MS Access — Database Basics

Database. An organized collection of facts about a particular subject.

- ➢ **Field.** A single item of information.
- ➢ **Field Type.** Specified format of data in a particular field.
- ➢ **Structure.** The fields that comprise a database. This layout organizes the database.
- ➢ **Record.** A collection of information stored in related fields.
- ➢ **Primary Key.** A unique field that identifies each record in a database and allows databases to be linked together.

Database Management System (DBMS). Allows information to store, search, filter, query, and report on the data in a database.

Access. Microsoft's DBMS.

Database Objects. Tools used to store, maintain, search, analyze, and report on the data in a database.

- ➢ **Table or Datasheet.** Data is formatted in rows and columns such as in a spreadsheet.
- ➢ **Form.** Format that displays one record (or row of a table/datasheet) at a time.
- ➢ **Query.** A structured way to tell Access to retrieve data that meets certain criteria from one or more database tables.
- ➢ **Report.** A formatted way to display information retrieved from the database. It formats and analyzes data you specify.

Access Database Organization. This DBMS maintains, in single file, database objects that are displayed in the database window. This window contains tabs for each object. Each tab displays lists of the named objects of that type.

Database Design

At its simplest level, a database is a collection of related data. A database management system (DBMS) is a system that is designed for two main purposes:

1. To add, delete, and update the data in the database.
2. To provide various ways to view (on screen or in print) the data in the database.

When we talk about computerized DBMS's, there are two types:

- ➢ **Flat Database.** A simple table with all related information groups as a record in a row.
- ➢ **Relational Database.** A more complex but more versatile way to set up a database. Rather than working with one table, the information is broken down into a series of tables that share a common field to link them together.

Working with a set of tables involves more planning. In typical business situations, using a series of tables results is easier and creates a more manageable DBMS. Microsoft Access is capable of working with either type.

As always, we will start with simpler, flat databases. This will make it easy to get started and master the basics. Then, we will work with relational databases; because these are the types that are typically used in business situations.

Create your first database!

- ➢ Open Access. This project uses **BLANK DESKTOP DATABASE**
- ➢ The next prompt asks if you want to **USE ACCESS APP OR ACCESS DESKTOP.** You may **ignore this**.
- ➢ Name your database, using our **camelCase** naming format, **studentDatabase**, then click **CREATE**.
- ➢ You will then see a screen with 2 PANES (screen is divided into 2 parts)**.**
- ➢ Remember, a database is a set of information that is related. It is abstract and can be shown in different forms.
- ➢ The different ways we see and use a database are called **OBJECTS**
- ➢ By default, the object you will see is a **TABLE**. Remember: This is only one way to view and use the database. It is an "object"
- ➢ On the back are screencaptures to design a database with 6 fields (shown as column heading in the table)
- ➢ CLICK TO ADD a field, using the pull-down menu shown on this handout to select data format.
- ➢ When saving, you will asked to save the TABLE object. Please use: studentTable1

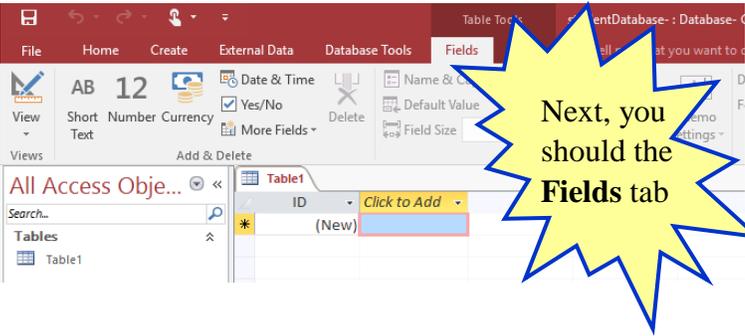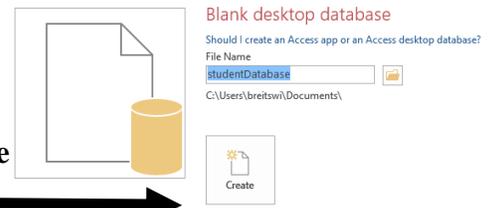**Step 1.** Launch Access and select **Blank Desktop Database**

Step 2. Name your database **studentDatabase**

Blank desktop database
Should I create an Access app or an Access desktop database?
File Name
studentDatabase
C:\Users\breitswi\Documents\

Create

Step 3. Click to add field and pull-down the menu to select format for that field

Next, you should the **Fields** tab
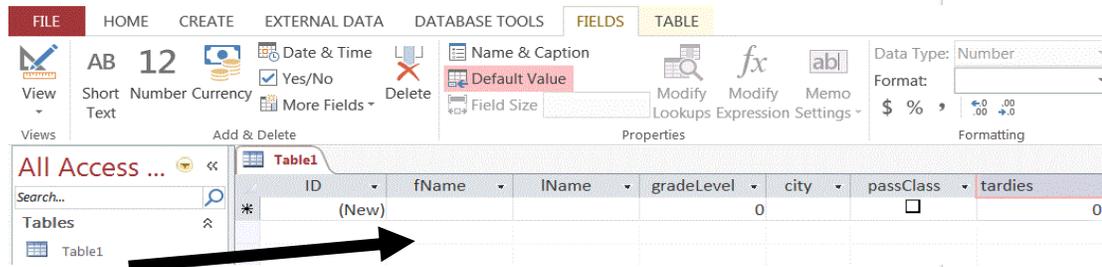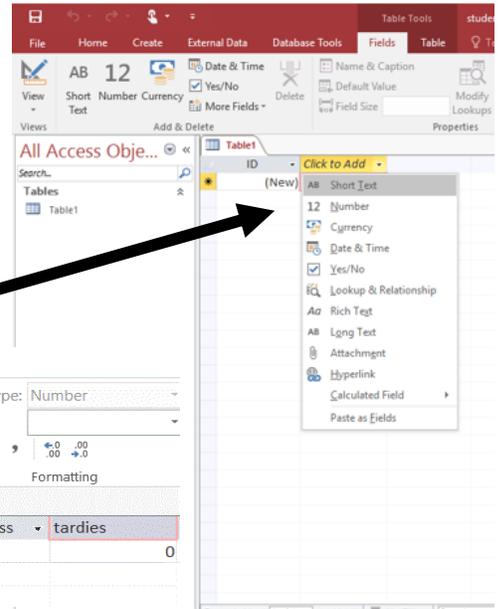
Step 4. Create 5 fields: fName (Short Text), lName (Short Text), city (Short Text), passClass (Yes/No), Tardies Number).

Step 5. Please be sure to save your work at this point! When you save, you will be prompted to save the default **Table1.** Please save this object (table) as **tosaStudents**
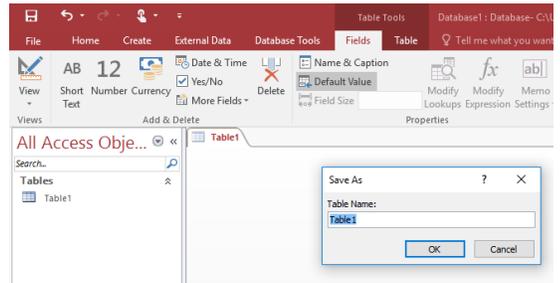
Remember, a database is not a table! It is a set of relationships between fields of data. **One option is to view it as a table.** When learning databases, it is easiest to view them as a table.

First Name	Last Name	Grade Level	City of Residence	Passed Class (Check box)	Tardy to Class #
Ian	Hemming	9	Wauwatosa	Yes	0
Teddy	Sullivan	9	Wauwatosa	Yes	1
Jacob	Stuczynski	10	Wauwatosa	Yes	5
Elliot	Kite	9	Wauwatosa	Yes	1
Tong	Zhang	11	Wauwatosa	Yes	30
Anjika	Verma	10	Wauwatosa	Yes	0
Zachary	Schumacher	9	Wauwatosa	Yes	1
Melissa	Biefeld	11	Wauwatosa	Yes	11
Zewdei	Gebremedhin	12	Wauwatosa	Yes	0
Dylan	Glodoski	12	Wauwatosa	Yes	22
Brayden	Korman	9	Wauwatosa	Yes	6
Nathaniel	Stewart	10	Milwaukee	No	5
Reggie	Walls	12	Milwaukee	Yes	25
Jessie	Watson	12	Wauwatosa	Yes	4
Michael	Zenisek	11	Wauwatosa	No	5
Monroe	Phillips	10	Wauwatosa	Yes	9