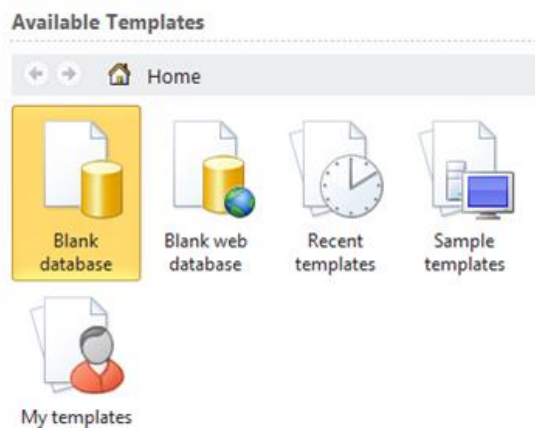**First tutorial:**

Go over the requirements for A3

Second tutorial:

Resource link (also available on the course web page – see lecture topic section)
https://support.office.com/en-us/article/Design-and-build-tables-for-a-database-Access-basics-part-1-bff6e7b2-3055-419b-8751-1ade558ea31f?ui=en-US&rs=en-US&ad=US
Good tutorial videos

- Starting Access
- Create a blank database

- Switching from DataSheet to Design view

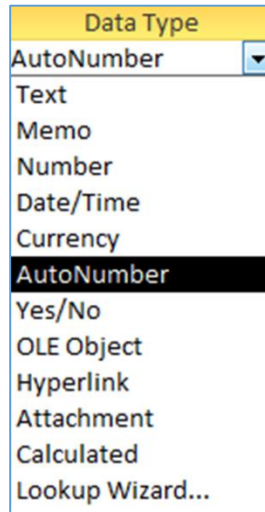The contents of the 'general tab' (will vary depending upon the type of data specified for an attribute.

General	Lookup	
Field Size	9
Format	
Input Mask	>\ELL\-009
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	Yes
Allow Zero Length	Yes
Indexed	Yes (No Duplicates)
Unicode Compression	No
IME Mode	No Control
IME Sentence Mode	None
Smart Tags	

Some of the more common properties that will appear in this tab include:

- Field size: for text it's the maximum number of characters allowed for an attribute.

- Default value: it's the starting value seen in the datasheet view before the user enters information for a record

- Required: setting this property to 'yes' forces the user to enter a value for this attribute, it cannot be left blank.

- Text align: similar to the horizontal alignment option in Excel and the most commonly selected options allows data to be left, right or center aligned.

- Input mask, validation rule and validation text: are properties that are very useful for specifying the format and type of information that can be entered for an attribute. More on this later.

Overview of data types
- Attribute data types (explain these ones)

Data Type
AutoNumber ▼
Text
Memo
Number
Date/Time
Currency
AutoNumber
Yes/No
OLE Object
Hyperlink
Attachment
Calculated
Lookup Wizard...

  - Text
  - Number
  - Date/Time
  - Currency
  - AutoNumber
  - Attachment i.e. this is used to store images for A3
    - How to store non-text information e.g., images (as attachments – not as an OLE) in a database
  - Calculated: deriving an attribute from other attributes in a table (not what they are supposed to do for A3 but still useful)
  - Lookup Wizard: sets up primary-foreign key relationship to ensure data integrity (more on this later)
- How and why to document the fields of a database via the 'description' in the design view (they have to do this in A3 so keep this in mind when you teach this section).
- Descriptions from your example database (**example of what students should do is shown in the following graphic**)

Field Name	Data Type	Description
EmployeeNumber	Text	Format: <3 capital letters - first letter will always be E>-<2 or 3 digits)
LastName	Text	
FirstName	Text	
Address	Text	
City	Text	
Province	Text	
HomePhone	Text	Format: Open bracket, Three digits, Closing bracket, Three Digits, Dash, Four Digits
BirthDate	Date/Time	Format (numerical): Month, Day, Year (Date must be between Jan 1 1900 and Oct 31 1989)
PayRate	Currency	Hourly rate in the range of $10 - $100

**Entering information in the database**
- Show them how to switch back to DataSheet view
- Show them how to create a graphical form (Create->form)
  - The default form created by MS-Access is sufficient for A2
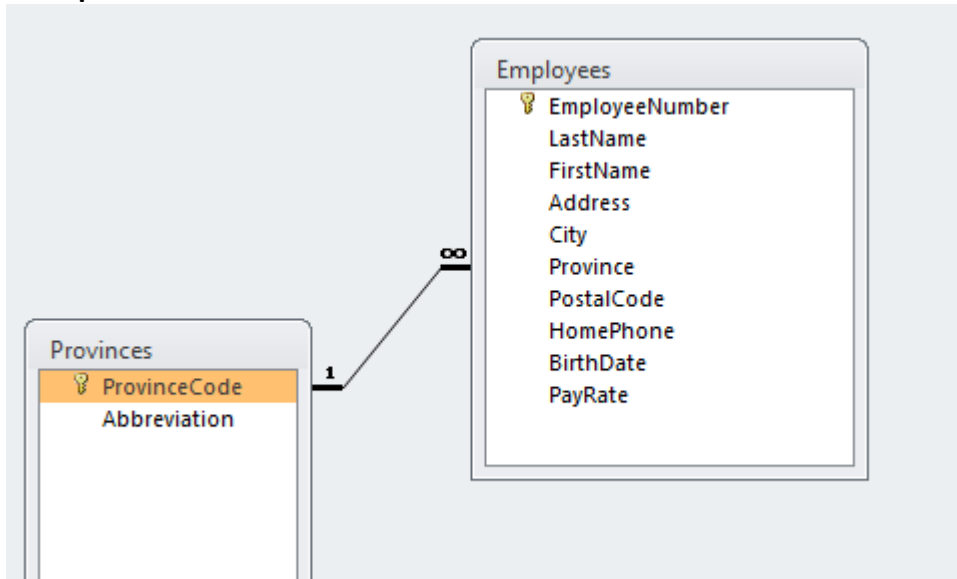
Primary key:
  - What is it, what's the purpose?
  - How to designate an attribute as a primary key in Access
  - How to designate a composite primary key in Access

Multiplicity/relationships between tables
- **An example from:** https://msdn.microsoft.com/library/ee382826(v=vs.100).aspx
- One to one (rare but possible)
  - Typically use to split up a large table
  - E,g, Employee:SIN
- One to many
  - Publisher: Book (1:* primary-foreign key)
- Many to many (TAs show an example of how to implement this as two one to many relationships)
  - Create a connector table in the example below (min attributes includes primary keys of both tables)
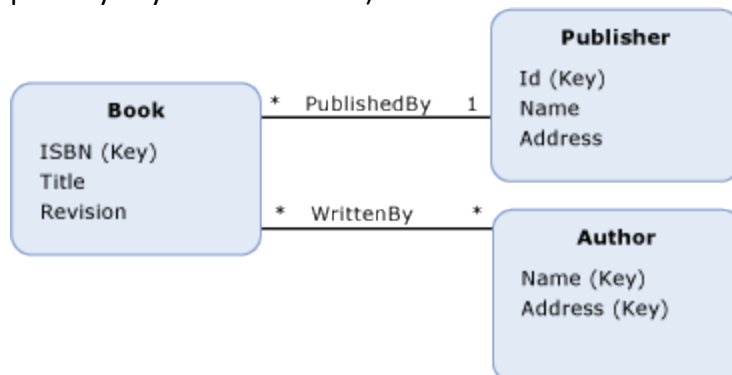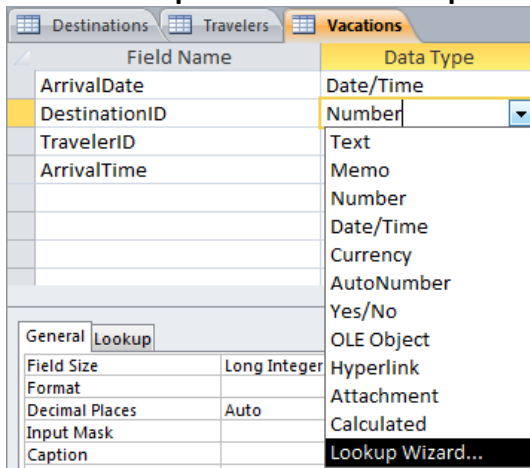
Example database

Foreign-Primary key relationship between Provinces and Employees (each employee lives in one province, a province can have many employees living there)

How to set up a FK-PK relationship

Make sure they 'ensure referential integrity'

(Ensuring this integrity prevents errors)

Input mask examples

Note: \<character>

- o   Automatically displays the character in DataSheet view
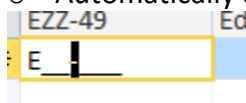
- o   User does not have to data enter the character nor does the character have to be entered during the query (reduces keystrokes, reduces number errors)

Employees:EmployeeNumber:
- Format: <3 capitial letters - first letter will always be E>-<2 or 3 digits)
  - EAA-23

Employees:HomePhone
- Format: Open bracket, Three digits, Closing bracket, Three Digits, Dash, Four Digits
  - (403)210-9455

Provinces:Abbreviation
- Format: Two character code, capitalize
  - AB, BC