

Exercise 1

Create Tables

Suppose you are provided with the following ER diagram. Only the primary keys and the intersection data are shown in the diagram. How could you implement it using Access? Use Relational Model.

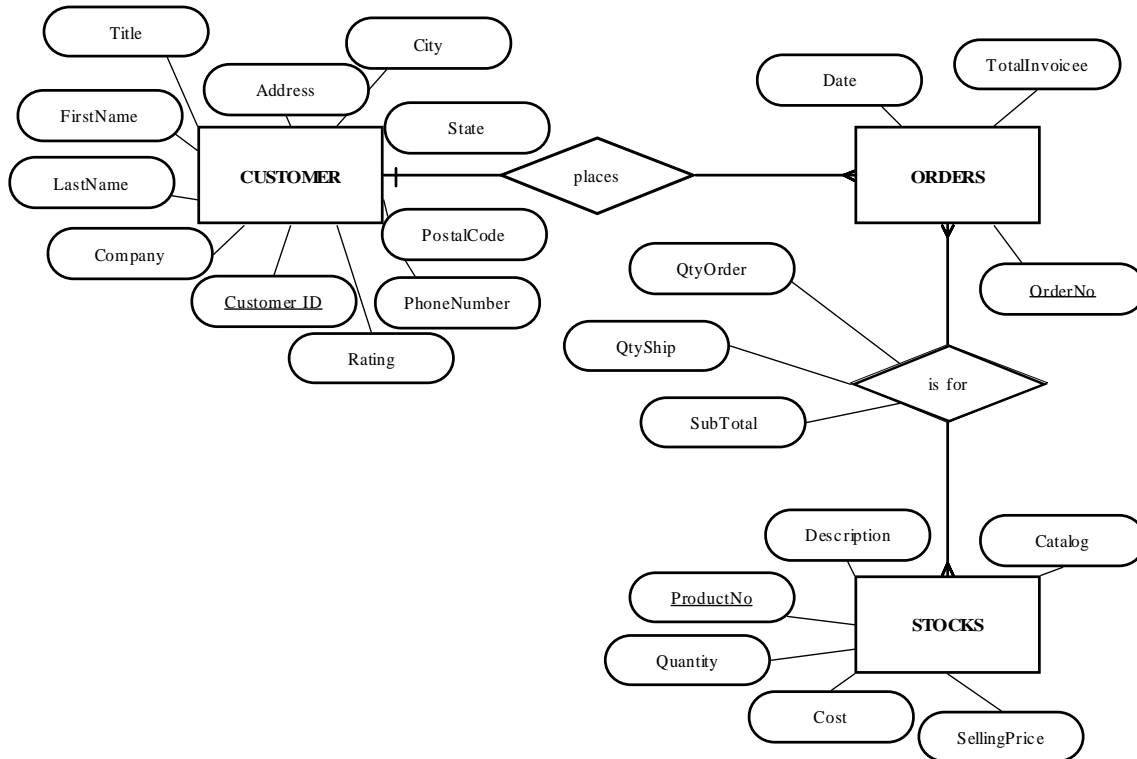


Figure 1: ER diagram for exercise

MINI-EXERCISE

- I. Develop your relational model below

In Access, under the File Menu, choose New..., select Database from New options (Fig 2). Give your database a name eg. Stock.mdb (Note: An Access Database file has the extension “.mdb”) and a location to be saved. In this case, the name is **db1.mdb**.

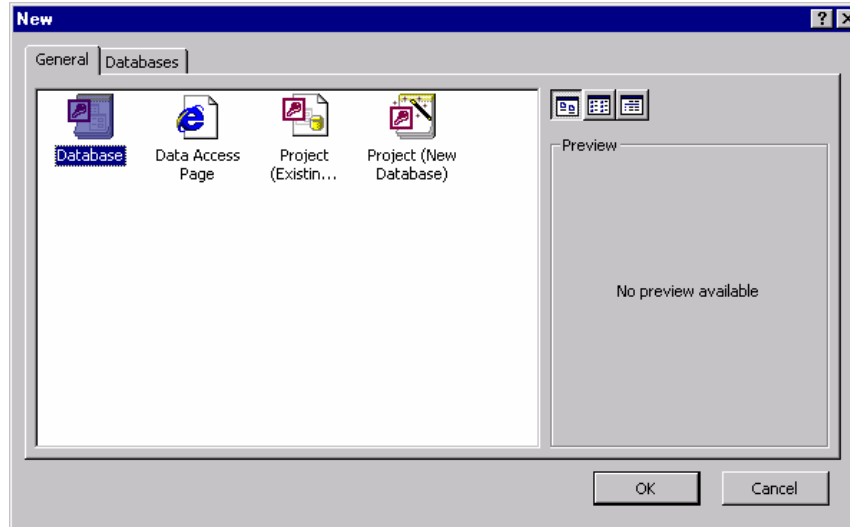


Figure 2: creating new database

After you create a file, the Database Window will pop up. It organizes our tables, queries, forms, and reports.

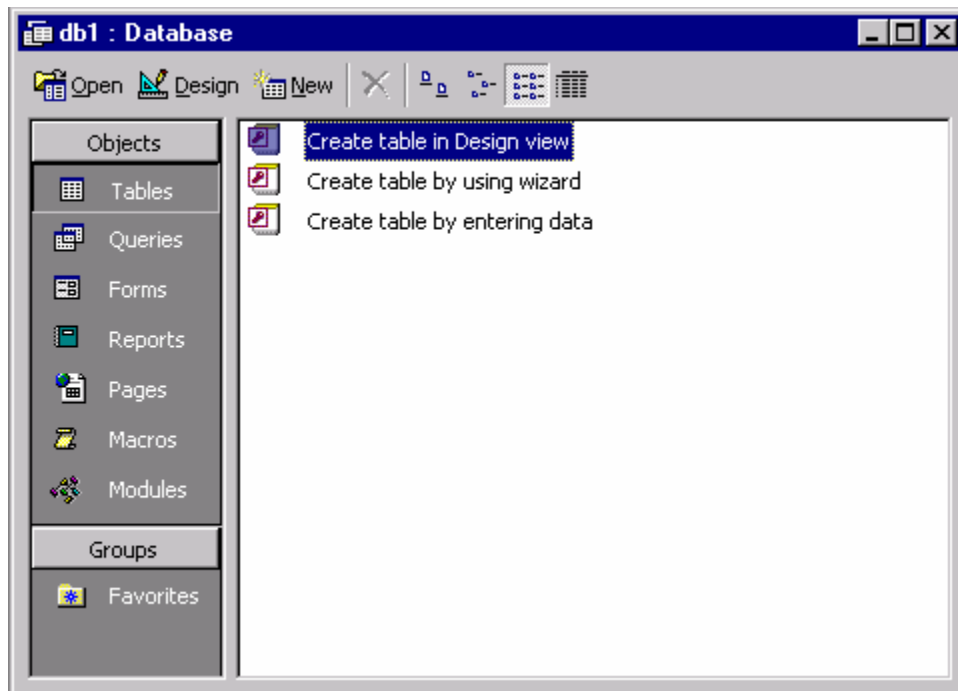


Figure 3: Database Window

These are the Relational Tables that we have to implement:

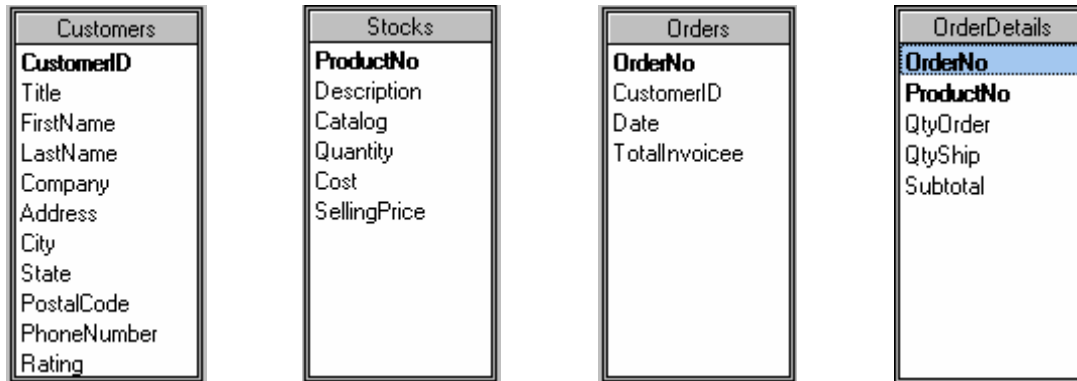


Figure 4: Tables We Have Developed From the E-R Diagram

To create a new table, click on *Create table in Design View* in the *Tables* menu. See fig. 2 above.

MINI-EXERCISE

- II. Set up tables
Be able to select the Correct Data Type for each field:

<i>Type</i>	<i>Definition</i>
AutoNumber	Automatically creates a unique value for each record entered
Integer	Integers (no decimals) from -32,768 to 32,767 (2 bytes)
Long Integer	Integers (no decimals) from -2,147,483,648 to 2,147,483,647 (4 bytes)
Decimal	Largest decimal with most precision (12 bytes, decimal precision: 28)
Single	Smallest decimal with least precision (4 bytes, decimal precision: 7)
Double	Decimal with more precision (8 bytes, decimal precision: 15)

- III. Be able to define Field Properties for each field of the Table

Primary Key
To set primary Key, **right** click the box beside CustomerID, then choose Set Primary Key. (For multiple fields select them while holding down the ctrl key.)

Field Name	Data Type	Description
CustomerID	Number	
Title	Text	
FirstName	Text	
LastName	Text	
Company	Text	

Field Properties

General | Lookup

Field Size	Long Integer
Format	
Decimal Places	Auto
Input Mask	
Caption	
Default Value	0
Validation Rule	
Validation Text	
Required	No
Indexed	Yes (No Duplicates)

The data type determines the kind of values that users can store in the field. Press F1 for help on data types.

Figure 5: Design View For Creating Table

Field Size applies only to Text, Number, and AutoNumber Type Fields. For a text field you can have from 0 to 255 characters. For Numeric Type, you can select from a drop down box the following choice:

Format applies to all fields except OLE¹ object (not covered in this class). You use this to control the display of the data items in table. You can custom format into the Format text box, using special characters that represent particular formatting options. Most of it will be provided from a drop-down list of pre-defined formats.

Decimal Places applies only to Number and Currency fields. Specifies the number of digits that will appear after the decimal point in a numeric value.

Caption applies to all types of fields. This property supplies an alternative caption for a field when you include the field on a form or view it as a Datasheet. (The default is simply the field name you provide when you create the fields)

Default Value applies to all fields except AutoNumber fields. This property allows you to supply a default value for any given record.

Validation Rule applies to all fields except AutoNumber fields. The setting of this property is typically a conditional expression that serves as a test for new entries into this field. Access will display an error message on the screen if the expression is violated.

Validation Text applies to the error message Access will display if the validation rule is not satisfied.

Indexed applies to Number, AutoNumber, Currency, Text and Date/Time fields. A **Yes** setting in this field instructs Access to create an index for performing search and sort operations on the field. You can select **Yes (no duplicate)** option to prevent duplicate entries in the field column; or you can select **Yes (duplicates OK)** to allow duplicate entries. Note that the setting for the primary key is **Yes (No duplicates)** otherwise in this class, you would set it to **No**.

¹ Object Linking and Embedding

Stocks : Table

Field Name	Data Type	Description
Catalog	Text	
Quantity	Number	
Cost	Currency	
SellingPrice	Currency	

Field Properties

General | **Lookup**

Format: Currency
Decimal Places: Auto
Input Mask:
Caption:
Default Value: 0
Validation Rule:
Validation Text:
Required: No
Indexed: No

Options for Indexed: No, Yes (Duplicates OK), Yes (No Duplicates)

Figure 6: Index choice

MINI-EXERCISE

IV. Try to create validity checks:

1. Catalog in Stocks Table - Only H or S or F are valid
2. Quantity in Stocks Table - Have to be ≥ 0