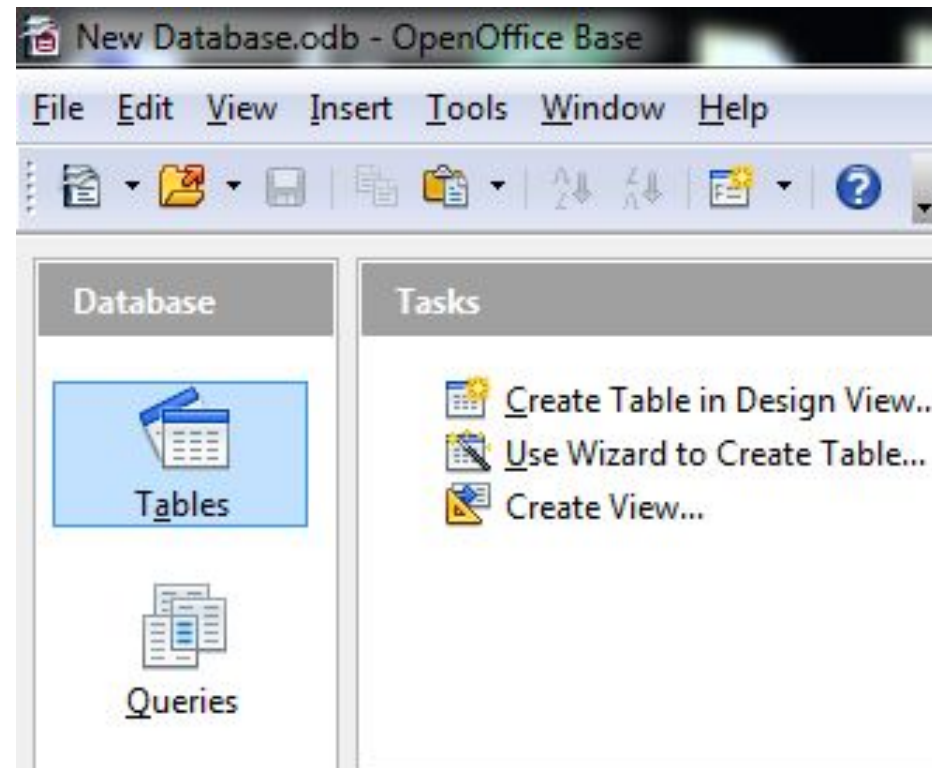**Step 1:** Click the **Field Name** cell and type the field name for each data field

Step 2: Click the **Field Type** cell and select the field type from the combo box.

OpenOffice Base automatically creates a table which is named **Table1**.

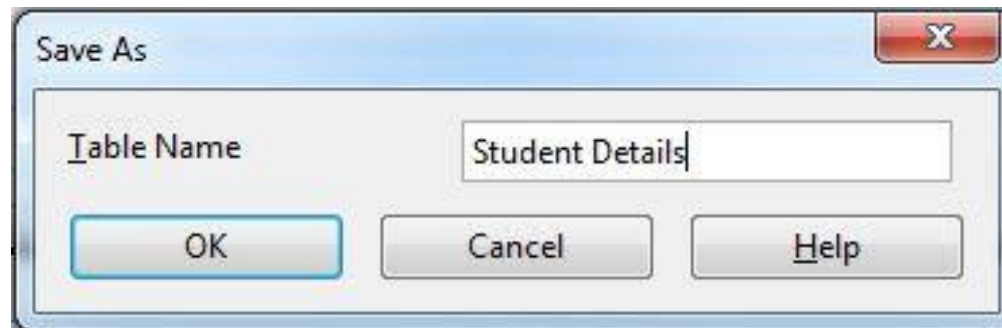You can change the name of this table by clicking the **File menu**->**Save As** option and specifying the table name.

Create Table using Design View

Create Table using Wizard

SQL

☐ SQL stands for Structured Query Language.

☐ It is a standard language for accessing and manipulating databases.

☐ It allows you execute queries and retrieve data from a database.

☐ It allows you to insert, update and records from a database.

☐ It also allows you to create new databases or create new tables in a database.

Types of SQL commands

Data Definition Language(DDL) is used to define data structures.

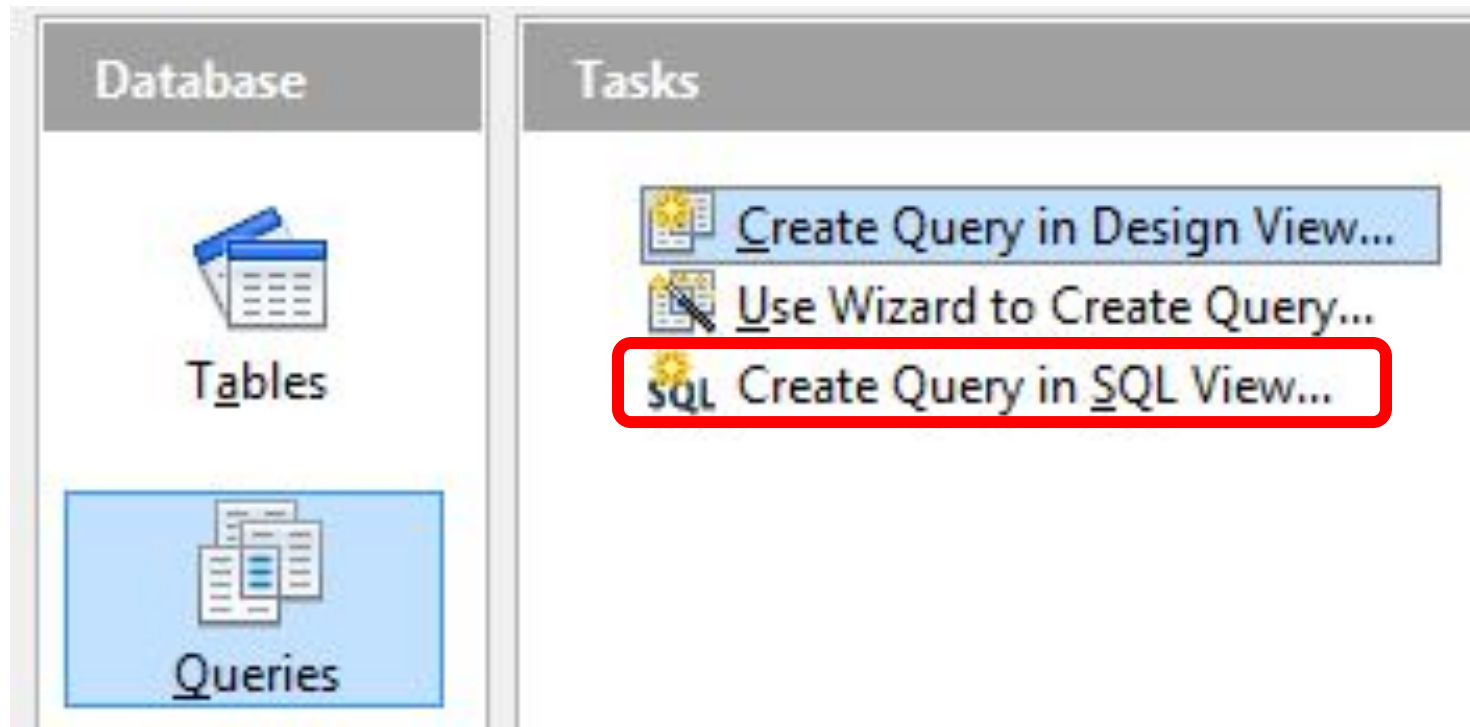**For example:** create table, alter table are instructions in SQL.

Data Manipulation Language(DML) is used to manipulate data itself.

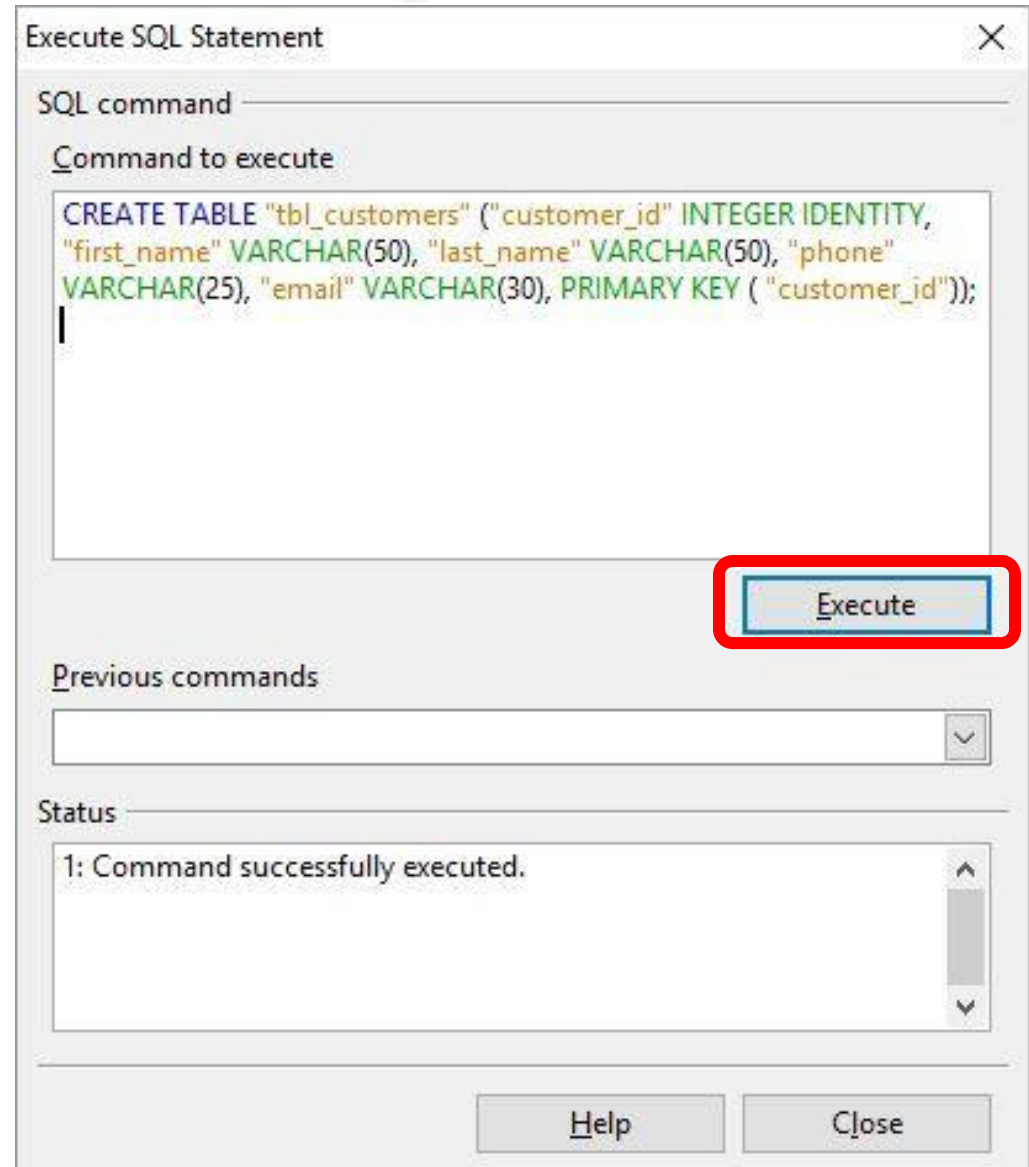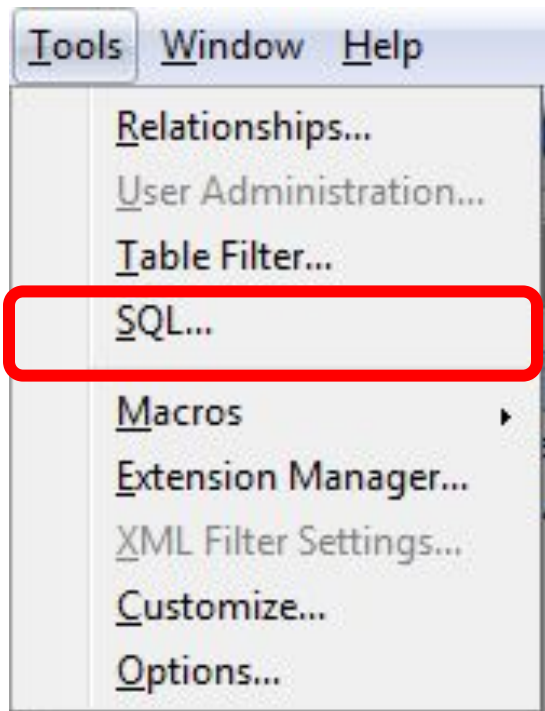**For example:** insert, update, delete are instructions in SQL.

SQL commands

To create a table using SQL, go to

Queries -> Create Query in SQL view

Create table using SQL

Tools -> SQL

Execute SQL Statement   ✕

SQL command

Command to execute

```
CREATE TABLE "tbl_customers" ("customer_id" INTEGER IDENTITY,
"first_name" VARCHAR(50), "last_name" VARCHAR(50), "phone"
VARCHAR(25), "email" VARCHAR(30), PRIMARY KEY ( "customer_id"));
```

Execute

Previous commands

Status

1: Command successfully executed.

Help   Close

Tools   Window   Help

Relationships...
User Administration...
Table Filter...
SQL...
Macros   ▶
Extension Manager...
XML Filter Settings...
Customize...
Options...

Thank You!