
University Information
Technology Services

# Microsoft Access 2010

Level 2

University Information Technology Services

Training, Outreach, Learning Technologies and Video Production

**Published by Kennesaw State University – UITS 2011**
The publisher makes no warranties as to the accuracy of the material contained in this document and therefore is not responsible for any damages or liabilities incurred from its use.

# University Information Technology Services

Access 2010 Level 2

**Table of Contents**

## Contents

# Introduction

Microsoft Access allows people to effectively and efficiently organize data. This document, Level 2, has been developed to show you how to use multiple tables in Access. The various sections presented in this document will help you build a solid knowledge foundation of the software.

When you have mastered the objectives in this document, you can expand upon your knowledge of Microsoft Access by checking out the Level 3 documentation.

# Objectives

The following objectives are covered in this document:

- Understanding the concept of relationships as they relate to tables.
- Knowing how to define data types for relationships.
- Having the ability to create a relationship.
- Understanding relationships and forms.
- Knowing how to create a form for a two table relationship.
- Knowing how to create a tab form for a multi-table relationship.

# Relationships and Tables

The power of Access is the software's ability to create and maintain multiple tables. Access allows multiple tables to work together thereby giving you strong database management capabilities.

## Level 1 Booklet/Workshop

In the Level 1 booklet/workshop, a foundation was created by presenting the use of one table in Access. In Level 1, the following table was created for an airline:

| **Airline Reservation System** |
|---|
| *Transaction Number* |
| *Transaction Date* |
| *First Name* |
| *Last Name* |
| *Departure City* |
| *Destination City* |
| *Meal* |
| *Ticket Cost* |
| *Departure Date* |
| *Departure Time* |

*Figure 1* – Table for an Airline Reservation System

## Using Multiple Tables in the Access Database

Users of Access begin to utilize the full strength of the system when they use multiple tables to manage data. For example, the following are two tables that could be used by a retail store that sells products to customers.

| **Customer Information** |
|---|
| *Customer Number* |
| *First Name* |
| *Last Name* |
| *Address* |
| *City* |
| *State* |
| *Zip Code* |
| *Phone Number* |
| *Email* |

| **Purchases** |
|---|
| *Purchase ID* |
| *Customer Number* |
| *Product Name* |
| *Quantity* |
| *Unit Price* |

*Figure 2* – Two Tables for a Retail Store Database

It would be ineffective to attempt to include all of the fields presented in *Figure 2* in one table. It is much more efficient to create two tables and categorize the various fields within these tables.

An effective database used in the "real world" by a business, educational facility, governmental agency, etc. would ultimately have many tables.

## Relationships Explained

When developing a database with multiple tables, it is important to understand relationships. Relationships allow the different tables to communicate with each other. When creating different tables, there must be one field that is common to the different tables. *Figure 3* shows that the *Customer Number* field is common to both tables.

| **Customer Information** |
|---|
| *Customer Number* |
| *First Name* |
| *Last Name* |
| *Address* |
| *City* |
| *State* |
| *Zip Code* |
| *Phone Number* |
| *Email* |

| **Purchases** |
|---|
| *Purchase ID* |
| *Customer Number* |
| *Product Name* |
| *Quantity* |
| *Unit Price* |

*Figure 3* – Two Tables for a Retail Store Database

## Relationships and Data Types

When developing multiple tables, the *Data Type* for the common field will be defined differently in the various tables. For example, *Figure 4* shows that the *Data Type* for *Customer Number* is defined as *AutoNumber* in the *Customer Information* table because this table is where the number is created. Notice that this number is also the *Primary Key*.

Customer Information

| Field Name | Data Type |
|---|---|
| Customer Number | AutoNumber |
| First Name | Text |
| Last Name | Text |
| Address | Text |
| City | Text |
| State | Text |
| Zip Code | Text |
| Phone Number | Text |
| Email | Text |

*Figure 4* – *Customer Number* Defined as an *AutoNumber*

In the *Purchases* table, *Figure 5* shows that *Customer ID* is defined as a *Number*. Also, notice that it is not defined as the *Primary Key*.

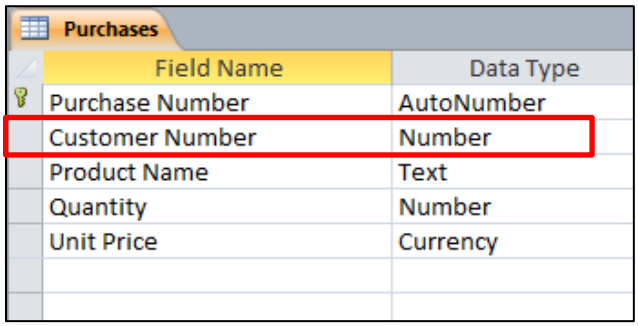


*Figure 5 – Customer Number* Defined as a *Number*

## How to Create the Relationship

The following explains how to create a relationship between two tables in Access.

1. Be sure to close both tables.
2. From the *Database Tools* tab, click *Relationships* (see *Figure 6*).

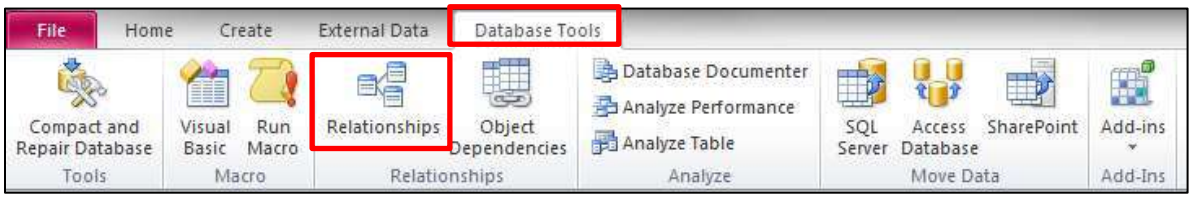


*Figure 6* – Relationships Button

3. In the *Show Table* dialogue box, select each table and click the *Add* button (see *Figure 7*).

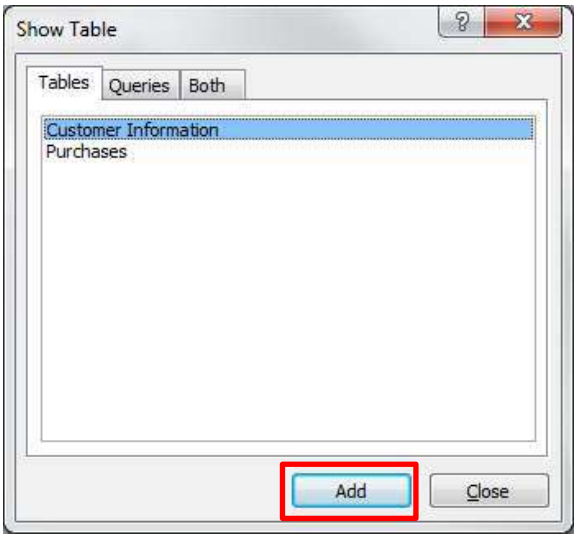


*Figure 7* – Show Table Dialogue Box

4. Both of the tables will be added to the *Relationships* window (see *Figure 8*). Next, click the *Close* button in the *Show Table* dialogue box.

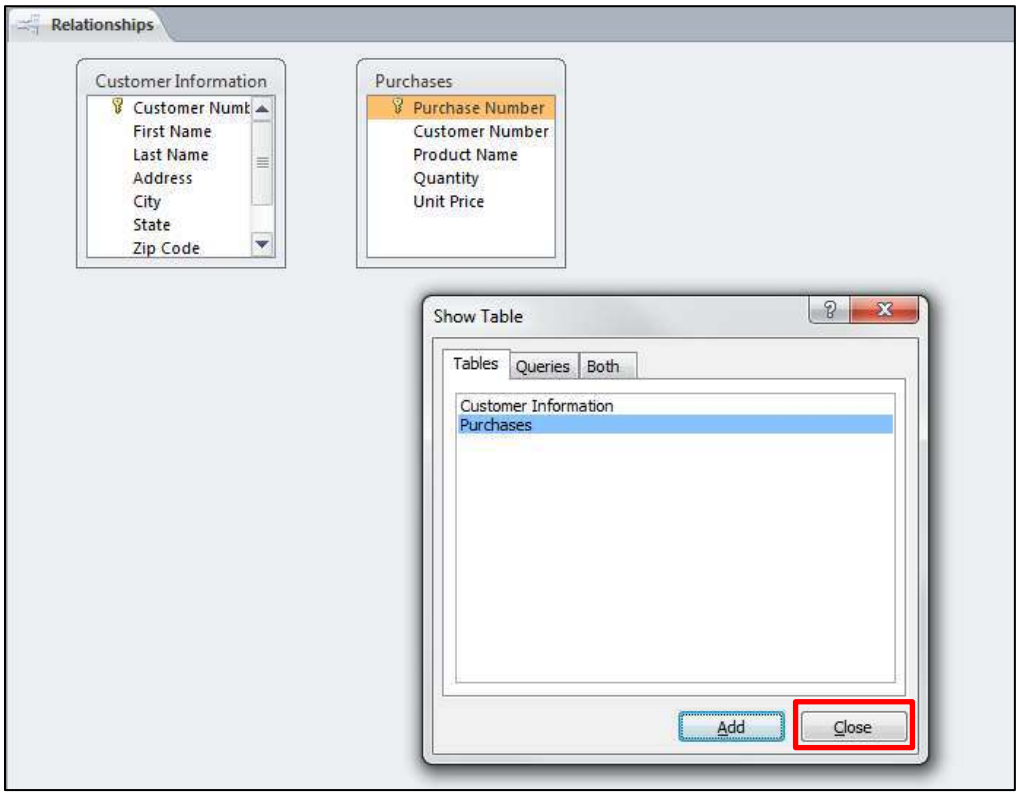


*Figure 8 – Show Table* Dialogue Box

5. Next, click to select *Customer Number* (see *Figure 9*), in the *Customer Information* table.

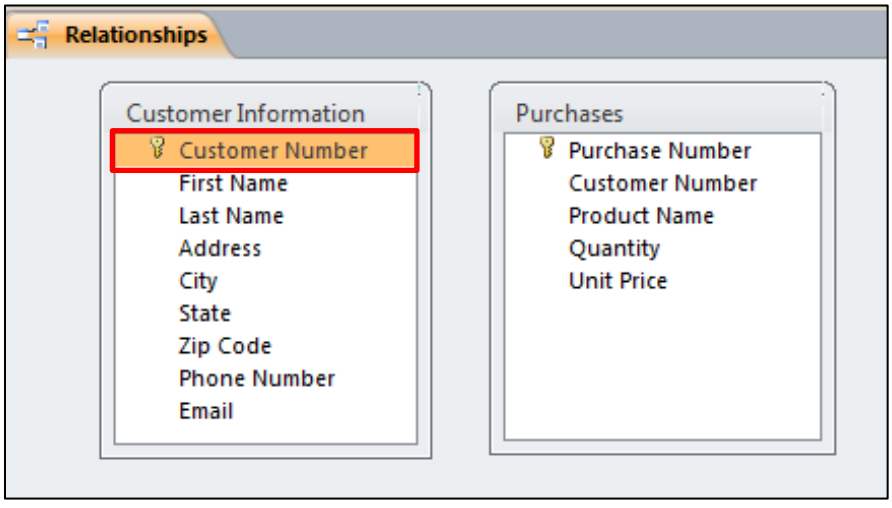


*Figure 9* – Click to select *Customer Number*

6. Allow your mouse pointer to hover over *Customer Number* in the *Customer Information* table and hold down your left mouse button. As you hold down the left mouse button, move your mouse pointer so that it hovers over *Customer Number* in the *Purchases* table. At this point, release the mouse button that you have been holding down (see *Figure 10*).

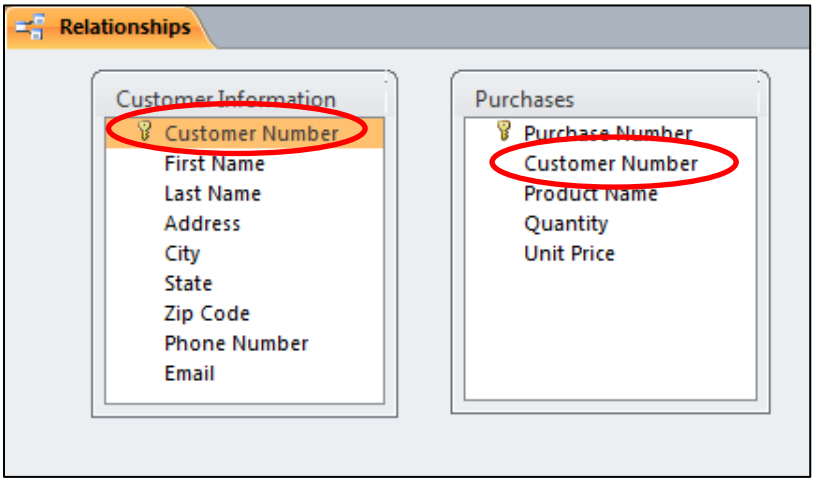


*Figure 10* – Creating the Relationship

7. The *Edit Relationships* dialogue box (see *Figure 11*) will appear. Click to select the box for *Enforce Referential Integrity* (see *Figure 11*) and click the *Create* button.

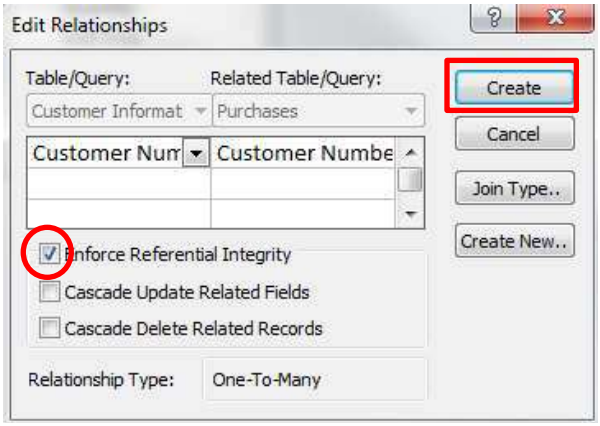


*Figure 11 – Edit Relationships* Dialogue Box

| **What happens when you enforce referential integrity?** |
|---|
| 1. *If the record doesn't exist in the primary key field of the primary table, it can't be entered in another related table.* |
| 2. *The record can't be deleted from the primary table if there is a record that relates in another related table.* |
| 3. *The primary key number cannot be changed in the primary table if there is a record that relates to it in another related table.* |

*Figure 12* – What happens when you enforce Referential Integrity?

8. The relationship will be established (see *Figure 13*).

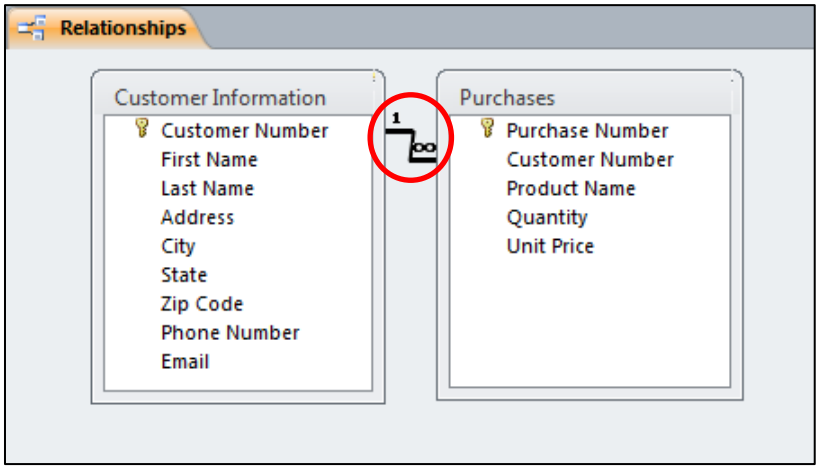


*Figure 13* – The Relationship Established

**NOTE:** *Relationships aren't always for just two tables. If you had three or more tables in your database, you could also form relationships for those other tables as well. To do this, you would simply add the table to the relationships window (steps 1-4 on pages 7-8) and follow steps 5-8 on pages 8-10.*

9. Click the *Close* button (see *Figure 14*) to exit the *Relationship Tools* screen. When prompted, click *Yes* to save the relationship that you created.

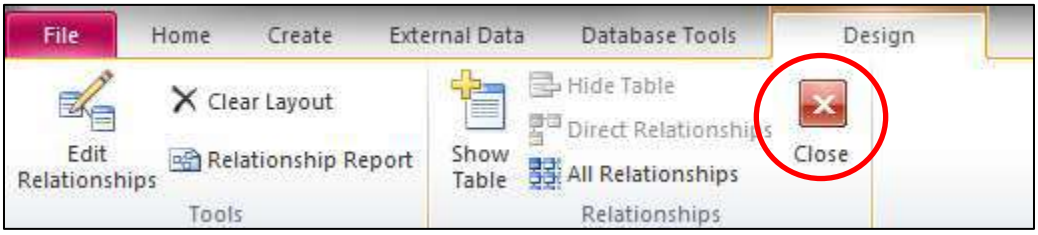


*Figure 14* – Close Button

# Relationships and Forms

There are many different ways to develop forms when you have relationships among different tables established. The following are some popular design techniques.

## Creating a Form for a Two Table Relationship

The following is an example of how to develop a form for a two table relationship. The tables within the database are *Customer Information* and *Purchases* (see *Figure 15*).

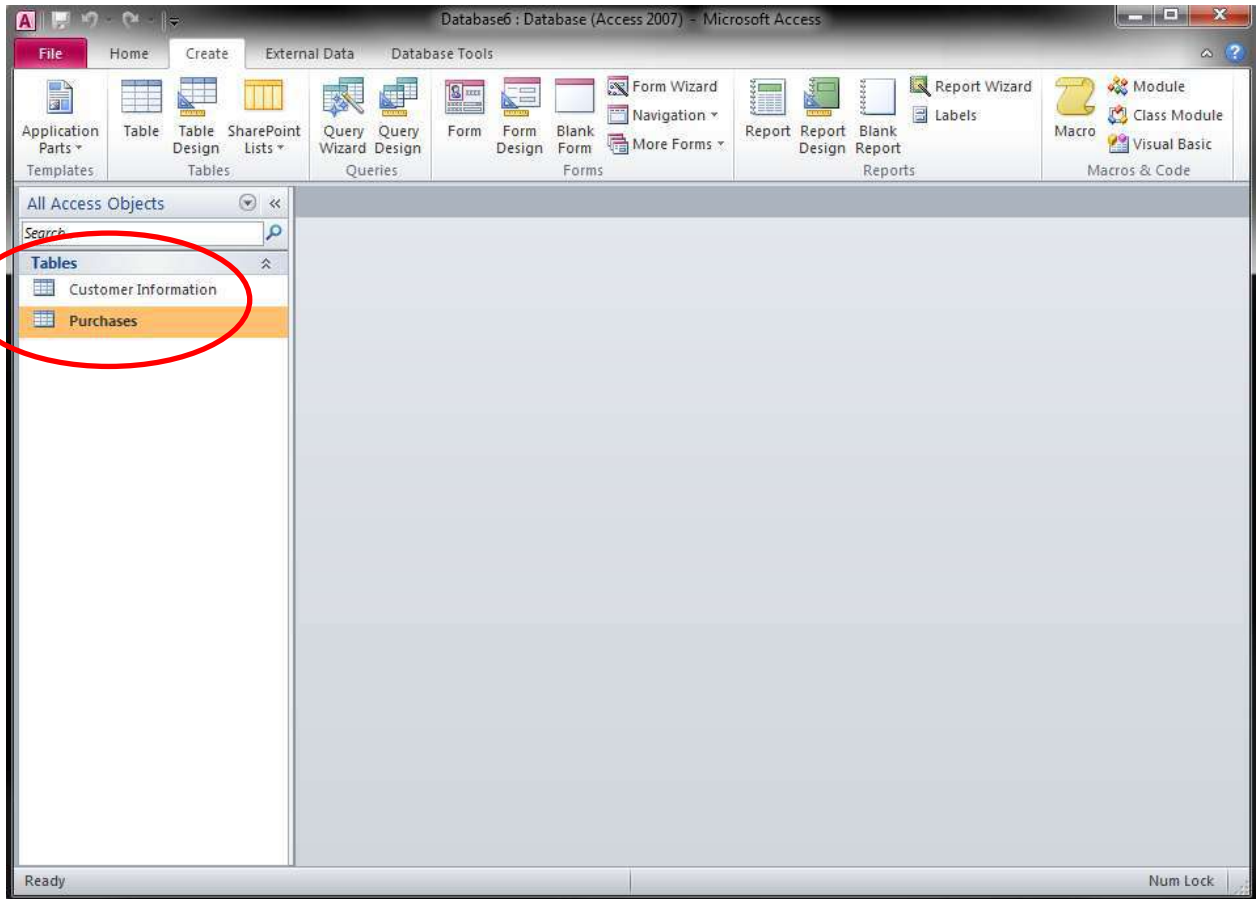


*Figure 15* – Customer Database with Two Tables

1. Create a form for the *Customer Information* table (see *Figure 16*).

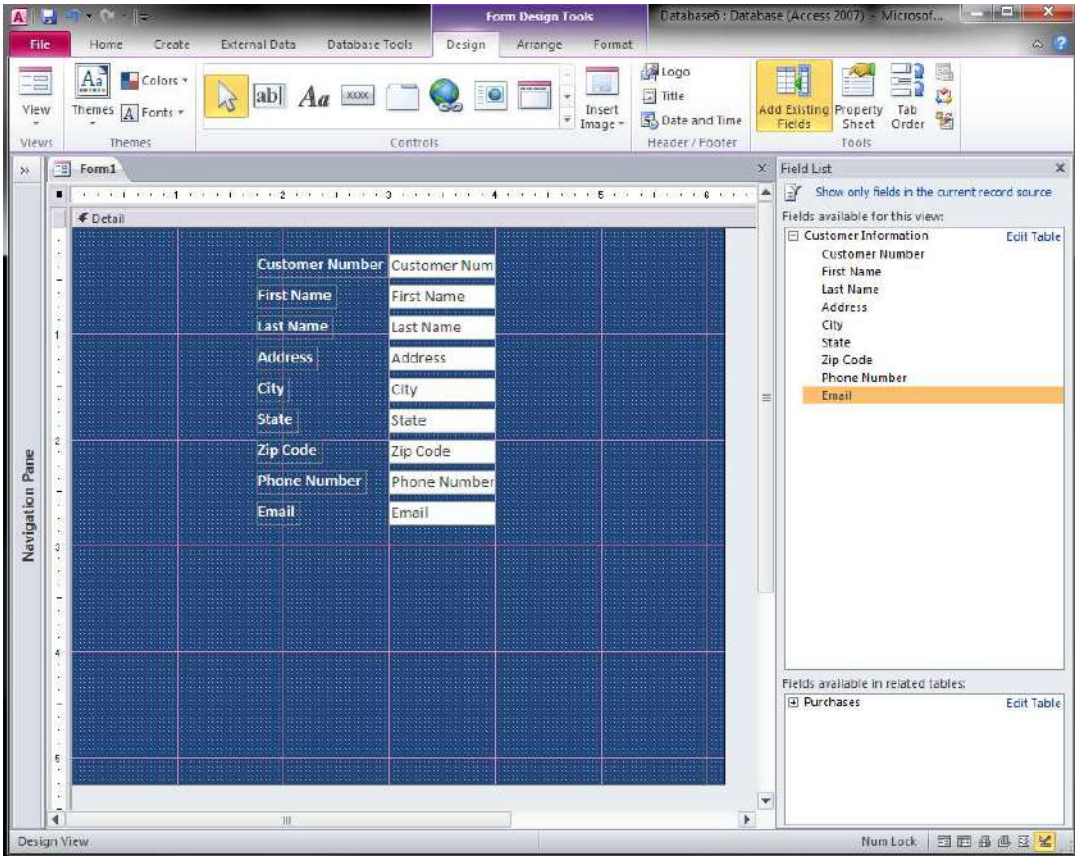


*Figure 16* – Form for the *Customer Information* Table

2. On the *Design* tab, click the *More* button (see *Figure 17*) for additional controls.


*Figure 17* – More Button

3. Click the *Subform/Subreport* button (see *Figure 18*).

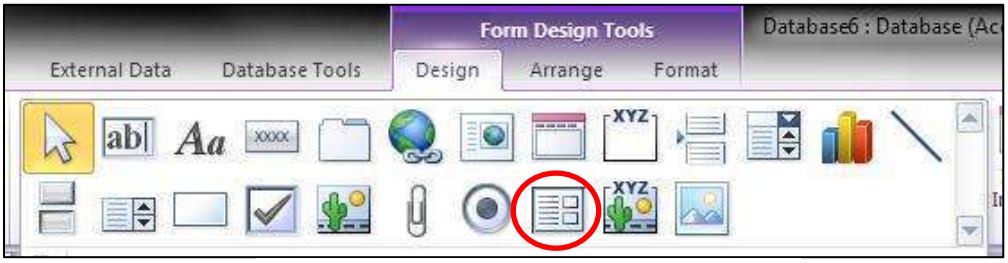


*Figure 18* – Subform/Subreport Button

4. Draw a box on the form for the *Purchases* table (see *Figure 19*).

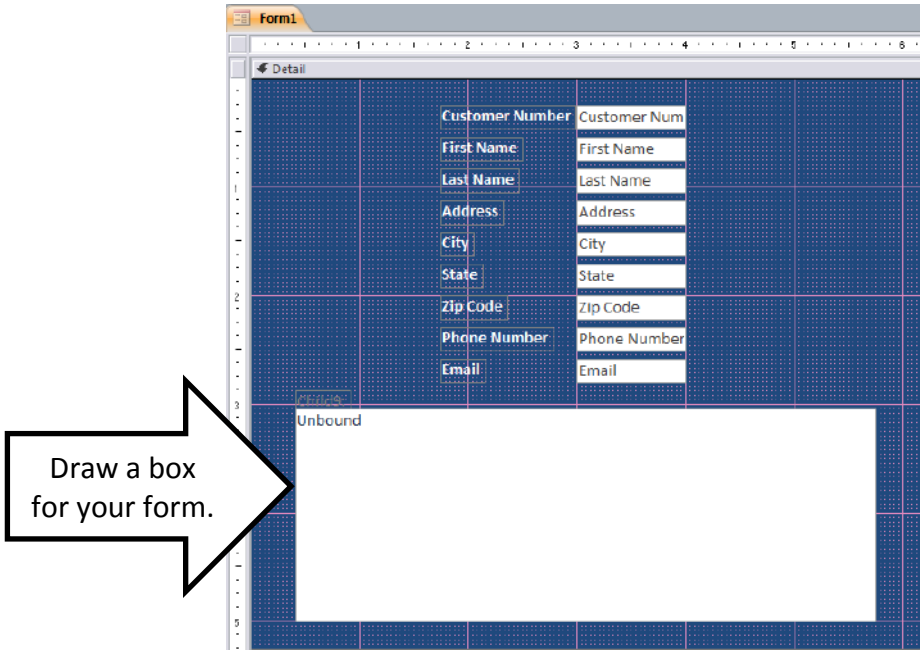


*Figure 19* – Create a Box for the Form

5. In the *SubForm Wizard* dialogue box, click *Next* (see *Figure 20*).

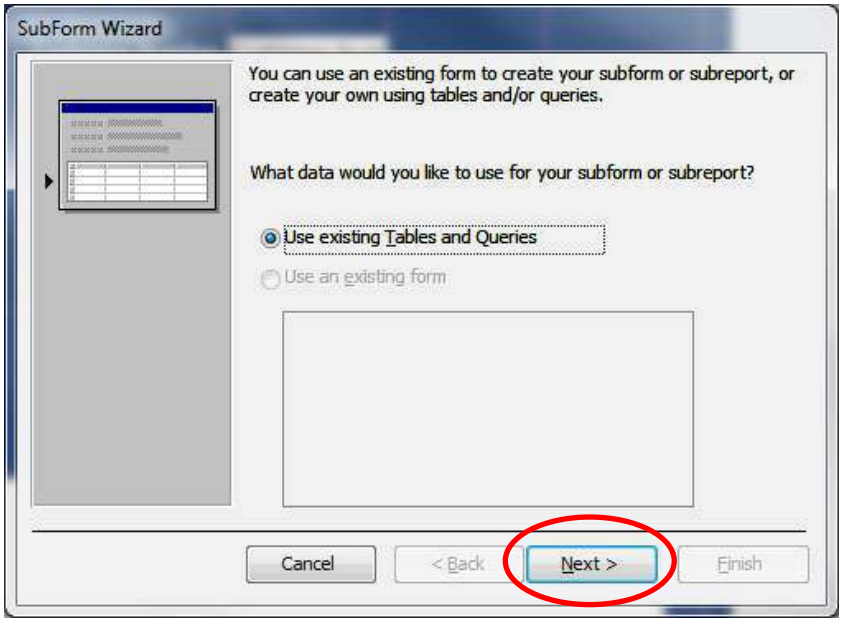


*Figure 20* – SubForm Wizard

6. Click to select the table that you want to place on the form (see *Figure 21*).

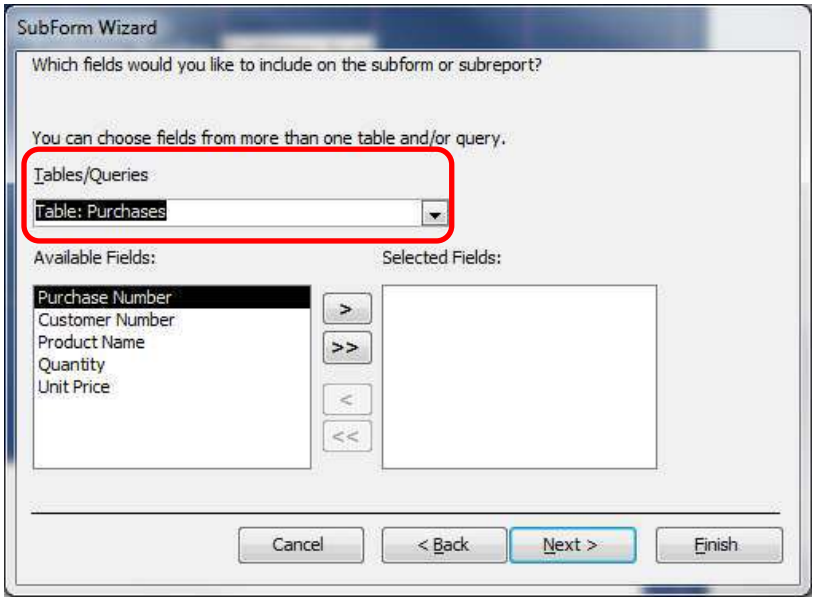


*Figure 21* – SubForm Wizard

7. Click the double-arrow button (see *Figure 22*) to add all of the fields onto the subform that you are creating.

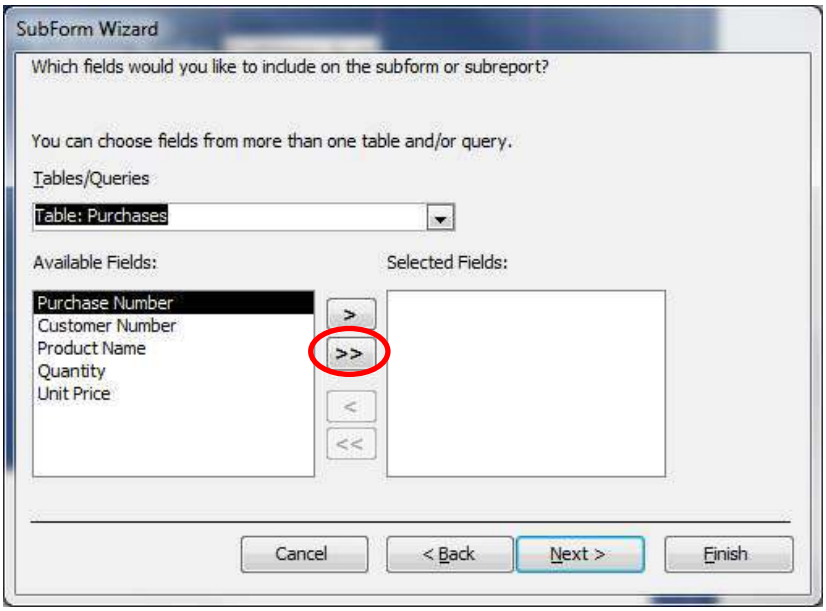


*Figure 22* – SubForm Wizard

8. Click the *Finish* button (see *Figure 23*).

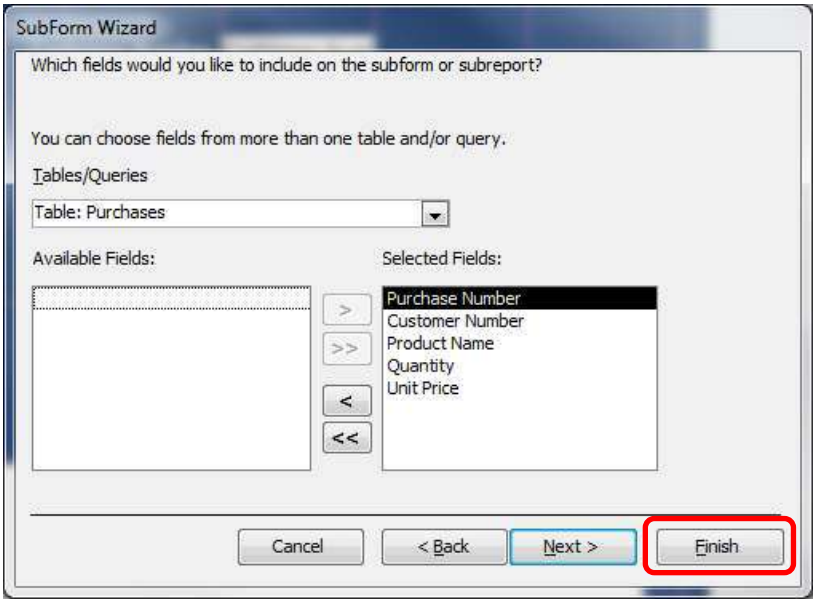


*Figure 23* – SubForm Wizard

9. The *Purchases* subform will appear on the *Customer Information* form. Use the anchor points to adjust the size of the form as indicated in *Figure 24* (make the form large enough that you can see the contents).

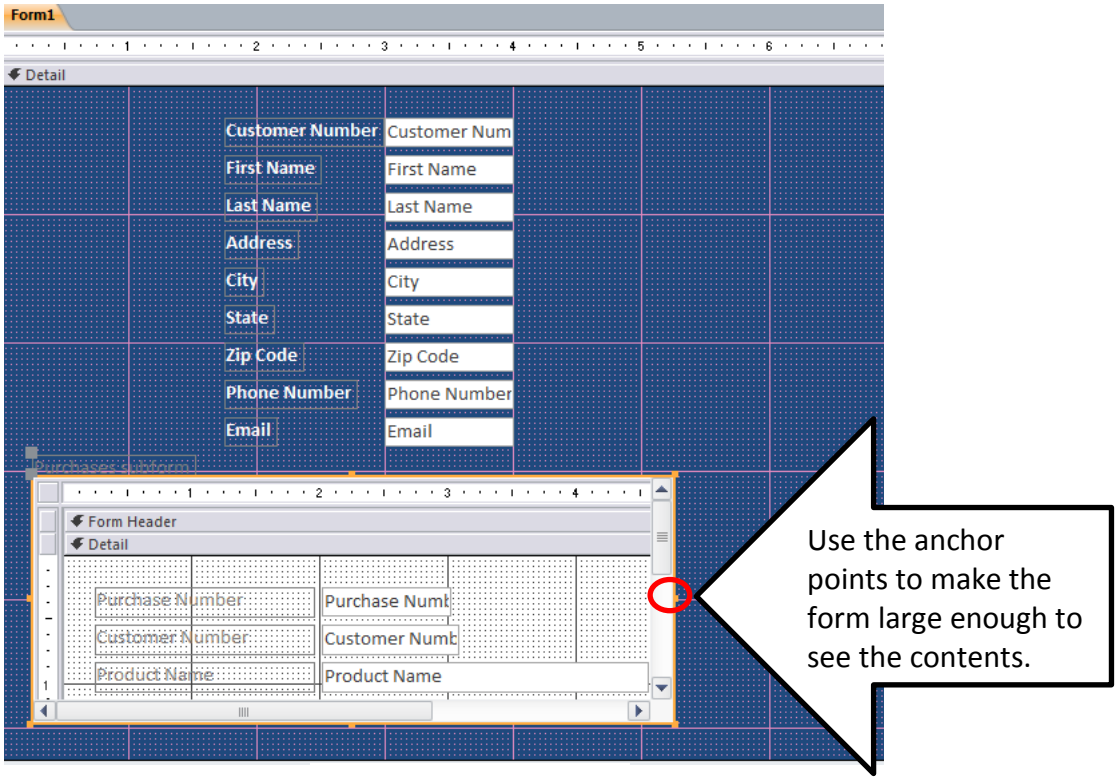


*Figure 24* – SubForm

10. *Figure 25* shows how the form and subform can be used to enter data for both the *Customer Information* table as well as the *Purchases* table.

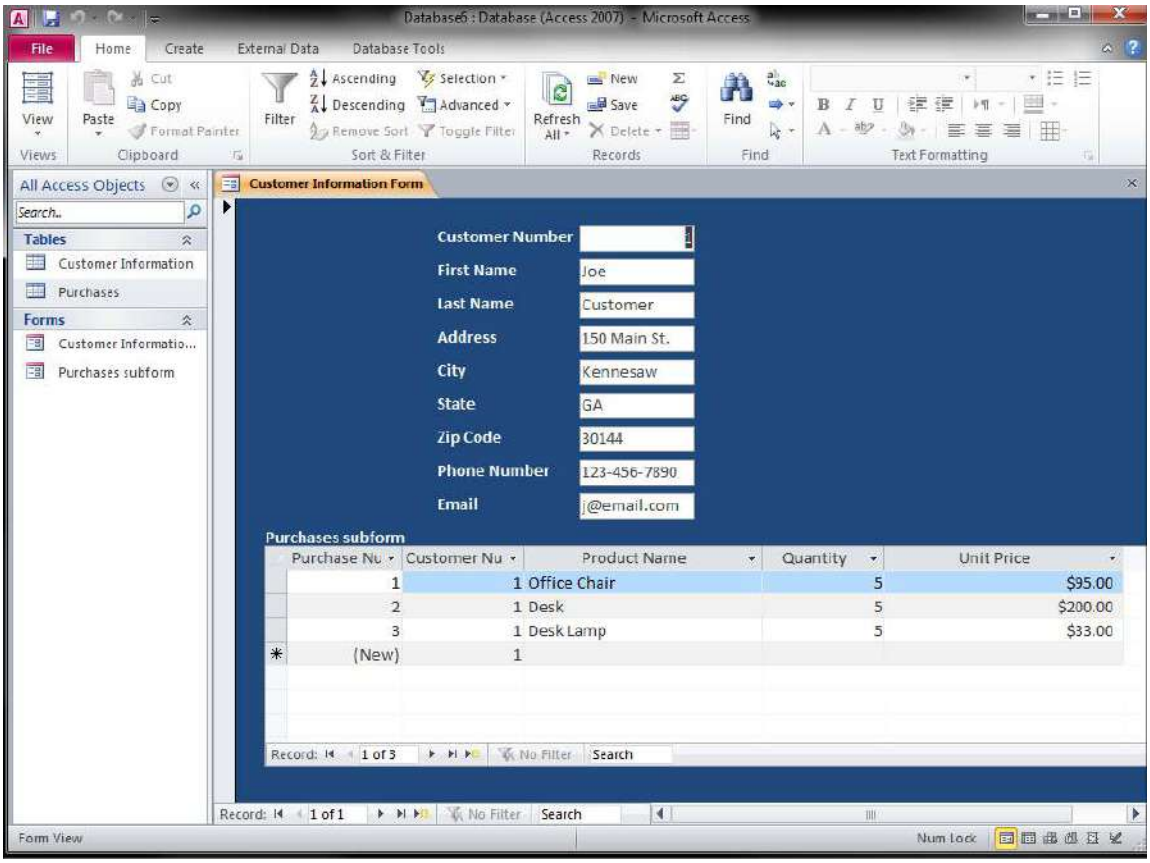


*Figure 25* – The Form and SubForm

## Creating a Form with Tabs for a Multi-Table Relationship

The following explains how to create a form with tabs for a multi-table relationship.

1. Create the necessary tables for the database. *Figure 26* shows the tables for an insurance company database: there is a *Customer Information* table, as well as tables for *auto insurance*, *life insurance*, and *property insurance*.

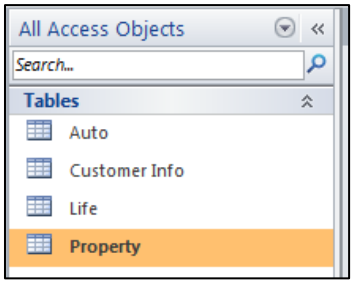


*Figure 26* – Tables for an Insurance Company Database

2. Create a relationship for all of the tables in the database. *Figure 27* shows an example of relationships created for a database for an insurance company.

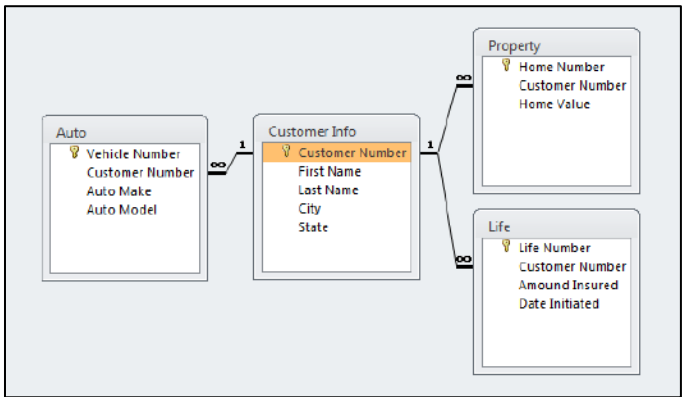


*Figure 27* – Relationships for an Insurance Company Database

3. Create forms for all of the tables EXCEPT for the main table. For example, in *Figure 27*, you would create forms for *Auto*, *Property*, and *Life*.
4. The following steps explain how to create the main form. For example, in *Figure 27*, you would create the form for *Customer Info*.
    a. Apply any color/labels to your form.
    b. On the *Design* tab, click the *Tab Control* button (see *Figure 28*)

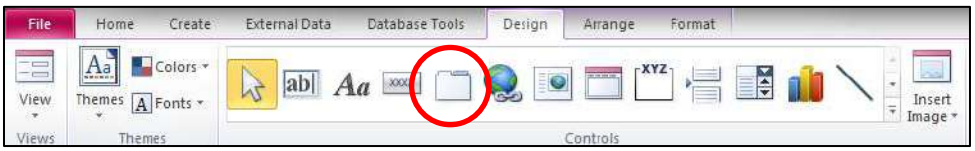


*Figure 28* – Tab Control Button

    c. Draw a box on your form (see *Figure 29*).

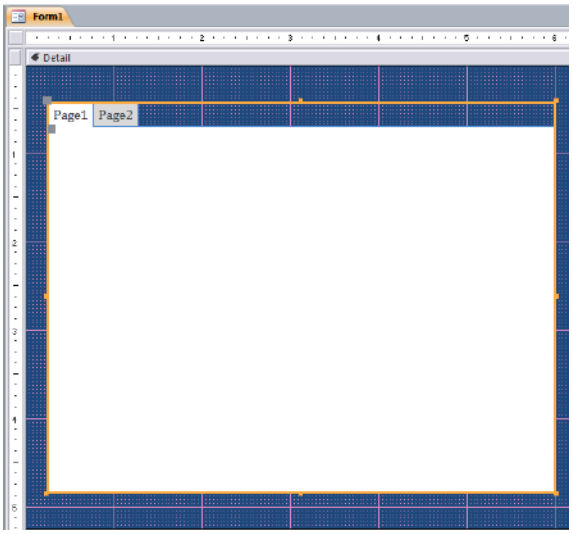


*Figure 29* – Tab Control Button

d. To add more tabs, right-click over one of the tabs and click *Insert Page* (see *Figure 30*). To delete a tab, click *Delete Page*.

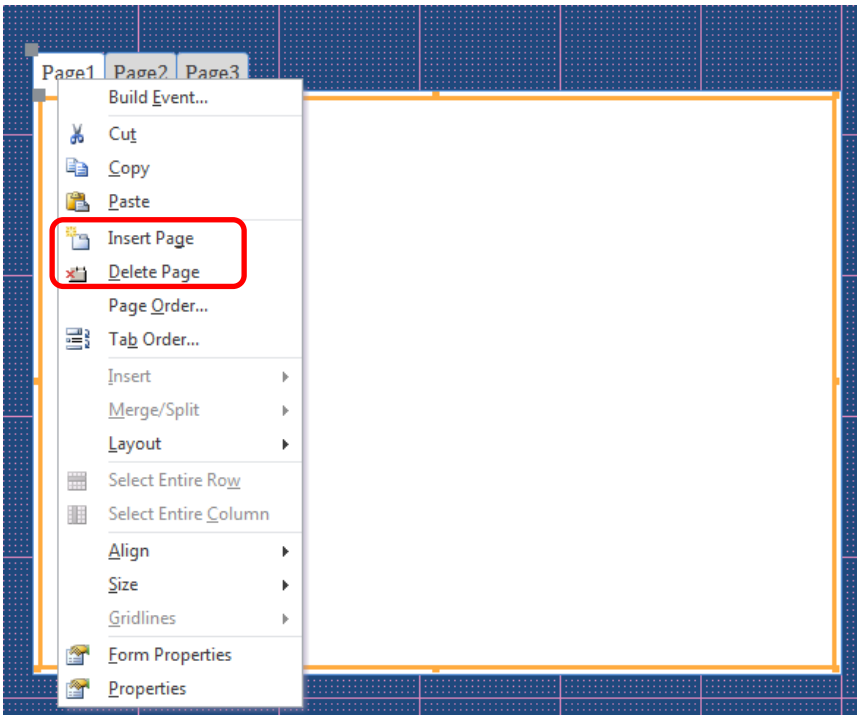


*Figure 30* – Inserting/Deleting Tabs

e. To rename the tab, click to select the tab. Then, open the *Property Sheet*. On the *Format* tab in the *Caption* category, enter the name of the tab (see *Figure 31*).

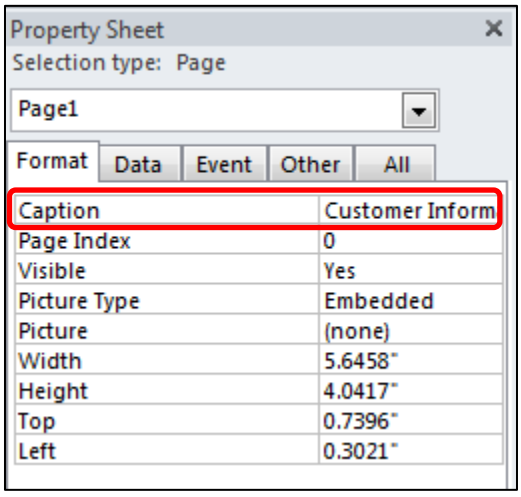


*Figure 31* – Renaming Tabs

f. To add the fields onto the tab for this main form, click *Add Existing Fields* (see *Figure 32*).


*Figure 32 – Add Existing Fields* button

g. In the *Field List* window that appears, click *Show all tables* (see *Figure 33*).


*Figure 33 – Field List* window

h. Click the "+" for the name of the main table containing the fields that you want to add. For this example, you would click the "+" for *Customer Info* (see *Figure 34*).

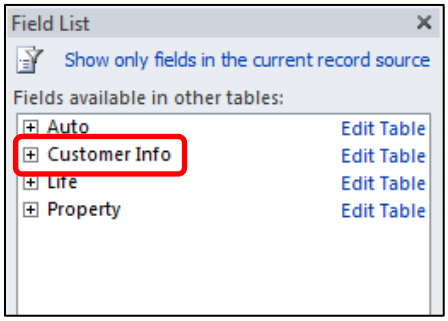


*Figure 34 – Field List* window

i. Drag the fields onto the form for the tab that you have selected (see *Figure 35*).

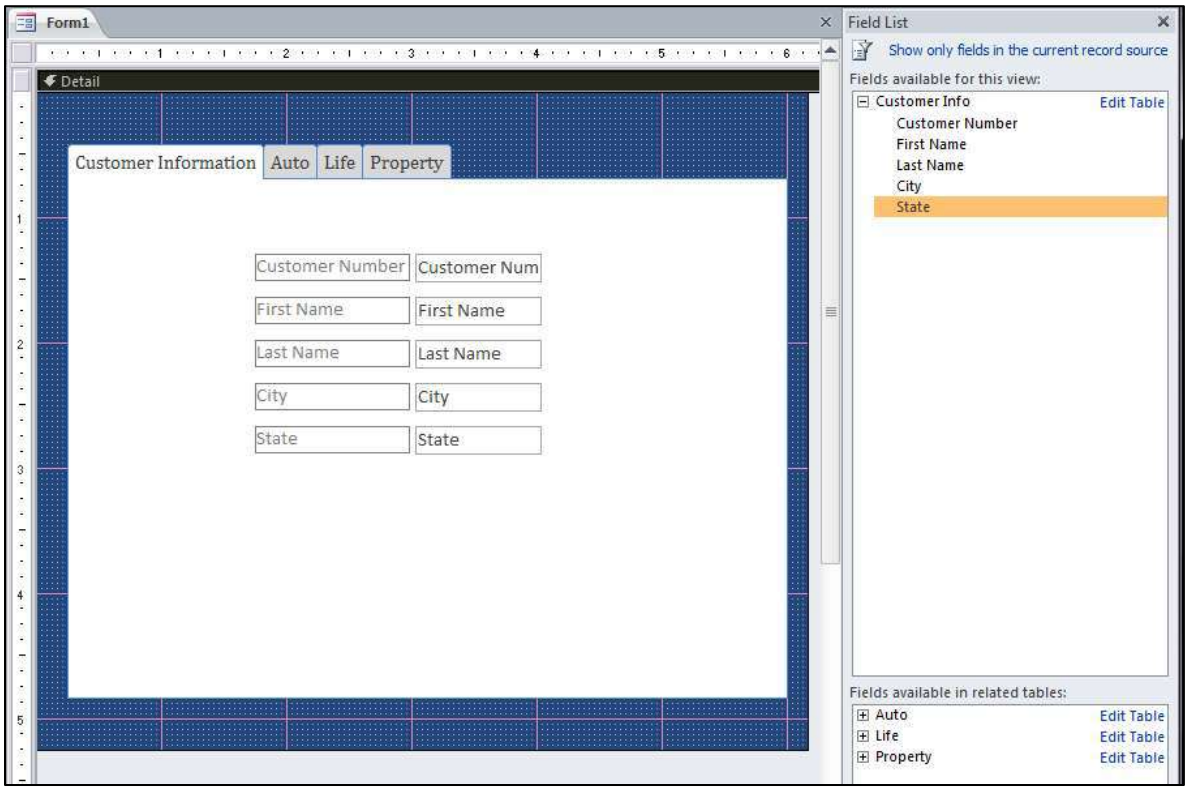


*Figure 35* – Fields on the Main Tab

5. You are now ready to add the forms that you created earlier to the other tabs. Click to select the tab where you want to add your form.
6. From the *Design* tab, click the *More* button (see *Figure 36*).

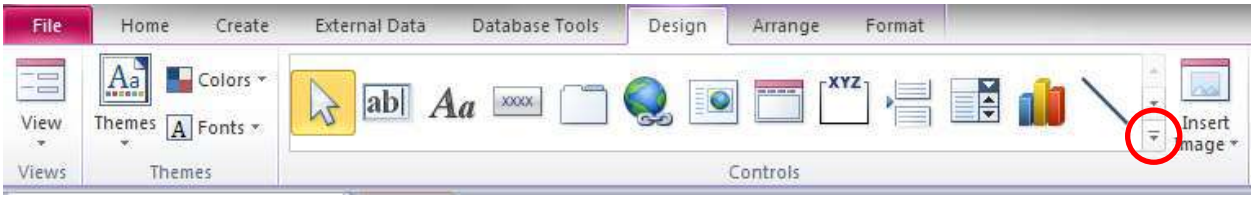


*Figure 36* – More Button

7. Click the *Subform/Subreport* button (see *Figure 37*).


*Figure 37* – Subform/Subreport Button

8. Draw a box on the form for the selected tab.
9. The *Subform Wizard* dialogue box will appear. Select the option, *Use an existing form* and then select the form of your choice (see *Figure 38*).

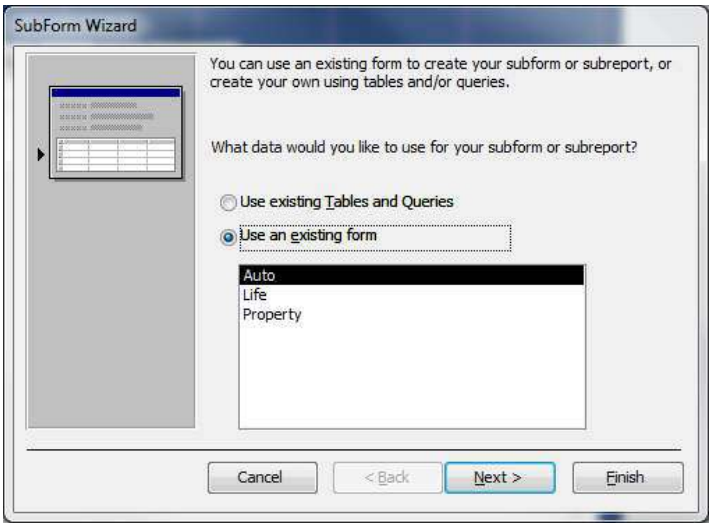


*Figure 38* – Subform Wizard

10. Click the *Finish* button (see *Figure 38*).
11. Use the anchor points around the form to adjust the size.
12. *Figure 39* shows how the *Auto* tab appears.

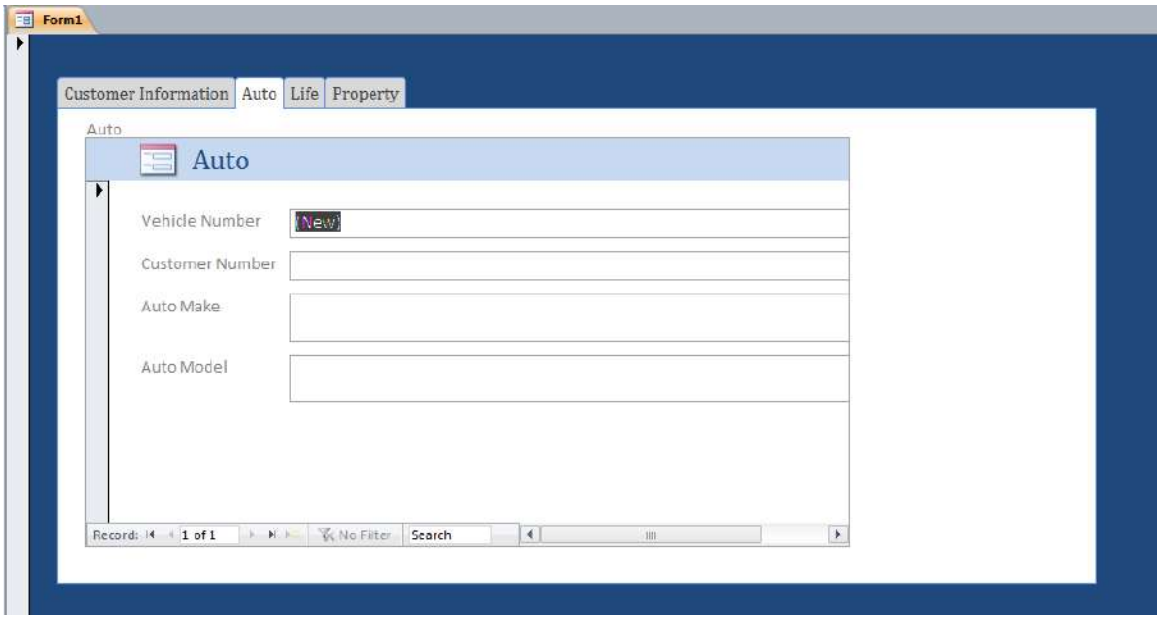


*Figure 39* – Auto tab

13. Repeat steps 5-11 above to place other forms on the other tabs.