# DATABASES (2)

## List of Microsoft Access objects:

- Tables hold the raw data
- Queries extract some of the data in order to answer questions
- Forms user-friendly layouts to display data on the screen (either in a table or from a query)
- **Reports** output files, ready for printing

## Creating a Database:

Let's assume that your hobby is collecting old 45 rpm records from the classic rock era of the 50s and 60s. You decide to create a database to help you manage your collection. We will create an Access database to store the following information about your collection:

Label	Number	Artist	A-Side	B-Side	Condition	Price
Swan	4152	Beatles	She Loves	I'll Get	Excellent	\$150.00
			You	You		
Swan	4152	Beatles	She Loves	I'll Get	Fair	\$75.00
			You	You		
Swan	4152	Beatles	She Loves	I'll Get	Poor	\$10.00
			You	You		
Capitol	5555	Beatles	We Can	Day	Good	\$50.00
			Work it	Tripper		
			Out			
Soma	1137	Fendermen	Muleskinner	Torture	Good	\$8.50
			Blues			
Soma	1137	Fendermen	Muleskinner	Torture	Fair	\$5.00
			Blues			
Decca	29791	Haley, Bill	See You	The	Excellent	\$12.00
		and the	Later	Paper		
		Comets	Alligator	Воу		
Mercury	71032	Platters	I'm Sorry	He's	Fair	\$15.00
				Mine		
Volt	157	Redding,	(Sittin' On)	Sweet	Good	\$6.50
		Otis	The Dock	Lorene		
			of the Bay			

Notice the duplication in several fields in this table (for example, in the first three Beatles records). To remove the duplications, we will construct the

database with more than one table. In this case we will use two tables, one to store information about each 45 record and one to store information about the copies of that record that you have... Recall that each table must have a primary key field. We will add unique IDs as primary keys in the two tables. ID45 will identify a 45 rpm record that was issued. IDSpecific will identify a specific copy you own. Instead of storing a word for the condition, we will use one letter (e.g., "E" for "Excellent") to specify the condition, which will make data entry easier.

tblissue					
ID45	Label	Number	Artist	A-Side	B-Side
1	Swan	4152	Beatles	She Loves	I'll Get You
				Уои	
2	Capitol	5555	Beatles	We Can	Day
				Work it	Tripper
				Out	
3	Soma	1137	Fendermen	Muleskinner	Torture
				Blues	
4	Decca	29791	Haley, Bill	See You	The Paper
			and the	Later	Boy
			Comets	Alligator	
5	Mercury	71032	Platters	I'm Sorry	He's Mine
6	Volt	157	Redding,	(Sittin' On)	Sweet
			Otis	The Dock	Lorene
				of the Bay	

#### tblIssue

#### tblVALUE

IDSpecific	ID45	Condition	Price
1	1	E	\$150.00
2	1	F	\$75.00
3	1	Ρ	\$10.00
4	2	G	\$50.00
5	3	G	\$8.50
6	3	F	\$5.00
7	4	E	\$12.00
8	5	F	\$15.00
9	6	G	\$6.50

Having figured out the tables we need, we are ready to create our database.

## **Creating a New Database**

Choose **Blank database** from the New File menu at the right. In the **Blank Database** section that appears on the right side of the screen, click on the **Folder icon** to choose where you want to save the database.

Choose the name Records (Replacing the words Database1) for your database. Click on **Create**.

Click on the **Design View** button.



### Name the table **tblIssue**.

Save As		?	×
Table Name: tblIssue			
	ОК	Ca	ncel

You now should see the **Design View** of the table - the view we use when we want to work on the structure of the database, as opposed to the data stored in the database. The Design View allows you to enter names of the fields in the table and to specify their data types. A data type indicates the kind of data to be stored—for example, numbers, text, or dates. It is best to select the type that most closely matches the kinds of values you are storing in a field.

All Tables ♥ tblfssue Ⅲ tblfssue : Table	*	Field Nam	Data Type AutoNumber		Description		Selection type: Table Proper General Display Views on SharePoir Subdatasheet Expanded Subdatasheet Height Orientation Description	
							Display Views on SharePoin Subdatasheet Expanded Subdatasheet Height Orientation	No 0"
							Subdatasheet Expanded Subdatasheet Height Orientation	No 0"
							Subdatasheet Height Orientation	0-
							Orientation	
								Left-to-Right
							Description	
							Default View	Datasheet
							Validation Rule	
							Validation Text	
							Filter	
							Order By	
							Subdatasheet Name	[Auto]
							Link Child Fields	
							Link Master Fields	
							Filter On Load	No
							Order By On Load	Yes

					<b>v</b>	
			Field Properties			
(					¬	
General Lookup						
Field Size	Long Integer					
New Values	Increment					
Format						
Caption						
Indexed	Yes (No Duplicate	es)				
	Yes (No Duplicate	es)		A field name can be up to 64 characters long, including spaces. Press F1 for help on field		

When you design a table, the first thing you do is to specify the **Field Names** and the **Data Types** - the type of data that is allowable for each field. A few common data types are listed below:

Data Type	Allowable Field Values	Number of Characters
Text (Default data type)	Letters and Numbers	Up to 255
Number	Numbers	Up to 64,000
AutoNumber	Numbers in Sequence	
Currency	Numbers	
Date and Time	Numbers	

The first **Field Name** we will enter is ID45, the field we will use as the primary key to uniquely identify each record. Enter "ID45" as the first field name. Its **Data Type** should be **AutoNumber**.

	tblIssue								
-		Field Name		Data Tvo	e				
3	ID45			AutoNumber					

The new field probably will be designated as the primary key for the table - see if there is a small key icon to the left of the field name.

If the ID45 field has not been designated as the primary key, right click on the Field Name. In the menu that pops up, select **Primary Key**.

tblIssue			
	Field Name	2	Da
🖗 ID45			AutoNur
	8	Primary <u>K</u> e	y I
	Ж	Cu <u>t</u>	
	62	⊆ору	
		<u>P</u> aste	
	3-	Insert Rov	vs
		Delete Ro	ws
		<u>B</u> uild	
	😭	<u>Properties</u>	
	_		

Enter "Label" as the second field name. The default Data Type is Text, which is appropriate for this field. You will see a list of **Field Properties** at the bottom of the Design View window. The default Field Size for a Text field is 255, which is much bigger than a record label name is ever going to be. Change the **Field Size** to 20.

tblissue	
Field Name	Data Type
8 ID45	AutoNumber
Label	Text
	Field Properties
General Lookup	
Field Size 2	
T Officiat	
Input Mask	
Caption	

Enter the other Field Names as shown below. Use 100 as the lengths for Artist, A\_Side and B\_Side. When you have entered them, click on the **Save** icon to save the table.

		Table Too	s Records : Dat
me Create Extern	al Data Database To	ols Design	
View mary Builder Test Validatio Key Tools	🖧 Lookup Column	Property Sheet	5
10013	Ļ	Show, mac	
Security Warning Certain content	t in the database has beer	n disabled O	ptions
All Tables 💿 «	tblIssue		
tblIssue	Field Na	ame	Data Type
tblIssue : Table	ID45		AutoNumber
	Label	-	Text
	Number		Number
	Artist		Text
	A_Side	-	Text
	B_Side		Text

## Adding Data to a Table

Now that the tables have been created we need to populate them with data. We will start with **tblIssue**. Select the "tblIssue" tab and choose **Datasheet View** from the **View** menu.

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88	<b>9</b> - 0	₩ + ) <del>+</del>						Table To	ools	Records
	Home	Create	Extern	al D	ata Dat	abase To	ools	Desig	in	
View	Primary B Key	uilder Tes	t Validatio Rules		⊶ Insert Roo → Delete Ro ∰ Lookup C	ws	Prope	rty Inde		
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	PivotTable	View	• «		tblissue	tbn	Value			
			×			Field N	ame			Data Type
	PivotChart	View	~	8	ID45				Au	itoNumber
					Label				Те	xt
	Design View				Number				NU	umber
	]				Artist				Те	xt
					A_Side				Те	xt
					B_Side				Те	xt

This will display the **Datasheet View** of the table - the view in which you add data to the table. This view is reminiscent of a spreadsheet. Each column is labelled by a field name.

The Home tab should be selected. If it is not, click on the Home tab to select it.

Enter the data in the table below into the database. Don't type anything in the ID45 field, which is autonumbered. Every time you make an entry of a new Label, the next number will automatically be added to the corresponding ID45 cell. When you have entered the data for one cell, pressing the **Tab** key will move to the next cell on the right.

ID45	Label	Number	Artist	A-Side	B-Side
1	Swan	4152	Beatles	She Loves	I'll Get You
				You	
2	Capitol	5555	Beatles	We Can	Day
				Work it	Tripper
				Out	
3	Soma	1137	Fendermen	Muleskinner	Torture
				Blues	
4	Decca	29791	Haley, Bill	See You	The Paper
			and the	Later	Воу
			Comets	Alligator	
5	Mercury	71032	Platters	I'm Sorry	He's Mine
6	Volt	157	Redding,	(Sittin' On)	Sweet
			Otis	The Dock	Lorene
				of the Bay	