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.
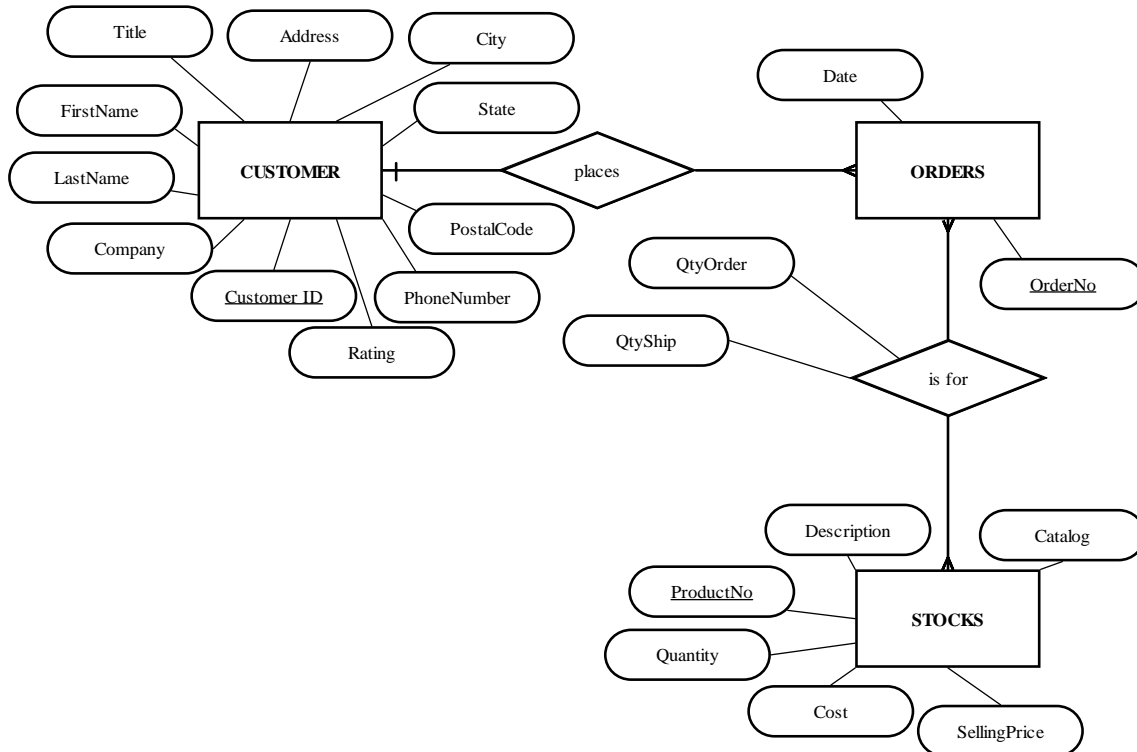

Figure 1: ER diagram for exercise

MINI-EXERCISE

I.   Develop your relational model below

 In Access, on the Menu page, choose Blank Database (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, Access will automatically bring you to the view of the tables (see Figure 3)
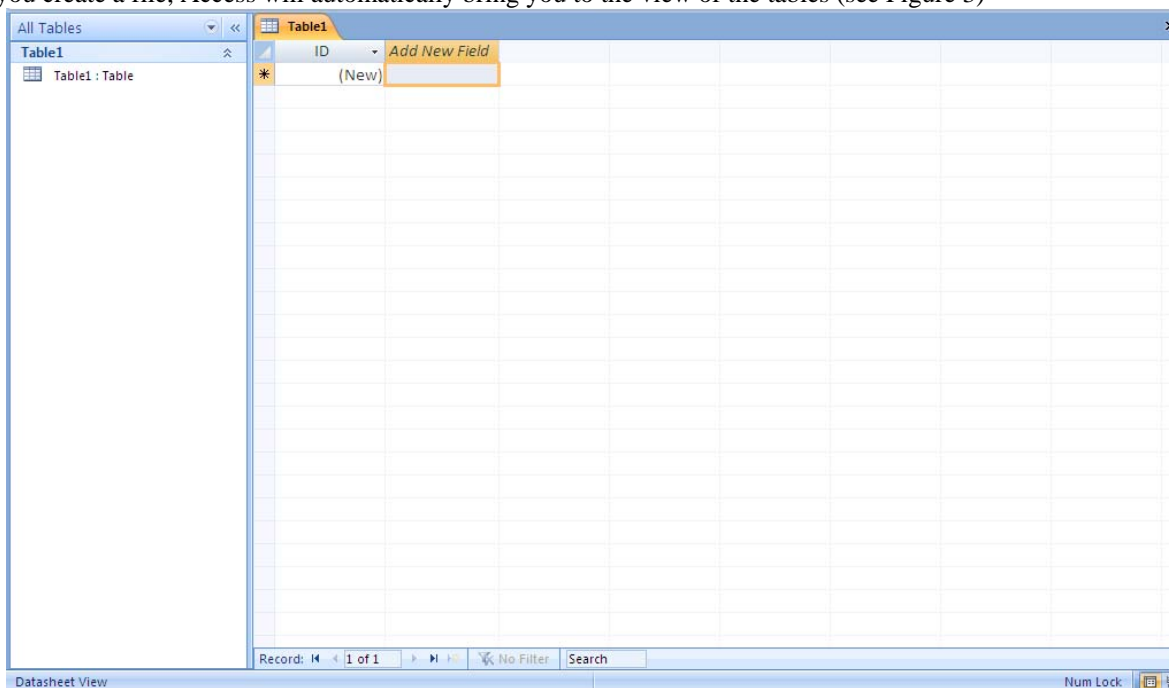
Figure 3: Database Window

These are the Relational Tables that we have to implement:

Customers	Stocks	Orders	OrderDetails
CustomerID	**ProductNo**	**OrderNo**	**OrderNo**
Title	Description	CustomerID	**ProductNo**
FirstName	Catalog	Date	QtyOrder
LastName	Quantity	TotalInvoicee	QtyShip
Company	Cost		Subtotal
Address	SellingPrice		
City			
State			
PostalCode			
PhoneNumber			
Rating			

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

To create a new table, click on *View* then change the format to *Design View*. A pop-up window will appear: save table as the table name. (e.g. Customers)

MINI-EXERCISE

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

Type	Definition
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.)
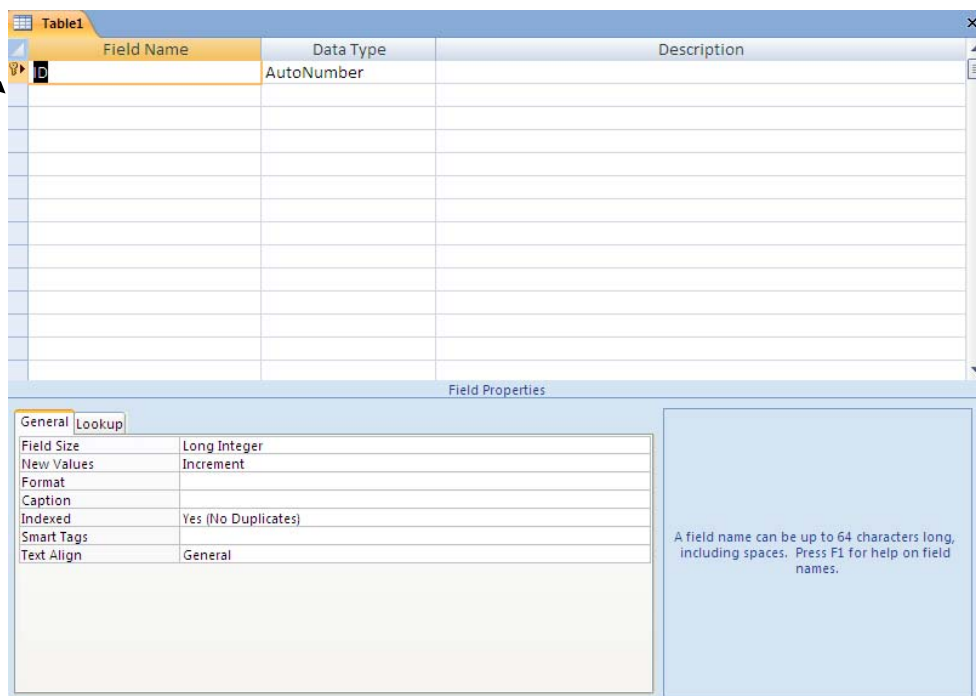
Figure 5: Design View For Creating Table

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 OLE[1] 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*.

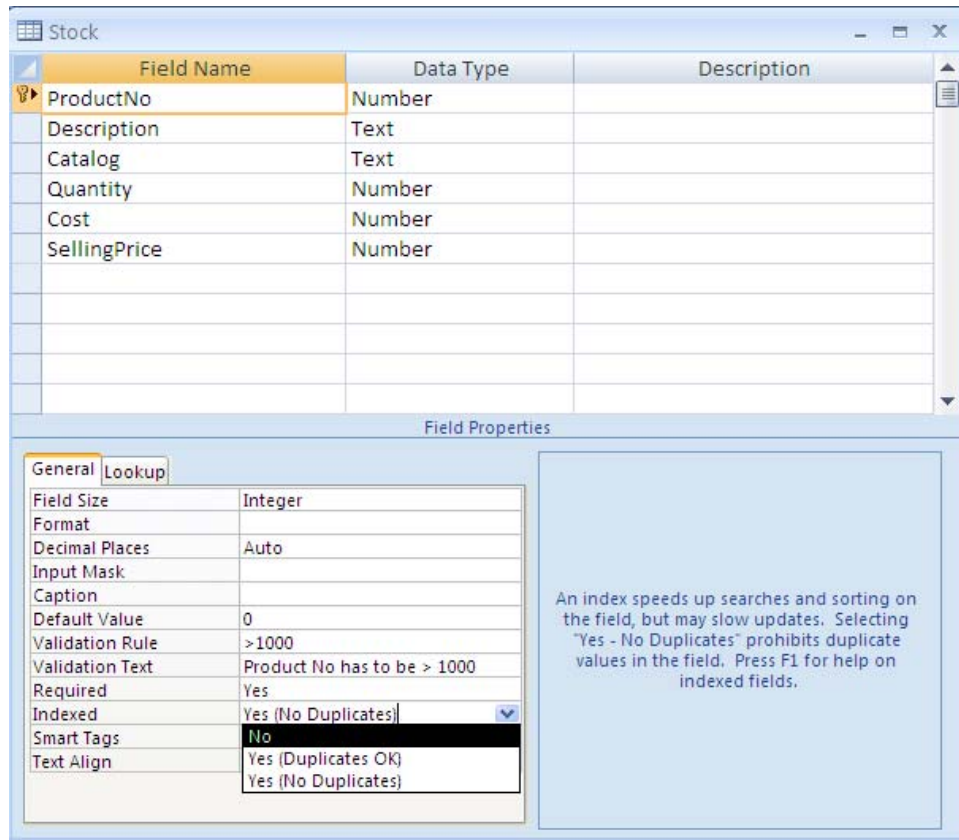[1] Object Linking and Embedding

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