# Highline College - Busn 216: Computer Applications for Business (Fun and Power with Computers) Office 2016 Video #39:

Access 2016: Create Database, Import Excel, Create Tables & Forms, Build Relationships

This handout lists the steps for building an Access Database for a small kiosk business in a mall. The name of the business is Wooden Crafts. Wooden Crafts sell wooden toys. Wooden Crafts has asked you to design a database that stores product data and supplier data that will produce reports such as product list, supplier list and inventory value.

The overriding steps to build Wooden Crafts database are here:

- Video #39 1. Create New Database. 2. Import SupplierData Table into Database from an Excel workbook. 3. Add Data Types and Field Properties to each Field in the SupplierData Table 4. In Access create a Product Table and add Data Types and Field Properties 5. Use Data Type Lookup Wizard to connect the Products table to the SupplierData table with a One-To-Many Relationship between the two Supplier Code Fields. We will also use Lookup Wizard to create a Whole Sale Retail Field. 6. Use Relationship Window to add "Referential Integrity" to One-To-Many Relationship between the two Suppliers Code fields 7. Create a Form for the Products Table 8. Add data to Products table using the Products Form 9. Create Queries with various Logical Constructions and Formulas (Expressions) - Video #40
  - 10. Create Reports based on Queries Video #41
  - 11. Export Queries from Access to Excel, Text File and pdf Video #42

The specific steps to build Wooden Crafts database are here:

### Create New Database.

i. After opening Access, click "Blank Desktop Database":



ii. In the next window, click on the Browse button to save the database to the correct folder for Access:



iii. In the File Name textbox, type the name of the database: "WoodenCraftsDatabase". Then click the Create button to create the new database file.

| Blank database<br>Should I create an Access app or an Access                          | s desktop database?         | File Name |
|---|-----------------------------|-----------|
| File Name<br>WoodenCraftsDatabase.accdb<br>F:\Highline\01 Fall 2017\1 Busn 216\01 Vid | eo Files\05 Access\         |           |
|   | Click Create to<br>database | e create  |

# 2. Import SupplierData Table into Database from an Excel workbook.

i. Here is a view of the new database and the automatic table that was created:

|                            |                               |                   |  |                |  |            | WoodenCraftsDa                                 | tabase : Da              | itabase- F:\H                | fighline\0 C | iirvin, Michael                                 |                      |   |
|----------------------------|-------------------------------|-------------------|--|----------------|--|------------|--|--------------------------|------------------------------|--------------|---|----------------------|---|
| File                       | Home C                        | reate Ext         | ernal Data                                     | Database Tools | Fields                                       | Table      | ♀ Tell me what                                 |                          |                              |              |   |                      | 9 |
| View<br>Views              | AB 12<br>Short Number<br>Text | Currency Add & De | Date & Time<br>Yes/No<br>More Fields +<br>lete | Delete         | Name & Captic<br>Default Value<br>Field Size | in<br>Prop | Modify Modify<br>Lookups Expression<br>perties | ab<br>Memo<br>Settings - | Data Type<br>Format:<br>\$ % | Formatting   | Requir     Uniqu     Uniqu     Indexe     Field | ed Validation<br>d v | ~ |
| All Ac<br>Search<br>Tables | ccess Obje                    | >> (*)            | ID Table1                                      | + Click to     | Add +  | *          |  |                          |                              |              |   |                      | × |
|                            |                               | L                 | Au   | tomati         | c Table                                      | e is c     | open, her                                      | e                        |                              |              |   |                      |   |
|                            | Aut                           | omati             | c Tabl   | e is sho       | own in                                       | the l      | Navigatic                                      | on Pa                    | ne                           |              |   |                      |   |
| Datasheet                  | View                          |                   | Record: 14                                     | 1 of 1 → ▶     | No F   | ilter Sea  | arch   |                          |                              |              |   | Num Lock             |   |

# ii. Using Ctrl + S, name the table "Products".

| Table Name: |    |        |
|-------------|----|--------|
| Products    |    |        |
|             | OK | Cancel |

i. Here is a view of the new database and the new Products Table. Use the Close Button for the Products Table. We will come back and do extensive work on this table later.



- ii. Now we need to import the Supplier Table from the Excel File named "V39-SupplierDataFromExcel.xlsx" (you download file from our web page).
- iii. If you are using Access 2016 from Office 365, your Ribbon Tab looks like this:
  - 1. On the External Data Tab, click the New Data Source dropdown, then click on Excel.



iv. If you are using Access 2016 and you do NOT have Office 365, your Ribbon Tab looks like this:1. On the External Data Tab, in the Import & Link group click the Excel button:

| File             | Home                    | Create   | E      | xternal Da       | ta | Databa                          |
|------------------|-------------------------|----------|--------|------------------|----|---------------------------------|
| Saved<br>Imports | Linked Table<br>Manager | Excel A  | ccess  | ODBC<br>Database |    | Text File<br>XML File<br>More ▼ |
|                  |                         | Import 8 | k Link |                  |    |                                 |

- v. "In the Get External Data Excel Spreadsheet" dialog box:
  - 1. Use the Browse button to navigate to the Excel file named "V39-SupplierDataFromExcel.xlsx".
  - 2. Make sure that the "Import the source data into a new table in the current database" dialog button is selected.



vi. In the next window you can accept the default settings:

4.

| Show <u>W</u> orksheet           Show Named <u>Rat</u>         | ts <mark>Supplie</mark><br>nges                                   | Data   |   |  |                               |  |   |
|--|---|--|---|--|-------------------------------|--|---|
| mple data for workshe<br>Supplier Code<br>AP<br>BH<br>ER<br>SC | et'SupplerData'.<br>First Name<br>Antonio<br>Bert<br>Ellie<br>Sue | Last Name<br>Patino<br>Huntington<br>Roberts<br>Chin | Address<br>3443 4th St.<br>674 Beafort<br>120025 Cool St.<br>1587 Crestview | City<br>Bastrop<br>Richford<br>Bastrop<br>Mockington | State<br>NM<br>CA<br>NM<br>AZ | Zip Code<br>751236070<br>954189062<br>751233319<br>851657013 | Telepho<br>5055551<br>7077553<br>5055984<br>6022559 |
|  |   |  |   |  |                               |  |   |

vii. In the next window, check the check box for "First Row Contains Column Headers":

| Microsoft Access car<br>row specified contain | n use your column h<br>n column headings?<br>ns Column Headings | neadings as field na | ames for your table. Does t | the first      |       |           |         |    | Check the check box<br>for "First Row<br>Contains Column<br>Headers" |
|---|---|----------------------|-----------------------------|----------------|-------|-----------|---------|----|--|
| Supplier Code                                 | First Name  | Last Name            | Address                     | City           | State | Zip Code  | Telepho |    |  |
| 2BH   | Bert  | Huntington           | 674 Beafort                 | Bichford       | CA    | 954189062 | 7077553 | â. |  |
| 3ER   | Ellie   | Roberts              | 120025 Cool St.             | Bastrop        | NM    | 751233319 | 5055984 |    |  |
| 4SC   | Sue   | Chin                 | 1587 Crestview              | Mockington     | AZ    | 851657013 | 6022559 |    |  |
| -   |   |                      |                             |                |       |           |         |    |  |
|   |   |                      |                             |                |       |           |         |    |  |
| •   |   |                      | 1                           |                | 1     |           | +       | -  |  |
|   |   |                      | Cancel                      | < <u>B</u> ack | Ne    | xt >      | Einish  |    |  |

viii. In the next window, for the Supplier Code Field Name, select "Yes (No Duplicates)" in the Indexed textbox dropdown:

| Select<br>"Yes (No Duplicates)" | Import Spreadsheet Wizard     You can specify information about each information in the 'Field Options' area.     Field Options     Field Name: Supplier Code     Indexed: Yes (No Duplicates) | h of the fields you are importing. Select fields Data Type: Short Text Do not import field (Skip)                      | in the area below. Yo  | ou can then modify field   | ×   |
|---------------------------------|--|--|--|--|---|
|                                 | Supplier Code First Name<br>AP Antonio<br>2BH Bert<br>3C Sue<br>4SC Sue  | E Last Name Address<br>Patino 3443 4th St.<br>Huntington 674 Beafort<br>Roberts 120025 Cool St.<br>Chin 1587 Crestview | City S<br>Bastrop N<br>Richford C<br>Bastrop N<br>Mockington R | State Zip Code<br>M 751236070<br>A 954189062<br>751233319<br>Z 851657013 | Telephor<br>5055551<br>7077533<br>5055984<br>6022559<br>* |
|                                 |  | Cancel   | < <u>B</u> ack   | Next >   | Einish  |

ix. In the next window, select "Choose my own primary key" for the Supplier Code Field.

| Import Spreadsheet                        | Wizard<br>Microsoft Acc<br>uniquely iden<br>O Let Acce<br>O Choose<br>No prime | ess recommends ti<br>tify each record in<br>ess add primary ke<br>my own primary ke<br>ary key. | hat you define a primary k<br>your table. It allows you t<br>y.<br>Supplier Code | ey for your new ta<br>to retrieve data mo            | ble. A prin<br>re quickly.    | nary key is used i   | to   | Sel<br>p<br>S | ect "Choose my own<br>rimary key" for the<br>Supplier Code Field |
|---|--|---|--|--|-------------------------------|--|--|---------------|--|
| Supplier Code<br>1AF<br>2BH<br>3ER<br>4SC | First Name<br>Antonio<br>Bert<br>Ellie<br>Sue                                  | Last Name<br>Patino<br>Huntington<br>Roberts<br>Chin  | Address<br>3443 4th St.<br>674 Beafort<br>120025 Cool St.<br>1587 Crestview      | City<br>Bastrop<br>Richford<br>Bastrop<br>Mockington | State<br>NM<br>CA<br>NM<br>AZ | Zip Code<br>751236070<br>954189062<br>751233319<br>851657013 | Telephor<br>5055551<br>7077553<br>5055984<br>6022559 | •             |  |
|   |  |   |  |  |                               |  |  | -             |  |
|   |  |   | Cancel   | < <u>B</u> ack                                       | Ne                            | xt >   | Ejnish   | ]             |  |

x. In the next window, we can accept the table name "SupplierData". Click Finish.

| Import Spreadsheet | Wizard 📃 🗾  |
|--------------------|---|
| **                 | That's all the information the wizard needs to import your data.    |
|                    | Import to Table:<br>Supplier Data                                   |
|                    |   |
|                    | I would like a wizard to analyze my table after importing the data. |
|                    | Cancel < Back Next > Enish  |

- xi. In the last window click the Close button (window not shown)
- xii. Now we can see the imported SupplierData Table in the Navigation Pane.

| File   | Home Create E        | xternal Data Database Too | ols |
|--------|----------------------|---------------------------|-----|
| View   | Paste Format Painter | Filter                    | A A |
| Views  | Clipboard 🖙          | Sort & Filter             |     |
| All A  | .ccess Obje 🖻 «      |                           |     |
| Search | م                    |                           |     |
| Tables | \$                   |                           |     |
| Pr     | roducts              |                           |     |
| III SI | upplierData          |                           |     |
|        |                      |                           |     |

# 3. Add Data Types and Field Properties to each Field in the SupplierData Table

- i. As we talked about last video Data Types and Field Properties allow us to add Data Validation to our Fields so that "Bad Data" doesn't get into our Field.
- ii. Following are two tables that list the different Data Types and the different Codes for Input Masks:

| Data Type     | Usage   | Size                                 |
|---------------|---|--------------------------------------|
| Short Text    | Alphanumeric data (names, titles, etc.)                   | Up to 255 characters.                |
|               | Large amounts of alphanumeric data: sentences and         | Up to about 1 gigabyte (GB), display |
| Long Text     | paragraphs.   | first 64,000 characters.             |
| Number        | Numeric data.   | 1, 2, 4, 8, or 16 bytes.             |
| Large Number  | Numeric data.   | -2^63 to 2^63                        |
| Date/Time     | Dates and times.  | 8 bytes.                             |
| Currency      | Monetary data, stored with 4 decimal places of precision. | 8 bytes.                             |
| AutoNumber    | Unique value generated by Access for each new record.     | 4 bytes                              |
|               | Boolean (true/false) data; Access stores the numeric      |                                      |
| Yes/No        | value zero (0) for false, and -1 for true.                | 1 byte.                              |
|               | Pictures, graphs, or other ActiveX objects from another   |                                      |
| OLE Object    | Windows-based application.                                | Up to about 2 GB.                    |
| Hyperlink     | A link address  | Up to 8,192 characters               |
|               | You can attach files such as pictures, documents,         |                                      |
| Attachment    | spreadsheets  | Up to about 2 GB.                    |
| Calculated    | You can create an expression (formula)                    | Dependent on the data type           |
|               | The Lookup Wizard can lookup a value from another         | Dependent on the data type of the    |
| Lookup Wizard | column in a different table (Primary Key)                 | lookup field.                        |

1. Different Data Types:

2. Code for Input Mask (like Number Formatting in Excel) for Field Properties:

| Character | Description   |
|-----------|---|
| 0         | Digit (0 to 9, entry required, plus [+] and minus [?] signs not allowed).   |
| 9         | Digit or space (entry not required, plus and minus signs not allowed).  |
|           | Digit or space (entry not required; spaces are displayed as blanks while in Edit mode, but blanks   |
| #         | are removed when data is saved; plus and minus signs allowed).  |
| L         | Letter (A to Z, entry required).  |
| ?         | Letter (A to Z, entry optional).  |
| А         | Letter or digit (entry required).   |
| а         | Letter or digit (entry optional).   |
| &;        | Any character or a space (entry required).  |
| С         | Any character or a space (entry optional).  |
| .,:;-/    | Decimal placeholder and thousand, date, and time separators. (The actual character used depends on the settings in the Regional Settings Properties dialog box in Windows Control Panel). |
| <         | Causes all characters to be converted to lowercase.   |
| >         | Causes all characters to be converted to uppercase.   |
|           | Causes the input mask to display from right to left, rather than from left to right. Characters typed   |
|           | into the mask always fill it from left to right. You can include the exclamation point anywhere in  |
| !         | the input mask.   |

\*\* |Causes the character that follows to be displayed as the literal character (for example, \A is displayed as just A).

3. Number Field Size Properties:

| Field Size  | De   | escription                  |              |               |
|---|--|-----------------------------|--------------|---------------|
| Byte  | Interger:                                    | 0                           | to           | 255           |
| Integer   | Interger:                                    | -32,768                     | to           | 32,767        |
| Long Integer  | Interger:                                    | -2,147,483,648              | to           | 2,147,483,647 |
| Single  | decimals with 7 significant digits:          | Require                     | es 4 bytes o | of storage    |
| Double  | decimals with > 'Single' significant digits: | Requires 8 bytes of storage |              | of storage    |
| Decimal decimals with > 'Double' significant digits: Requires 12 bytes of storage |  | of storage                  |              |               |
| Replication ID  | Globally unique identifier (GUID)            | 16                          | bytes of st  | orage         |

iii. First, we want to open our Supplier Table in "Regular View" or Datasheet View. In the Navigation Pane, double-click the Supplier Data Table. We can see we have four suppliers.

| 📕 (Sir 🖻 - 🔻              |  |                 |             | WoodenCraftsData        | base : Database- F | :\Highline\01 Fall 2  | 017\1 Busn 216\01     | L Video Files\05 Ac | cess\WoodenCraftsl |
|---------------------------|--|-----------------|-------------|-------------------------|--------------------|-----------------------|-----------------------|---------------------|--------------------|
| File Home Create Ex       | cternal Data Database To                             | ools Fields     | Table       | ♀ Tell me w             | Sunnlier           | Data Tah              | le name               | is show             | n in Tah           |
| View Paste Format Painter | Filter<br>Ascending<br>↓ Descending<br>A Remove Sort | Selection •<br> | Reference X | New                     | above              | table sho             | wn in Da              | atasheet            | View.              |
| Views Clipboard 🖙         | Sort & Filte   | 1               |             | Records                 | Fin                | d                     | Ter                   | xt Formatting       | 5                  |
| All Access Obje  «        | Supplier Coc - First                                 | st Name 🔹 La    | ast Name 🔹  | Address -               | City -             | State -               | Zip Code 🔹            | Telephone 🔹         | Click to Add 🔹     |
| T-LI                      | AP Ante  | onio Pa         | itino       | 3443 4th St.            | Bastrop            | NM                    | 751236070             | 5055551111          |                    |
| Tables x                  | BH Bert  | t Hu            | untington   | 674 Beafort             | Richford           | CA                    | 954189062             | 7077553334          |                    |
| Products                  | ER Ellie   | e Ro            | berts       | 120025 Cool St.         | Bastrop            | NM                    | 751233319             | 5055984522          |                    |
| SupplierData              | SC Sue   | Ch              | nin         | 1587 Crestview          | Mockington         | AZ                    | 851657013             | 6022559990          |                    |
|                           |  |                 | Doi<br>N    | uble-click<br>avigatior | Supplie<br>Pane to | rData Ta<br>o open th | ble in th<br>e table. | e                   |                    |

iv. Now we want to view the table in Design View so that we can add the correct Data Types and Field Properties to each Field. To show the table in Design View click the View Button in the View group in the Home Ribbon Tab.

|                          | Charles and | No. alter T |                              |             |  |                             |                           |
|--------------------------|-------------|-------------|------------------------------|-------------|--|-----------------------------|---------------------------|
|                          | E           | 5-0-        |                              |             |  |                             | Table To                  |
|                          | Fil         | e Home      | Create                       | External Da | ta Datab                                   | ase Tools I                 | Fields                    |
| Click the View button to | Viev        | v Paste     | Cut<br>Copy<br>Format Painte | Filter      | 2↓ Ascending<br>Z↓ Descendir<br>2 Remove S | g Ty Selection<br>ng Toggle | on *<br>ced * R<br>Filter |
| get to Design View.      | View        | Access (    | Dbje 💌                       | « Sur       | Sort 8<br>pplierData                       | Filter                      | • Last I                  |
|                          | Searc       | h<br>oles   |                              |             |  | Antonio                     | Patino                    |
|                          |             |             |                              | BH          |  | Bert                        | Hunti                     |

v. Design View for the SupplierData Table is seen below.



- vi. For the Supplier Code Field our Data Type, Description and Field Properties are:
  - 1. Data Type = Short Text
  - 2. Description = "Primary Key this will be the Foreign Key in the Products Table."
  - 3. Field Properties are:
    - i. Field Size = 2
    - ii. Input Mask = >LL (this means letters are always capital and two letters must be entered)

| Field Name  | Data Type  | Description (Optional)   |
|---|------------|--|
| Supplier Code   | Short Text | Primary Key - this will be the Foriegn Key in the Products Table |
| First Name  | Short Text |  |
| Last Name   | Short Text |  |
| Address   | Short Text |  |
| City  | Short Text |  |
| State   | Short Text |  |
| Zip Code  | Number     |  |
| Telephone   | Number     |  |
|   |            |  |
|   |            |  |
|   |            |  |
|   |            |  |
|   |            |  |
|   |            | Field Properties   |
| General Lookup  |            |  |
| Field Size 2  |            |  |
| Format  |            |  |
| and the second se |            |  |

vii. The remaining Data Types, Descriptions and Field Properties are seen in the following pictures, one for each Field:

#### viii. First Name:

| Field Name    | Data Type  | Description  |
|---------------|------------|--|
| Supplier Code | Short Text | Primary Key - this will be Foriegn key in Product Table for Lookup |
| First Name    | Short Text | First Name of contact  |
| Last Name     | Short Text | Last Name of contact   |
| Address       | Short Text | Address of supplier  |
| City          | Short Text | City of supplier   |
| State         | Short Text | State of supplier  |
| Zip Code      | Short Text | Zip code of supplier   |
| Telephone     | Short Text | Phone of supplier  |

| General Lookup | No. 14 |  |
|----------------|--------|--|
| Field Size     | 25     |  |
| Format         |        |  |
| Input Mask     |        |  |

#### ix. Last Name:

| 1 |                  | 161 MIGSUS |  |
|---|------------------|------------|--|
|   | Field Name       | Data Type  | Description  |
| 3 | Supplier Code    | Short Text | Primary Key - this will be Foriegn key in Product Table for Lookup |
|   | First Name       | Short Text | First Name of contact  |
|   | Last Name        | Short Text | Last Name of contact   |
|   | Address          | Short Text | Address of supplier  |
|   | City             | Short Text | City of supplier   |
|   | State            | Short Text | State of supplier  |
|   | Zip Code         | Short Text | Zip code of supplier   |
|   | Telephone        | Short Text | Phone of supplier  |
| 6 | anarat la second |            | Field Properties   |
|   | ield Size        |            |  |
| F | ormat            |            |  |
| I | nput Mask        |            |  |

#### x. Address:

| Field Name    | Data Type  | Description  |
|---------------|------------|--|
| Supplier Code | Short Text | Primary Key - this will be Foriegn key in Product Table for Lookup |
| First Name    | Short Text | First Name of contact  |
| Last Name     | Short Text | Last Name of contact   |
| Address       | Short Text | Address of supplier  |
| City          | Short Text | City of supplier   |
| State         | Short Text | State of supplier  |
| Zip Code      | Short Text | Zip code of supplier   |
| Telephone     | Short Text | Phone of supplier  |
|               |            | Field Properties   |

| General   | Lookup |
|-----------|--------|
| Field Siz | e      |

100

Format Input Mask

#### xi. City:

| Field Name          | Data Type  | Description  |
|---------------------|------------|--|
| Supplier Code       | Short Text | Primary Key - this will be Foriegn key in Product Table for Lookup |
| First Name          | Short Text | First Name of contact  |
| Last Name           | Short Text | Last Name of contact   |
| Address             | Short Text | Address of supplier  |
| City                | Short Text | City of supplier   |
| <sub>)ata</sub> ate | Short Text | State of supplier  |
| Zip Code            | Short Text | Zip code of supplier   |
| Telephone           | Short Text | Phone of supplier  |
|                     |            | Field Properties   |
| General Lookup      |            |  |
| Field Size          | 50         |  |
| Format              |            |  |
| Input Mask          |            |  |

#### xii. State (State is a two capital letter abbreviation so we use input mask >LL ):

| Field Na             | me Data Type | Description  |
|----------------------|--------------|--|
| Supplier Code        | Short Text   | Primary Key - this will be Foriegn key in Product Table for Lookup |
| First Name           | Short Text   | First Name of contact  |
| Last Name            | Short Text   | Last Name of contact   |
| Address              | Short Text   | Address of supplier  |
| City                 | Short Text   | City of supplier   |
| State                | Short Text   | State of supplier  |
| Zip Code             | Short Text   | Zip code of supplier   |
| Telephone            | Short Text   | Phone of supplier  |
|                      |              | Field Properties   |
| General Lookup       |              |  |
| Field Size<br>Format | 2            |  |
| Input Mask           | >11          |  |

# xiii. Zip Code (not a Number Data Type because we will never do math operations on this field):

| Short Toxt |  |
|------------|--|
| SHULLTEAL  | Primary Key - this will be Foriegn key in Product Table for Lookup                             |
| Short Text | First Name of contact  |
| Short Text | Last Name of contact   |
| Short Text | Address of supplier  |
| Short Text | City of supplier   |
| Short Text | State of supplier  |
| Short Text | Zip code of supplier   |
| Short Text | Phone of supplier  |
|            | Short Text<br>Short Text<br>Short Text<br>Short Text<br>Short Text<br>Short Text<br>Short Text |

| General Lookup |             |  |
|----------------|-------------|--|
| Field Size     | 9           |  |
| Format         |             |  |
| Input Mask     | 00000\-9999 |  |

xiv. Telephone (not a Number Data Type because we will never do math operations on this field):

|   | Field Name    | Data Type  | Descriptio   |
|---|---------------|------------|--|
| 8 | Supplier Code | Short Text | Primary Key - this will be Foriegn key in Product Table for Lookup |
|   | First Name    | Short Text | First Name of contact  |
|   | Last Name     | Short Text | Last Name of contact   |
|   | Address       | Short Text | Address of supplier  |
|   | City          | Short Text | City of supplier   |
|   | State         | Short Text | State of supplier  |
|   | Zip Code      | Short Text | Zip code of supplier   |
|   | Telephone     | Short Text | Phone of supplier  |

| General Lookup |                    |  |
|----------------|--------------------|--|
| Field Size     | 10                 |  |
| Format         |                    |  |
| Input Mask     | \(000") "000\-0000 |  |

xv. The finished list of Fields, Data Types and Field Properties is seen below. Using Ctrl + S, Save the changes you made to the SupplierData Table Object. Then Close the window.

| 🗄 5° ° °  |   | Table Tools WoodenCraftsData | base : Database- F:\Highline\01 Fall 2017\1 Busn 216\01 Video File | Girvin, Michael ? — 🗆 🗙 |
|---|---|------------------------------|--|-------------------------|
| File Home Create Ex                             | tternal Data Database Tools   | Design Q Tell me what y      | ou want to do  | •                       |
| View Primary Builder Test Validati<br>Key Tools | S Insert Rows<br>→ Delete Rows<br>→ Delete Rows<br>→ Modify Lookups<br>Shee<br>Shee | rty Indexes<br>ts<br>sw/Hide | e/ Relationships Object<br>cro Dependencies<br>rents Relationships | C                       |
| All Access Obje 🖻 «                             | Eiold Name  | Data Tupa                    | Description (Opt   | ionall                  |
| Search 🔎  | Supplior Code   | Short Toxt                   | Drimany Koy, this will be the Earlogn Koy in the Brodus            | ts Tablo                |
| Tables  | First Name  | Short Text                   | First Name of contact  |                         |
| Products  | Last Namo   | Short Text                   | Last Name of contact   |                         |
| CuppliarData                                    | Addross   | Short Text                   | Address of supplier  |                         |
|   | City  | Short Text                   | City of Supplier   |                         |
|   | State   | Short Text                   | State of supplier  |                         |
|   | Zin Code  | Short Text                   | 7in code of supplier   |                         |
|   | Telephone   | Short Text                   | Phone of supplier  | After saving, click     |
|   | relephone   | SHOTETEXE                    | Those of supplier  | the Close Button        |
|   |   |                              |  | the close button        |
|   |   |                              |  |                         |
|   |   |                              |  |                         |
|   |   |                              |  |                         |
|   |   |                              | Field Properties   |                         |
|   | General Lookup  |                              | Teld Flopenies   |                         |
|   | Field Size 2  |                              |  |                         |
|   | Format  |                              |  |                         |
|   | Input Mask >LL  |                              |  |                         |
|   | Caption<br>Default Value  |                              |  |                         |
|   | in the autovarue  |                              |  | 11                      |

#### 4. In Access create a Product Table and add Data Types and Field Properties

i. We already have an automatic table that was created when we created the database, and we named it Products. Now we need to open it in Design View and add Field, Data Types and Field Properties. To open it in Design View, right-click the Products table in the Navigation Pane and point to Design View, like in this picture:

| Search | ha.          | P        |                     |  |
|--------|--------------|----------|---------------------|--|
| Tab    | les          | \$       |                     |  |
|        | Products     |          |                     |  |
|        | SupplierData |          | <u>O</u> pen        |  |
|        |              | <u>k</u> | <u>D</u> esign View |  |
|        |              |          | I <u>m</u> port     |  |
|        |              |          | Export              |  |
|        |              | <u>آ</u> | Rename              |  |

ii. Below is the Products Table shown in Design View. An automatic Primary Key was added with an AutoNumber Data Type. We do not want this field in our table.

| H                        |   |        |                           |                                      |         | Table Too  | ols Wooden(         | CraftsDatabase  | : Database- F:\H | ighline\01 Fall 2 |
|--------------------------|---|--------|---------------------------|--------------------------------------|---------|--|---------------------|---|------------------|-------------------|
| File                     | Home  | Create | External Data             | Database                             | e Tools | Design   | ♀ Tell n            | ne what you w   | ant to do        |                   |
| View<br>Views            | Primary<br>Key<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S |        | Rows<br>Rows<br>y Lookups | Property Index<br>Sheet<br>Show/Hide |         | s Create Data Rename/<br>Macros + Delete Macro<br>Field, Record & Table Events |                     | Relationships Object<br>Dependencies<br>Relationships |                  |                   |
| All A<br>Search<br>Table | Access O<br>=s<br>Products  | bje 🖲  | O « D Produce             | Field Na                             | ame     | Au   | Data Ty<br>toNumber | pe  |                  |                   |

iii. To delete the field, right-click the Field Name and click on Delete Rows.



iv. When the dialog box pops up, click Yes, like in this picture:

1.

1.

|  | Deleting field 'ID' requires Microsoft Access to delete the primary key |             |  |  |  |  |
|--|---|-------------|--|--|--|--|
|  | Do you want to delete this fie  | eld anyway? |  |  |  |  |
|  | Ves   | No          |  |  |  |  |

- v. We now need to create our own Primary Key (Unique Identifier for each Product). For the first field in the Products Table, our Data Type, Description and Field Properties are:
  - 1. Field Name = Product ID
  - 2. Data Type = Short Text
  - 3. Description = "Product ID Primary Key Rule for PK = 2 Capital Letters AND 2 Numbers"
  - 4. Field Properties are:
    - i. Field Size = 4
    - ii. Input Mask → >LL00 (this means two letters and two numbers must be entered and letters will be capitalized)

| Products                     |                    |           |   | >  |  |
|------------------------------|--------------------|-----------|---|--|--|
| Field Name Data Type         |                    | Data Type | Description (Optional)  |  |  |
| Product ID Short Text        |                    | rt Text   | Product ID - Primary Key - Rule for PK = 2 Capital Letters Al | ND 2 Numbers                                       |  |
|                              |                    |           | Field Properties  |  |  |
| General Lookup<br>Field Size | 4                  |           |   |  |  |
| Format                       |                    |           |   |  |  |
| Input Mask                   | > LL00             |           |   |  |  |
| Caption                      |                    |           |   |  |  |
| Default Value                |                    |           |   |  |  |
| Validation Rule              |                    |           |   |  |  |
| Validation Text              |                    |           |   | A pattern for all data to be entered in this field |  |
| Required                     | No                 |           |   |  |  |
| Allow Zero Length            | Yes                |           |   |  |  |
| Indexed                      | Yes (Duplicates Ok | 9         |   |  |  |
|                              |                    |           |   |  |  |

vi. To convert the field to a Primary Key, you can right-click the Field Name and click on the Key Icon:

| Field N    | lame |                     | Data Type |
|------------|------|---------------------|-----------|
| Product ID | 0.0  | Chart               | Text      |
|            | 7    | Primary <u>K</u> ey |           |
|            | V    | Cut                 |           |

vii. Here is the Completed Primary Key:

| 🖬 🍤 · 군 · 후  | Table Tools                        | WoodenCraftsDataba  | ase : Database- F:\Highline\01 Fall 2017\1 Busn 216\01 Video File. | Girvin, Michael ? — 🗆 🗙                       |
|--|------------------------------------|---|--|---|
| File Home Create External Data Databa  | <sup>se Took</sup> Prima           | what you  | u want to do   | <u>.</u>                                      |
| View<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>V<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>Views<br>View | Prop<br>Sheet M<br>Show/Hide Field | ON<br>Rename/<br>lacros Delete Macr<br>d. Record & Table Ever | Relationships Object<br>Dependencies<br>nts Relationships          |   |
| All Access Obio  |                                    |   |  | ×   |
| All Access Obje • * Field *  | lame                               | Data Type   | Description (Op  | tional)                                       |
| Search P Product ID  | Short T                            | ext   | Product ID - Primary Key - Bule for PK = 2 Capital Letter          | s AND 2 Numbers                               |
| Tables   | onoren                             | cat   | riodade ib rinnary key nate for the 2 daptar certer                |   |
| Products   |                                    |   |  |   |
| EurophiceData  |                                    |   |  |   |
| Supplierbata   |                                    |   |  |   |
|  |                                    |   | Field Properties   |   |
|  |                                    |   | Field Properties   |   |
| General Lookup   |                                    |   |  |   |
| Field Size   | 4                                  |   |  |   |
| Format   | 0.000                              |   |  |   |
| Input Mask   | > LL00                             |   |  |   |
| Caption  |                                    |   |  |   |
| Default Value  |                                    |   |  |   |
| Validation Rule  |                                    |   |  | A field name can be up to 64 characters long, |
| Validation Text  |                                    |   |  | including spaces. Press F1 for help on field  |
| Required   | Yes                                |   |  | names.  |
| Allow Zero Length  | Yes                                |   |  |   |
| Indexed  | Yes (No Duplicates)                |   |  |   |
| Unicode Compressio   | n Yes                              |   |  |   |
| IME Mode   | No Control                         |   |  |   |
| IME Sentence Mode  | None                               |   |  |   |
| Text Align   | General                            |   |  |   |

viii. The remaining Data Types, Descriptions and Field Properties are seen on the next page. The Raw Data for the Products Table is also seen on the next page.

ix. You can use the below table to complete the Field Names, Data Types and Field Properties for the Products Table, <u>however</u>, for the last two fields, Supplier Code and Wholesale Retail, you want to see instructions on the next few pages.

# Create Table that stores the Raw Data. Table Name = Products

| Field Name: | Product ID | Description      | On Hand | Cost    | Sell Price | Supplier Code | Wholesale Retail |
|-------------|------------|------------------|---------|---------|------------|---------------|------------------|
| Data        | BF01       | Barnyard Friends | 3       | \$27.00 | \$50.00    | SC            | Retail           |
|             | BL23       | Blocks In Box    | 5       | \$14.50 | \$27.00    | AP            | Retail           |
|             | CC14       | Coal Car         | 8       | \$4.50  | \$8.50     | BH            | Retail           |
|             | FT05       | Fire Truck       | 7       | \$4.50  | \$9.00     | AP            | Retail           |
|             | LB34       | Lacing Bear      | 4       | \$6.00  | \$11.00    | AP            | Retail           |
| 3           | MR06       | Midget Railroad  | 3       | \$15.50 | \$29.00    | BH            | Retail           |
| Rav         | PJ12       | Pets Jigsaw      | 10      | \$4.00  | \$8.00     | SC            | Retail           |
|             | RB02       | Railway Bridge   | 1       | \$8.50  | \$16.00    | BH            | Retail           |
|             | SK10       | Skyscraper       | 6       | \$12.50 | \$23.00    | SC            | Retail           |
|             | UM09       | USA Map          | 12      | \$7.00  | \$13.00    | AP            | Retail           |

# Field Names, Data Types & Field Properties For Above Fields (Structure Of The Table)

| Field Name:      | Product ID  | Description               | On Hand   | Cost                                     | Sell Price                  | Supplier Code  | Wholesale Retail  |
|------------------|---|---------------------------|---|--|-----------------------------|--|---|
| Data Type:       | Short Text  | Short Text                | Number  | Currency                                 | Currency                    | Lookup Wizard  | Lookup Wizard   |
| Description:     | Product ID - Primary<br>Key - Rule for PK = 2<br>Capital Letters AND<br>2 Numbers | Description Of<br>Product | Number of Units<br>on Hand -<br>Available to sell | Cost Of<br>Product                       | Selling Price<br>Of Product | Lookup to SupplierData<br>Table to get Primary Key<br>Supplier Code (It is a<br>Foreign Key in this Table) | Wholesale or Retail<br>Lookup (not to<br>another table - just<br>to a list we typed in) |
| Field Size:      | 4   | 25                        | 1   |  | 2                           | 2  | 25  |
| Format:          |   |                           |   |  | 3                           |  |   |
| Input Mask:      | >LLOO   |                           |   |  | 39<br>10                    |  |   |
| Validation Rule: |   |                           | 1   | >=0 and <=500                            |                             |  |   |
| Validation Text: |   | 5                         |   | Enter Amount<br>Between \$0<br>and \$500 |                             |  |   |

- Use Data Type Lookup Wizard to connect the Products table to the SupplierData table with a One-To-Many Relationship between the two Supplier Code Fields. We will also use Lookup Wizard to create a Whole Sale Retail Field.
  - x. Here are the instructions for creating the Supplier Code and Wholesale Retail fields:
  - xi. Supplier Code Field:
    - 1. Type Field Name "Supplier Code"
    - 2. Select the Data Type "Lookup Wizard":

|              |   | Field Name    | Data Type     |  |
|--------------|---|---------------|---------------|--|
| search       |   | Product ID    | Short Text    | Product ID - Primary Key - Rule for PK = 2 Capital Letters AND 2 N |
| Tables       | * | Description   | Short Text    | Description of Product   |
| Products     |   | On Hand       | Number        | Number of Units on Hand - Available to sell                        |
| SupplierData |   | Cost          | Currency      | Cost of Product  |
|              |   | Selling Price | Currency      | Sell Price of Product for Customer                                 |
|              |   | Supplier Code | Short Text    |  |
|              |   |               | Short Text    |  |
|              |   |               | Long Text     |  |
|              |   |               | Number        |  |
|              |   |               | Large Number  |  |
|              |   |               | Date/Time     |  |
|              |   |               | Currency      |  |
|              |   |               | AutoNumber    |  |
|              |   |               | Yes/No        |  |
|              |   |               | OLE Object    |  |
|              |   |               | Hyperlink     |  |
|              |   |               | Attachment    |  |
|              |   |               | Calculated    |  |
|              |   |               | Lookup Wizard |  |

 In the first dialog box, select "I want the lookup field to get the values from another table or query". <u>Then click Next.</u>

| This wizard creates a lookup field, which displays a list of values you<br>can choose from. How do you want your lookup field to get its<br>values? |
|---|
| I want the lookup field to get the values from another table or query.  |
| $\bigcirc$ I will type in the values that I want.   |
|   |
|   |
|   |

4. In the second dialog box, select the SupplierData Table. Then click Next.

| <br>Table: Products<br>Table: SupplierData |
|--|
|  |
|  |
| View                                       |
| ∑ables                                     |

5. In the third dialog box from the Available Fields list on the left, select Supplier Code and then click the Single Arrow Button to move the Field to the Selected Fields on the right.

|  | Which fields of SupplierData contain the values you want included in<br>your lookup field? The fields you select become columns in your<br>lookup field. |
|--|--|
|  | Single Arrow Button  |
| vailable Fields:<br>upplier Code<br>irrst Name<br>ast Name<br>ddress<br>ddress<br>Dity<br>itate<br>ip Code<br>elephone | Selected Fields:   |

6. After you click the Single Arrow Button to move the Field to the Selected Fields on the right, the dialog box will look like the one below. Then click Next.

|   | Which fields of SupplierData contain the values you want included in<br>your lookup field? The fields you select become columns in your<br>lookup field. |
|---|--|
| Available Fields:<br>First Name<br>Last Name<br>Address<br>City<br>State<br>Zip Code<br>Teleohone | Selected Fields:   |

7. In the fourth dialog box, select Supplier Code from the Ascending textbox dropdown. Then click Next.

| 1 | Supplier Code |   | Ascending |
|---|---------------|---|-----------|
| 2 |               | - | Ascending |
| 3 |               | • | Ascending |
| 4 |               |   | Ascending |

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8. In the fifth dialog box, click Next.

| ow wide would you like the width of a c | he columns in y | vour lookup field | ?<br>Ne width vou want | or double-click the |
|---|-----------------|-------------------|------------------------|---------------------|
| ght edge of the column h                | leading to get  | the best fit.     | ie widdi you warit,    |                     |
|   |                 |                   |                        |                     |
|   |                 |                   |                        |                     |
| Supplier Code                           |                 |                   |                        |                     |
| AP                                      |                 |                   |                        |                     |
| BH                                      |                 |                   |                        |                     |
| ER                                      |                 |                   |                        |                     |
| SC                                      |                 |                   |                        |                     |
|   |                 |                   |                        |                     |
|   |                 |                   |                        |                     |
|   |                 |                   |                        |                     |
|   |                 |                   |                        |                     |
|   |                 |                   |                        |                     |

9. In the sixth dialog box, click Finish.

|   | What label would you like for your lookup field?                        |
|---|---|
| × | Supplier Code   |
| - | Do you want to enable data integrity between these tables?              |
|   | Enable Data Integrity   |
|   | 🔘 Cascade Delete  |
|   | Restrict Delete   |
|   | Do you want to store multiple values for this lookup?                   |
|   | Allow Multiple Values   |
|   | Those are all the answers the wizard needs to create your lookup field. |
|   |   |

10. When the next dialog box asks you to save before relationship can be created, click Yes.



11. The finished Supplier Code Field is show. Notice how it adopted the Field Size of 2 from the Primary Key Field in the SupplierData Table.

| Field          | Name Data Ty | pe Description (Optional)  |
|----------------|--------------|--|
| Product ID     | Short Text   | Product ID - Primary Key - Rule for PK = 2 Capital Letters AND 2 Numbers                         |
| Description    | Short Text   | Description of Product   |
| On Hand        | Number       | Number of Units on Hand - Available to sell  |
| Cost           | Currency     | Cost of Product  |
| Selling Price  | Currency     | Sell Price of Product for Customer   |
| Supplier Code  | Short Text   | Lookup to SupplierData Table to get Primary Key Supplier Code (It is a Foreign Key in this Table |
| General Lookup |              | Field Properties   |
| Field Size     | 2            |  |
| Format         |              |  |
| Input Mask     | 3            |  |

- i. Wholesale Retail Field:
  - 1. Type Field Name "Wholesale Retail"
  - 2. Select the Data Type "Lookup Wizard":

| Products \      | C                |           |                                     |                              |
|-----------------|------------------|-----------|-------------------------------------|------------------------------|
| F               | ield Nam         | e         | Data Type                           |                              |
| Product ID      |                  |           | Short Text                          | Product ID - Primary Key - F |
| Description     | n                |           | Short Text                          | Description of Product       |
| On Hand         |                  |           | Number                              | Number of Units on Hand -    |
| Cost            |                  |           | Currency                            | Cost of Product              |
| Selling Price   | Selling Price    |           | Currency                            | Sell Price of Product for Cu |
| Supplier C      | Supplier Code    |           | Short Text                          | Lookup to SupplierData Tak   |
| Wholesale       | Wholesale Retail |           | Short Text                          | ▼                            |
| General Looku   | qu               |           | Long Text<br>Number<br>Large Number | Fie                          |
| Field Size      |                  | 255       | Date/Time                           |                              |
| Format          |                  |           | Currency                            |                              |
| Input Mask      |                  |           | AutoNumber                          |                              |
| Caption         |                  |           | Autonumber                          |                              |
| Default Value   |                  |           | Yes/No                              |                              |
| Validation Rul  | e                |           | OLE Object                          | -                            |
| Validation Text | <u>8</u>         | Ma        | Hyperlink                           |                              |
| Allow Zaro Lon  | ath              | NO        | Attachment                          |                              |
| Indexed         | iyan             | No        | Calculated                          |                              |
| Unicode Comr    | reccion          | Vac       | Calculated                          |                              |
| IME Mode        | 10331011         | No Contro | Lookup Wizard                       |                              |

3. In the first dialog box, select "I will type the values that I want". Then click Next.

| This wizard creates a lookup field, which displays a list of values you<br>can choose from. How do you want your lookup field to get its<br>values? |
|---|
| I want the lookup field to get the values from another table or<br>query.   |
| I will type in the values that I want.  |
|   |
|   |

4. In the second dialog box, type the two values as seen below and then click Next.

| fo a<br>igh | ne list, and then ty<br>adjust the width of<br>t edge of the colun | pe the values yo<br>a column, drag i<br>nn heading to ge | u want in each<br>ts right edge t<br>t the best fit. | o the width | you want, or | double-click the |
|-------------|--|--|--|-------------|--------------|------------------|
| lun         | nber of <u>c</u> olumns:   | 1  |  |             |              |                  |
| Z           | Col1   |  |  |             |              |                  |
|             | Wholesale  |  |  |             |              |                  |
| 8           | Retail   |  |  |             |              |                  |
| *           | 1000 (1000 (1000))   |  |  |             |              |                  |
|             |  |  |  |             |              |                  |
|             |  |  |  |             |              |                  |
|             |  |  |  |             |              |                  |
|             |  |  |  |             |              |                  |
|             |  |  |  |             |              |                  |

5. In the third dialog box, check the box for "Limit To List". Then click Finish.

|   | What label would you like for your lookup field?                        |
|---|---|
| × | Wholesale Retail  |
|   | Do you want to limit entries to the choices?                            |
|   | ☑ Limit To List   |
|   | Do you want to store multiple values for this lookup?                   |
|   | Allow Multiple Values   |
|   | Those are all the answers the wizard needs to create your lookup field. |
|   |   |

6. The finished Wholesale Retail Field looks like this:

| Fie            | ld Name | Data Type  | Description (Op   |
|----------------|---------|------------|---|
| Product ID     |         | Short Text | Product ID - Primary Key - Rule for PK = 2 Capital Letters AND 2 No |
| Description    |         | Short Text | Description of Product  |
| On Hand        |         | Number     | Number of Units on Hand - Available to sell                         |
| Cost           |         | Currency   | Cost of Product   |
| Selling Price  |         | Currency   | Sell Price of Product for Customer                                  |
| Supplier Cod   | e       | Short Text | Lookup to SupplierData Table to get Primary Key Supplier Code (I    |
| Wholesale R    | etail   | Short Text | Wholesale or Retail Lookup (not to another table - just to a list)  |
| General Lookup |         |            | Field Properties  |
| Field Size     | 25      |            |   |
| Format         |         |            |   |
| Input Mask     |         |            |   |

- ii. To Save the completed Products Table, use Ctrl + S.
- iii. The Finished Products Table with Field Names, Data Types and Field Properties is seen in Design View is seen here:

| ਜ਼ ਨਾ∂ਾ =   |  | Table Tools                               | WoodenCraftsDataba  | se : Database- F:\Highline\01 Fall 2017\1 Busn 216\01 Video Files\05 Access\WoodenCra | Girvin, Michael 🤌 — 🗆                     | ×        |
|---|--|---|---|---|---|----------|
| File Home Create Exte                                   | ernal Data 🛛 Database Ti   | ools Design                               | ♀ Tell me what you  | want to do  |   |          |
| View Primary Builder Test Validation<br>Key Rules Tools | S The Products<br>F The Products F The Products F The Products F The Product F The | Property Indexes<br>Sheet<br>Show/Hide Fi | Create Data Rename/<br>Macros * Delete Macro<br>ield, Record & Table Even | Relationships Object<br>o Dependencies<br>ts Relationships                            |   | *<br>×   |
| All Access Obje 0 "                                     | Field Nam  | ie  | Data Type   | Description (Optional)  |   |          |
| Search  | Product ID   | Short                                     | t Text  | Product ID - Primary Key - Rule for PK = 2 Capital Letters AND 2 Numbers              |   |          |
| Tables  | Description  | Short                                     | t Text  | Description of Product  |   | 2        |
| Products  | On Hand  | Num                                       | ber   | Number of Units on Hand - Available to sell   |   |          |
| SupplierData  | Cost   | Curre                                     | ency  | Cost of Product   |   |          |
| Suppreibutu   | Selling Price  | Curre                                     | ency  | Sell Price of Product for Customer  |   |          |
|   | Supplier Code  | Short                                     | t Toyt  | Lookup to SupplierData Table to get Primary Key Supplier Code (It is a Foreign        | Key in this Table)                        |          |
|   | Wholocalo Botail   | Short                                     | tText   | Wholesale or Petail Lookup (not to another table, just to a list)                     | key in this fable                         |          |
|   | Wholesale Retail   | 311011                                    | t Text  | wholesale of Ketali Lookup (not to another table - Just to a list)                    |   |          |
|   |  |   |   |   |   | <b>T</b> |
|   | General Lookup   |   |   | Fiela Properties  | _   |          |
|   | Field Size   | 25  |   |   | -   |          |
|   | Format   |   |   |   | -   |          |
|   | Input Mask   |   |   |   | -   |          |
|   | Caption<br>Default Value   |   |   |   | -   |          |
|   | Validation Rule  |   |   |   | The maximum number of characters vo       | u can    |
|   | Validation Text  |   |   |   | enter in the field. The largest maximur   | n you    |
|   | Required   | No  |   |   | can set is 255. Press F1 for help on fiel | d size.  |
|   | Allow Zero Length  | Yes                                       |   |   |   | annoord: |
|   | Indexed  | No  |   |   |   |          |
|   | Unicode Compression  | Yes                                       |   |   |   |          |
|   | IME Mode   | No Control                                |   |   |   |          |
|   | IME Sentence Mode  | None                                      |   |   | _   |          |
|   | Text Align   | General                                   |   |   | _   |          |
| Design view. F6 = Switch panes. F1 = He                 | elp.   |   |   |   | Num Lock                                  |          |

iv. Click the Datasheet View button to view the Datasheet view:



v. The table has no raw data and shows no records. Click the Close Button to close the Products Table.

| B      | ਿੱਟ ਦੇ ਸ       |             |                                    |                                    | Tab                                 | le Tools                    | Woo  | denCraftsDat                 | abase : Datał         | ase- F:\Highli                                      | Girv       | vin, Michael                                      | ?       | <u>(48</u> 2 |                  | ×       |
|--------|----------------|-------------|------------------------------------|------------------------------------|-------------------------------------|-----------------------------|------|------------------------------|-----------------------|---|------------|---|---------|--------------|------------------|---------|
| File   | Home Create E  | ternal Data | Databa                             | ase Tools                          | Fields                              | Table                       | Q ·  | Fell me what                 | you want to i         | lo  |            |   |         |              |                  | <u></u> |
| View   | Paste          | Filter A    | Ascending<br>Descendir<br>Remove S | ng 🏹 Sele<br>Ng 🛄 Adv<br>ort 🍸 Tog | ection *<br>ranced *<br>Igle Filter | Refresh<br>All <del>*</del> | Save | ∑ Tot<br>♣#⊂ Spe<br>te →  Mo | als<br>elling<br>re * | ) <sup>ab</sup> <sub>cac</sub> Replace<br>→ Go To • | Calib<br>B | ri (Detail)<br>I <u>U</u><br>al <u>v</u> <u>b</u> |         |              | ]===<br> •<br> • |         |
| Views  | Clipboard 🕞    | ·           | Sort &                             | . Filter                           |                                     |                             | Re   | cords                        |                       | Find  |            | Text I  | Formatt | ing          | 1                |         |
| All Ad | ccess Obje 🖻 « | Prod        | ucts                               | -                                  |                                     |                             |      |                              |                       |   |            |   |         |              |                  | ×       |
| Search | ۵              | Proc        | luct ID 👻                          | Descriptio                         | on 🗸                                | On Hand                     |      | Cost -                       | Selling Pr            | ce - Suppli   | er Coc 🔻   | Wholesal  | eF-     | Click to A   | dd 🚽             |         |
| Tables | *              | *           |                                    |                                    |                                     |                             | 0    | \$0.00                       | \$                    | 0.00  |            |   |         |              |                  |         |
| Pro    | oducts         |             |                                    |                                    |                                     |                             |      |                              |                       |   |            |   |         |              |                  |         |
| Su     | pplierData     |             |                                    |                                    |                                     |                             |      | _                            |                       |   |            |   | _       |              |                  |         |
| 8      |                |             |                                    |                                    |                                     |                             |      |                              | Produ                 | ts Table  | Close      | Button  | ł       |              |                  |         |

#### 6. Use Relationship Window to add "Referential Integrity" to One-To-Many Relationship between the two Suppliers Code fields

vi. We need to edit the relationship that was created when we used the Lookup Wizard for the Supplier Code in the Products Table. To edit a relationship, click the Relationships button in the Relationship group in the Database Tools Ribbon Tab.



vii. In the Relationships Window, we can see that there is a Relationship Line between the Supplier Code Fields in both the SupplierData Table Field List and the Products Table Field List.

| 📲 Srett                            |                   |   |   | Relationship | o Tools                                | WoodenCra   | ftsDatabase : D |
|------------------------------------|-------------------|---|---|--------------|--|---|-----------------|
| File Home Cre                      | eate Exter        | nal Data Data   | base Tools                                      | Desig        | ŋ                                      | ♀ Tell me   | what you want   |
| Edit<br>Relationships<br>Tools     | out<br>hip Report | Show<br>Table   | able<br>Relationships<br>ationships<br>ionships | Close        |  |   |                 |
| All Access Obje                    | 🗟 «               | Relationships   |   |              |  |   |                 |
| Search                             | Q                 | Su  | pplierData                                      | 7 [          |  | Products  |                 |
| Products       Image: SupplierData | *                 | Supp<br>First<br>Last<br>Addi<br>City<br>State<br>7in C | olier Code Aname<br>Name<br>ress<br>ress        |              | Pro<br>Des<br>On<br>Cos<br>Sell<br>Sup | duct ID<br>scription<br>Hand<br>st<br>ling Price<br>optier Code |                 |

viii. Using your cursor resize the Field Lists so that appear as they are in this picture:



ix. Very carefully, hover your cursor over the Relationship Line and then Right-click and click on Edit Relationship.



x. In the Edit Relationships dialog box, check the "Enforce Referential Integrity" check box to make sure that you are ONLY allowed to enter a Supplier Code in the Products Table if it is already in the SupplierData Table. This insures a One-To-Many Relationship.

| dit Relationships  | 8 ×        |   |
|--|------------|---|
| Table/Query: Related Table/Query:<br>SupplierData  | ОК         |   |
| Supplier Code 💌 Supplier Code 🔺  | Join Type  |   |
| Enforce Referential Integrity Cascade Update Related Fields Cascade Delete Related Records | Create New | Check the "Enforce Referential Integrity" |
| Relationship Type: One-To-Many   |            | спеск рох                                 |

- xi. Note:
  - 1. Cascade Delete Related Records check box
    - i. You cannot delete a record from a primary table if matching records exist in a related table. For example, you can't delete an employee record from the Employees table if there are orders assigned to that employee in the Orders table. You can choose to delete a primary record and all related records in one operation by selecting the **Cascade Delete Related Records** check box.
  - 2. Cascade Update Related Fields check box
    - i. You cannot change a primary key value in the primary table if doing so would create orphan records. For example, you cannot change an order number in the Orders table if there are line items assigned to that Order in the Order Details table. You can choose to update a primary record and all related records in one operation by selecting the **Cascade Update Related Fields** check box.
- xii. We can see the One-To-Many Relationship. Next click the Close Relationship Window Button.

| File                                | Home                         | Create                     | External Data  | Database Tools  | Design | ♀ Tell me what   | you want to do   |                                   |
|-------------------------------------|------------------------------|----------------------------|----------------|---|--------|--|--|-----------------------------------|
| Edit<br>Relationsh                  | Clea<br>Rela<br>ips<br>Tools | ar Layout<br>itionship Rep | ort Show Table | Hide Table<br>Direct Relationships<br>All Relationships<br>Relationships                                      | Close  |  | Click the<br>Wir   | Close Relationship<br>ndow Button |
| All Ac<br>Search<br>Tables<br>I Pro | ducts<br>ducts               | 9bje ⊗                     |                | SupplierData<br>Supplier Code<br>First Name<br>Last Name<br>Address<br>City<br>State<br>Zip Code<br>Telephone | -      | Pr<br>Product<br>Descript<br>On Han<br>Cost<br>Selling f<br>Supplie<br>Wholest | oducts<br>ID<br>tion<br>d<br>Price<br>r Code<br>ale Retail |                                   |

#### 7. Create a Form for the Products Table

xiii. We need a Form For each of the Tables so that we can enter, edit and delete data in each table. To create a Form for the Products Table , select the Products Table in the Navigation Pane and then click the Form button in the Forms group in the Create Ribbon Tab.



xiv. When the Form for the Products Table appears, click the View dropdown and then click on Form View.

|                |      |             | Create   | External Dat | a Database Too   | ls Design    | Arrange      | Format |            |          |                 |                                      | ۲  |
|----------------|------|-------------|----------|--------------|------------------|--------------|--------------|--------|------------|----------|-----------------|--------------------------------------|----|
|                | View | Themes A    | Colors * | ab]          | Aa 🔤 🗋           | ) 🕀 📧        |              | ] 🗊 [  | <b>~</b> 0 | The Inse | Logo            | Add Existing Propert<br>Fields Sheet | ty |
| _              |      | Form View   |          | 1000         |                  |              | Controls     |        |            |          | Header / Footer | Tools                                | ^  |
|                |      | Layout View | 2 (      | © « I Pro    | Product ID       | ts           |              |        |            |          |                 |                                      |    |
|                |      |             |          |              | Description      |              |              |        |            |          |                 |                                      |    |
|                |      |             |          |              | On Hand          | 0            |              |        |            |          |                 |                                      |    |
| Click the View |      |             |          |              | Cost             | \$0.00       |              |        |            |          |                 |                                      |    |
| drandown and   |      |             |          |              | Selling Price    | \$0.00       |              |        |            |          |                 |                                      |    |
| uropuowir anu  |      |             |          |              | Supplier Code    |              |              |        |            |          |                 |                                      | •  |
| then click on  |      |             |          |              | Wholesale Retail |              |              |        |            |          |                 |                                      | •  |
| Form View      |      |             |          |              |                  |              |              |        |            |          |                 |                                      |    |
|                |      |             |          | Record       | H - 1 of 1 -     | N → Tr. No F | ilter Search |        |            |          |                 | -                                    |    |

xv. Save the Products Form by using the keyboard Ctrl + S. When the Save As dialog box appears, click OK.

| roducts |
|---------|
|         |
|         |

xvi. Using the Close Button for the Products Form, close the Products Form:

| Products   |   |
|------------|---|
| Products   |   |
| Draduct ID |   |
| Productio  | Using the Close Button for the Products Form, close the Products Form |

xvii. The Product Form now appears in the Navigation Pane:

| Search | i            | 5  |
|--------|--------------|----|
| Tab    | les          | \$ |
|        | Products     |    |
|        | SupplierData |    |
| For    | ms           | \$ |
| -8     | Products     |    |

xviii. Repeating the steps for creating a Products Table Form, create a Form for the Supplier Data Table. After you complete the SupplierData Form and close it, the Navigation Pane will contain two tables and two formulas, like in this picture:

| Search | 1            | P  |
|--------|--------------|----|
| Tab    | les          | *  |
|        | Products     |    |
|        | SupplierData |    |
| For    | ms           | \$ |
| -8     | Products     |    |
| -8     | SupplierData |    |

#### 8. Add data to Products table using the Products Form

- i. Double-click the Products Form to open it and then enter the raw data for each record. The raw data for each record is listed below.
  - 1. Be sure to use the Tab Key to move to the next field. When you get to the end of the last field for each record, hitting the Tab Key will move you to the first field in the next record.
  - 2. Also, be sure to check each one of the Data Validation "Data Types" and "Field Properties" that you created for this table. For example, see what happened if you type more than 4 characters into the Product ID Field or see what happens if you type a cost of 1000 into the Cost Field.

| Product ID | Description      | On Hand | Cost    | Sell Price | Supplier Code | Wholesale Retail |
|------------|------------------|---------|---------|------------|---------------|------------------|
| BF01       | Barnyard Friends | 3       | \$27.00 | \$50.00    | SC            | Retail           |
| BL23       | Blocks In Box    | 5       | \$14.50 | \$27.00    | AP            | Retail           |
| CC14       | Coal Car         | 8       | \$4.50  | \$8.50     | BH            | Retail           |
| FT05       | Fire Truck       | 7       | \$4.50  | \$9.00     | AP            | Retail           |
| LB34       | Lacing Bear      | 4       | \$6.00  | \$11.00    | AP            | Retail           |
| MR06       | Midget Railroad  | 3       | \$15.50 | \$29.00    | BH            | Retail           |
| PJ12       | Pets Jigsaw      | 10      | \$4.00  | \$8.00     | SC            | Retail           |
| RB02       | Railway Bridge   | 1       | \$8.50  | \$16.00    | BH            | Retail           |
| SK10       | Skyscraper       | 6       | \$12.50 | \$23.00    | SC            | Retail           |
| UM09       | USA Map          | 12      | \$7.00  | \$13.00    | AP            | Retail           |

- i. The next Page shows the Products Table after all the Raw Data is Entered.
- ii. This is the end of Video #39.
- iii. Next Video we will learn how to create Queries in Access.

| 🖬 5- <i>2-</i> =                                  | Table Tools WoodenCraftsDatabase   |  | CraftsDatabase : I            | Database- F:\Highli  | ne\01 Fall 2017\1 I  | 3usn 216\01 Video                      | Files\05 Acce   | Girvin, Michael                                      | ? —                 |          | × |   |
|---|--|--|-------------------------------|--|--|--|---|--|---------------------|----------|---|---|
| File Home Create External D                       | ata Database Tools   | Fields Tabl  | le 🛛 🛛 Tell n                 | Q Tell me what you want to do                              |  |  |   |  |                     |          |   | • |
| View Paste Format Painter                         | Ascending     ▼ Set       Z↓ Descending     ► Ad       Arrow Sort     ▼ To | ection *<br>vanced *<br>ggle Filter  | h New ⊡<br>New Save           | ∑ Totals<br>♣<br>Spelling<br>More +                        | Find   | Calibri (Detail                        | ) • 11<br><u>A</u> • <u>abr</u> • <u>A</u> •                    | <ul> <li>I = ±=   ±=</li> <li>I = = =   ↓</li> </ul> | ≝   нт -<br>∦-   ⊞- |          |   |   |
| Views Clipboard 🕞                                 | Sort & Filter  |  | Records                       |  | Find   |  | Text Form   | atting   | 5                   |          |   | ~ |
| All Access Objects                                | Products   |  |                               |  |  |  |   |  |                     |          |   | × |
| Search   Tables   Products  SupplierData Forms    | Product ID - Du<br>BF01 Ba<br>BL23 Bl<br>CC14 Cc<br>FT05 Fin               | escription   O  Innyard Frien  O  Cocks in Box  Dal Car  Te Truck  Cing Bear | On Hand •<br>3<br>5<br>8<br>7 | Cost -<br>\$27.00<br>\$14.50<br>\$4.50<br>\$4.50<br>\$4.50 | Selling Price +<br>\$50.00<br>\$27.00<br>\$8.50<br>\$9.00<br>\$11.00 | Supplier Coc +<br>SC<br>AP<br>BH<br>AP | Wholesale F +<br>Retail<br>Retail<br>Retail<br>Retail<br>Retail | Click to Add 🗸                                       |                     |          |   |   |
| Products<br>SupplierData                          | MR06 M<br>PJ12 Pe<br>RB02 Ra<br>SK10 Sk                                    | idget Railroa<br>ets Jigsaw<br>ilway Bridge<br>yscaper                       | 4<br>3<br>10<br>1<br>6        | \$15.50<br>\$4.00<br>\$8.50<br>\$12.50                     | \$11.00<br>\$29.00<br>\$8.00<br>\$16.00<br>\$23.00                   | BH<br>SC<br>BH<br>SC                   | Retail<br>Retail<br>Retail<br>Retail                            |  |                     |          |   |   |
|   | WM09 US  | A Map  | 12<br>0                       | \$7.00<br>\$0.00   | \$13.00<br>\$0.00  | AP                                     | Retail  |  |                     |          |   |   |
| Product ID - Primary Key - Rule for PK = 2 Capita | I Letters AND 2 Numbers  | P PI PI To NO I  | Filter                        |  |  |  |   |  |                     | Num Lock | Ē | 2 |

# New Keyboards in Video

1. F6 = Jump from Field Name area to Field Properties area in Table Design View