

Database Filters

Rishi H. Heerasing
Lecturer

School of Innovative Technologies and Engineering
UTM

Learning Outcomes

- Filtering Data with the Select Expert
- Viewing and Editing the Select Formula
- Selecting Records with multiple Criteria
- Using Parameter at Run-time

Database Filters

- You can quickly filter data by invoking the Select Expert. You can do this either by right-clicking on any field and choosing a Select Expert Option or clicking on the icon in the Expert Toolbar.
- Select Expert Options come in three types:
 - Select Records
 - Select Groups (later)
 - Select Saved Data

Database Filters

- We will use the Xtreme database again.
- Select the Product, Product Type and Purchases Tables.
- Select the following fields from the above tables:
 - *Product table*: Select Product ID, Product Name, Color, Size, and M/F.
 - *Product_Type table*: Select Product Type Name.
 - *Purchases table*: Select Reorder Level, Units in Stock, and Units on Order.

Database Filters

- As the column headings are much wider than their content, resize them on two lines. You should get something similar as below. (44 Records)

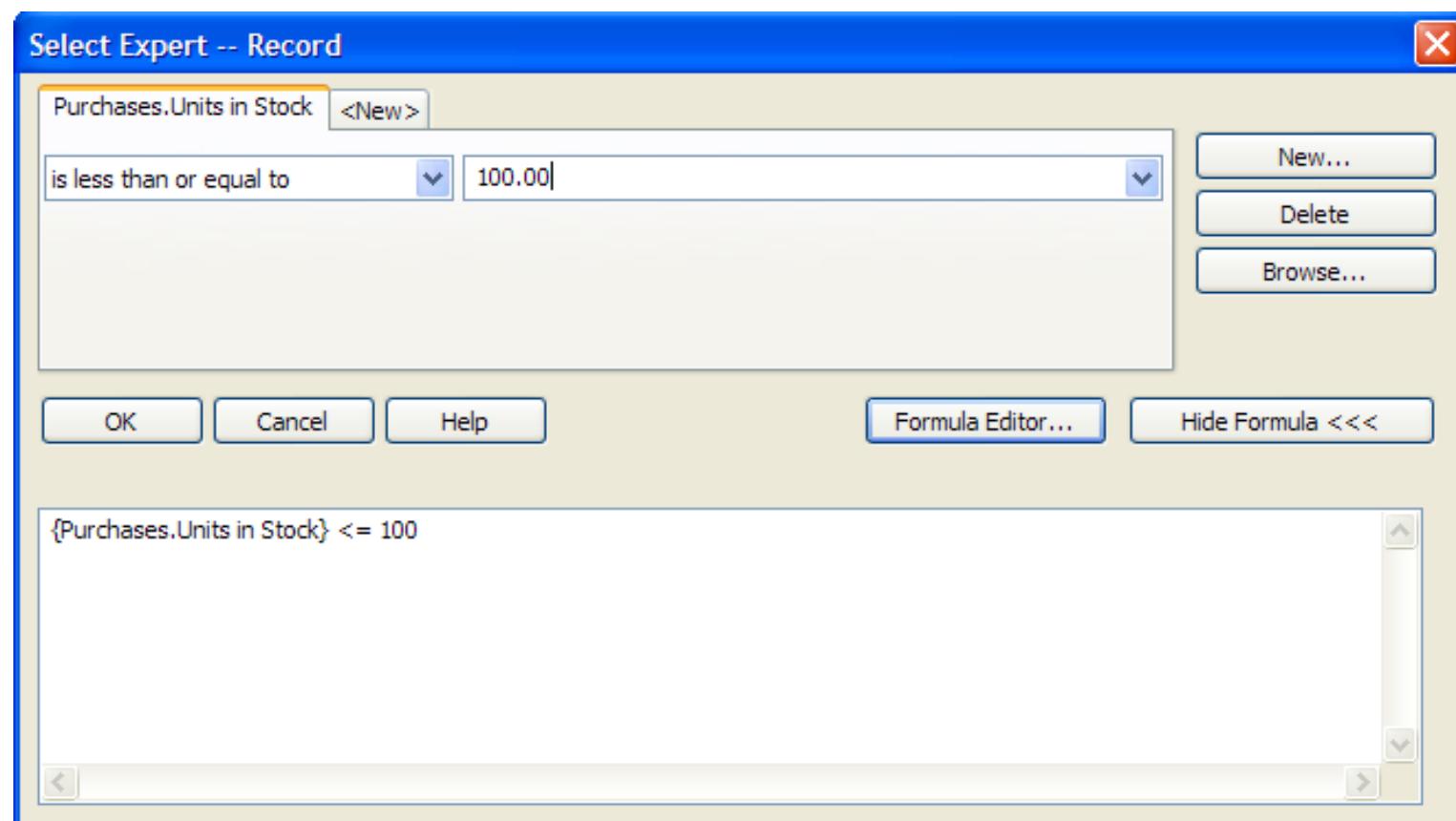
<u>Product ID</u>	<u>Product Name</u>	<u>Color</u>	<u>Size</u>	<u>M/F</u>	<u>Product Type Name</u>	<u>Reorder Level</u>	<u>Units in Stock</u>	<u>Units on Order</u>
1,101	Active Outdoors Crochet Glove		xsm		Gloves	300	220	500
1,102	Active Outdoors Crochet Glove		sm		Gloves	300	450	0
1,103	Active Outdoors Crochet Glove		med		Gloves	300	325	0
1,104	Active Outdoors Crochet Glove		lrg		Gloves	300	265	0
1,105	Active Outdoors Crochet Glove		xlrg		Gloves	300	367	0
1,106	Active Outdoors Lycra Glove		xxsm		Gloves	300	440	0
1,107	Active Outdoors Lycra Glove		xsm		Gloves	300	358	0
1,108	Active Outdoors Lycra Glove		sm		Gloves	300	266	500
1,109	Active Outdoors Lycra Glove		med		Gloves	300	750	0
1,110	Active Outdoors Lycra Glove		lrg		Gloves	300	112	500
1,111	Active Outdoors Lycra Glove		xlrg		Gloves	300	686	0
2,201	Triumph Pro Helmet	black	sm		Helmets	100	78	150
2,202	Triumph Pro Helmet	white	sm		Helmets	100	80	0
2,203	Triumph Pro Helmet	black	med		Helmets	100	55	150
2,204	Triumph Pro Helmet	white	med		Helmets	100	169	0

Database Filters

- The report shows 44 records whereas one could only want to know products like helmets which are in critically short supply.
- As the Reorder Level of helmets is 100, we can filter helmets whose stock level is less or equal to 100.
- Choose Select Expert from the Toolbar.
- You will be asked to select the field: select Purchases.Unit in Stock and click OK

Database Filters

- Next Select the appropriate condition from the Select Expert drop-down and set the value to 100 as below:



Database Filters

- You are asked whether to use Saved Data or Refresh Data. If you are sure that the data has not changed then use Saved Data else Refresh. Refreshing can be a performance hit when dealing with very large DBs. (14 rec)

<u>Product ID</u>	<u>Product Name</u>	<u>Color</u>	<u>Size</u>	<u>M/F</u>	<u>Product Type Name</u>	<u>Reorder Level</u>	<u>Units in Stock</u>	<u>Units on Order</u>
2,201	Triumph Pro Helmet	black	sm		Helmets	100	78	150
2,202	Triumph Pro Helmet	white	sm		Helmets	100	80	0
2,203	Triumph Pro Helmet	black	med		Helmets	100	55	150
2,207	Triumph Vertigo Helmet	black	sm		Helmets	100	89	0
2,211	Triumph Vertigo Helmet	red	med		Helmets	100	92	150
2,215	Triumph Vertigo Helmet	white	lrg		Helmets	100	69	150
3,302	Guardian "U" Lock				Locks	75	22	125
3,304	Guardian ATB Lock				Locks	75	56	0
3,305	Guardian Mini Lock				Locks	75	87	0
6,401	Roadster Jr BMX Saddle			youth	Saddles	50	75	0
7,401	Vesper Comfort ATB Saddle			mens	Saddles	50	41	0
7,402	Vesper Comfort Ladies Saddle			ladies	Saddles	50	69	0
7,403	Vesper Gelflex ATB Saddle			mens	Saddles	50	88	0
7,404	Vesper Gelflex Ladies Saddle			ladies	Saddles	50	97	0

Database Filters

- Unfortunately, some products whose Stock Levels might be higher than their Reorder levels are also displayed. Also, some types of helmets have already been ordered.
- Instead of using a fixed Value for Reorder Level, we could instead filter records whose Stock Level is below or equal to the Reorder Level.
- We can achieve this by creating a more complex formula by making use of Selection Formulas.
- Choose Report-> Selection Formulas-> Record

Database Filters

- In the Formula Workshop, remove 100 and replace it with {Purchases.Reorder Level}
- Save. You should get something similar: (15 rec)

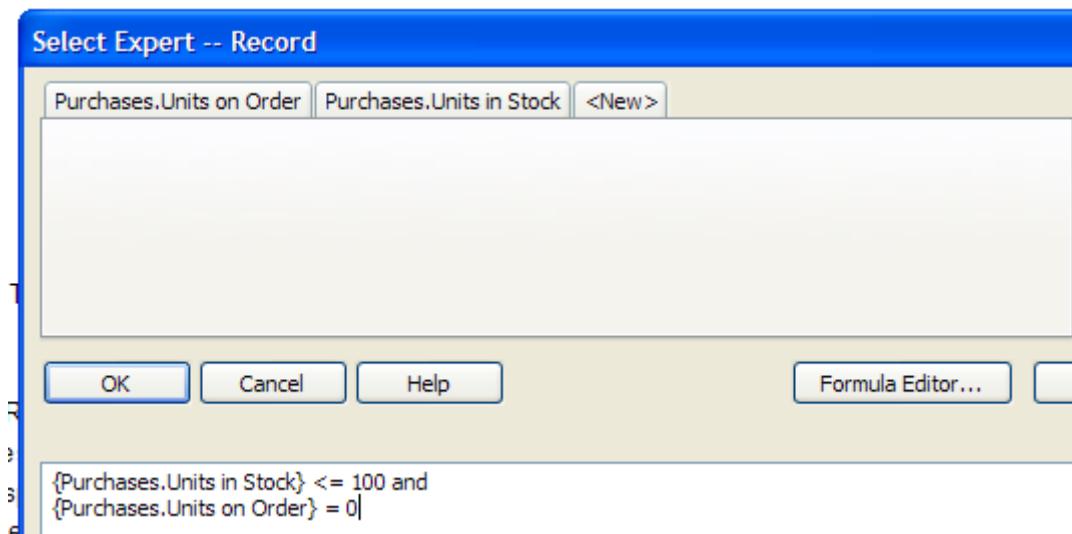
<u>Product ID</u>	<u>Product Name</u>	<u>Color</u>	<u>Size</u>	<u>M/F</u>	<u>Product Type Name</u>	<u>Reorder Level</u>	<u>Units in Stock</u>	<u>Units on Order</u>
1,101	Active Outdoors Crochet Glove		xsm		Gloves	300	220	500
1,104	Active Outdoors Crochet Glove		lrg		Gloves	300	265	0
1,108	Active Outdoors Lycra Glove		sm		Gloves	300	266	500
1,110	Active Outdoors Lycra Glove		lrg		Gloves	300	112	500
2,201	Triumph Pro Helmet	black	sm		Helmets	100	78	150
2,202	Triumph Pro Helmet	white	sm		Helmets	100	80	0
2,203	Triumph Pro Helmet	black	med		Helmets	100	55	150
2,207	Triumph Vertigo Helmet	black	sm		Helmets	100	89	0
2,211	Triumph Vertigo Helmet	red	med		Helmets	100	92	150
2,215	Triumph Vertigo Helmet	white	lrg		Helmets	100	69	150
3,302	Guardian "U" Lock				Locks	75	22	125
3,304	Guardian ATB Lock				Locks	75	56	0
4,102	InFlux Crochet Glove		med		Gloves	300	198	500
4,103	InFlux Crochet Glove		lrg		Gloves	300	220	0
7,401	Vesper Comfort ATB Saddle			mens	Saddles	50	41	0

Database Filters

- Better but still not ideal as some products already have units on order. We need to filter only those products who will still fall below or equal the Reorder Level even with the pending orders.
- This can be solved by amending the formula.
- Task 4.1
- This is what should be returned.

Database Filters

- Going back to the Selection Expert, additional criteria can be added by clicking on the New tab.
- We could have chosen Stock Level less or equal to 100 and Units on Order equal 0.
- Try it and find out where is the problem?



Database Filters

- Sometimes, the user might want to be prompted to enter a value of its choice at run-time. For example, the user might want to set the Reorder Level and filter the records accordingly.
- Delete the previous selections made in Select Expert.
- We need to create a parameter field which will prompt us for a value.
- Right-click on the Parameter field in the Field Explorer tab and select New. Use a descriptive name like reorderminlevel.

Database Filters

- Choose number as Type and Dynamic as List of Values. For Prompt Text in Value Options: Enter “Minimum Reorder Level”
- Next open Select Expert and choose Purchases.ReorderLevel and use greater than or equal to.
- In the next drop down, select {?reorderminlevel} and click OK.
- You will next be prompted: to enter the value. (Try 50.)

Database Filters

Task 4b

- Create a report as faithfully as **this one**.
- Database is Northwind2008.mdb.
- Table is Orders
- Save your report as 4b.rpt