



| SUBJECT / GRADE | Computer Applications Technology Grade 12 | | | | | | | | | | | | | | | | | |
|----------------------------|--|--|-----------|------------|------------|-----------|--------|--------------|-----------|----------|------------|--------|------------|-----------|------------|------------|------------------|--|
| TERM / WEEK | Term 1 Week 5 | | | | | | | | | | | | | | | | | |
| TOPIC | Introduce reports in the database. | | | | | | | | | | | | | | | | | |
| AIM OF LESSON | Reinforce grade 11 content: Introduce basic reports and calculations, page and report headers and footers. | | | | | | | | | | | | | | | | | |
| RESOURCES | Paper based resources | Digital resources | | | | | | | | | | | | | | | | |
| | DBE textbook (grade 11 practical book: p 164-198) <i>(Use school issued textbook for the same content)</i> | <i>Links on the WCED ePortal or click here to get that Data File The E-RESOURCES below has the actual URL to the websites</i> | | | | | | | | | | | | | | | | |
| INTRODUCTION | <p>Did you know you have a very sophisticated database right inside your body? It's your amazing brain! In addition to maintaining your breathing, blood flow, body temperature, and other aspects that allow us to stay alive, it also constantly receives, sorts, and stores a vast amount of information, or data. This is also what databases do—it stores and organizes tons of data such as inventory, customer contacts, diet and exercise records, household expenses, etc.</p> <p>Databases are also used by municipalities, cellphone service providers, the government, shops, etc. When you visit a cellphone shop to enquire about a new phone or a problem on an existing contract, the assistant at the shop will ask for your cell number. By using your number as a criterion, all the info about you and your contracts with them will be extracted (pulled) from their database. This enquiry is called a query in a database and it is based on a specific criterion inserted into the database to display the correct information: your cellphone history, for example.</p> <p>When you visit a bank to open a new account the assistant will ask a lot of questions. The answers to these questions are inserted into their database. When you want to find out about the balance in your account or a specific payment, the assistant will once again ask for your personal information, like your ID number, to enable him/her to display only your information on the screen. In database terminology this is called a query.</p> | | | | | | | | | | | | | | | | | |
| CONCEPTS AND SKILLS | <p>The point of departure in a database is always the table. The table has a design view, in which the design of the table takes place according to specific data types and properties to make it as easy as possible for the person typing in the data, as well as for precision in searching for specific information. A table also has a datasheet view which shows the completed table, very much like a spreadsheet.</p> <p>Data is typed into the table after it has been designed. When data in the table is organised according to data types and properties it becomes information. Make sure that you also look at the datasheet view of a table after you have designed it to make sure the typed in data is displayed correctly.</p> | <table border="1"> <thead> <tr> <th>Data Type</th> </tr> </thead> <tbody> <tr><td>Short Text</td></tr> <tr><td>Short Text</td></tr> <tr><td>Long Text</td></tr> <tr><td>Number</td></tr> <tr><td>Large Number</td></tr> <tr><td>Date/Time</td></tr> <tr><td>Currency</td></tr> <tr><td>AutoNumber</td></tr> <tr><td>Yes/No</td></tr> <tr><td>OLE Object</td></tr> <tr><td>Hyperlink</td></tr> <tr><td>Attachment</td></tr> <tr><td>Calculated</td></tr> <tr><td>Lookup Wizard...</td></tr> </tbody> </table> | Data Type | Short Text | Short Text | Long Text | Number | Large Number | Date/Time | Currency | AutoNumber | Yes/No | OLE Object | Hyperlink | Attachment | Calculated | Lookup Wizard... | <p>CAN YOU?</p> <p>Write down the basic concepts and give a short explanation of each without referring to these notes or your text book.</p> |
| Data Type | | | | | | | | | | | | | | | | | | |
| Short Text | | | | | | | | | | | | | | | | | | |
| Short Text | | | | | | | | | | | | | | | | | | |
| Long Text | | | | | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | | | | | |
| Large Number | | | | | | | | | | | | | | | | | | |
| Date/Time | | | | | | | | | | | | | | | | | | |
| Currency | | | | | | | | | | | | | | | | | | |
| AutoNumber | | | | | | | | | | | | | | | | | | |
| Yes/No | | | | | | | | | | | | | | | | | | |
| OLE Object | | | | | | | | | | | | | | | | | | |
| Hyperlink | | | | | | | | | | | | | | | | | | |
| Attachment | | | | | | | | | | | | | | | | | | |
| Calculated | | | | | | | | | | | | | | | | | | |
| Lookup Wizard... | | | | | | | | | | | | | | | | | | |

It is possible to have many tables in a database. Sometimes these tables are linked to make it easier to extract information from all of them.

The **form** in a database is used to add more data to the table. A form usually enables the user to add one record at a time, displaying all the fields that are associated with that one record.

To print the information in a table or query a **report** is created, also according to specific criteria and properties.

As indicated previously, **queries** are performed to extract/ display specific information according to criteria. A query is created in design view. The criteria in the query help find and display the correct. When a query is run, the results are displayed in datasheet view. Make sure you always look at the datasheet view of the query to see that the results of the query are correct.

Calculations are also possible in a database. Calculations in the table can be performed in the design view by using the Calculated field data type. Calculations are also possible in the report.

Calculations are also done in queries by using the calculated field data type in design view. Calculations done in a query use the data in the table to do the calculation, for example, if VAT should be calculated, it is possible to add a new field in the query and do the calculation by using the correct field from the table. Queries using the Totals are very useful and easy if done correctly:



You have already been introduced to databases in grade 11. Watch the first video referred to above to refresh your knowledge.

Let us do some revision of the basic concepts:

Data - Bits or pieces of information.

Database – A collection of data organized and cross-referenced for quick retrieval.

Table – The main function of a table in a database is to organize and store data. Tables are arranged in rows and columns making it easy to search, extract data from, and reference information.

Related Table – A table that links or references information from another table, eliminating the need to duplicate data entry.

Record – A group or set of related data, usually displayed in a row.

Field – The location for a piece of data or information, usually displayed in column format.

Form – Used to enter or review data and is selected from one or more tables or queries.

Query – A process for pulling data from tables for informational or reporting purposes.

Report – Shows data for printing, display, or interaction and is selected from one or more tables

Refer to the terminology on the left, as well as to your text book to supply labels to each of the pictures on the left: write down the number next to the picture and supply a suitable label.

1

| | | | | |
|-----------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| Field: | AlbumName | Genre | ReleaseDate | ArtistName |
| Table: | Albums | Albums | Albums | Artists |
| Sort: | | | | |
| Show: | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Criteria: | | | | "Iron Maiden" |
| or: | | | | |

2 & 3

| AlbumId | AlbumName | ReleaseDate | ArtistId | Genre |
|---------|----------------------------|-------------|----------|-----------|
| 1 | PowerSlave | 9/3/1984 | | 3 Rock |
| 2 | Powerage | 5/5/1978 | | 1 Rock |
| 3 | Crimes of Passion | 8/5/1980 | | 5 Rock |
| 4 | BITCHES Brew | 3/30/1970 | | 4 Jazz |
| 5 | Kind of Blue | 8/17/1959 | | 4 Jazz |
| 6 | Couldn't Stand the Weather | 5/15/1984 | | 6 Blues |
| 7 | Somewhere In Time | 9/29/1986 | | 3 Rock |
| 8 | Piece of Mind | 5/16/1983 | | 3 Rock |
| 9 | Killers | 2/2/1981 | | 3 Rock |
| 10 | No Prayer for the Dying | 10/1/1990 | | 3 Rock |
| 11 | Texas Flood | 6/13/1983 | | 6 Blues |
| 12 | Snoopyfied | 9/28/2005 | | 9 Hip Hop |
| 13 | The Doggfather | 11/12/1996 | | 9 Hip Hop |
| 14 | Hail to the King | 8/23/2013 | | 7 Rock |
| 15 | Destiny Fulfilled | 11/10/2004 | | 8 Pop |
| 16 | Bush | 5/12/2015 | | 9 Hip Hop |
| 17 | The Book of Souls | 9/4/2015 | | 3 Rock |
| 18 | Coolaid | 7/1/2016 | | 9 Hip Hop |
| 19 | Black Ice | 10/17/2008 | | 1 Rock |
| 20 | Love Songs | 1/29/2013 | | 8 Pop |

4

Albums

Album Name:

Release Date:

Artist:

Genre:

Album Id: 23

page header

| Distributor Orders | | | | | 4/8/96 |
|--------------------|-----------|-------|-----|------------|--------|
| Distrib ID | Order No. | Price | Qty | Order Date | |
| 1 | 1001 | 23.50 | 8 | 1/29/96 | |
| | 1007 | 20.00 | 1 | 2/8/96 | |
| 2 | 1006 | 21.00 | 1 | 2/5/96 | |
| 3 | 1004 | 26.99 | 1 | 2/2/96 | |
| | 1008 | 24.00 | 7 | 2/8/96 | |
| 4 | 1005 | 25.00 | 2 | 2/2/96 | |
| 5 | 1002 | 24.00 | 8 | 1/29/96 | |
| | 1009 | 23.00 | 1 | 2/8/96 | |
| 6 | 1003 | 25.00 | 1 | 2/2/96 | |
| | 1010 | 23.50 | 10 | 2/8/96 | |

Page 1

detail data

page footer

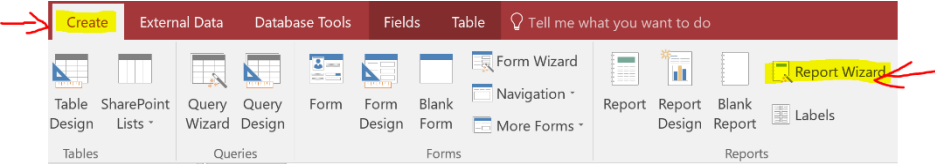
5

6

| InvestorName | InvestorSurname | InvestorCountry | InvestmentTerm | InvestmentDate |
|--------------|-----------------|-----------------|----------------|----------------|
| Jordan | Savage | Australia | Medium | 1966/09/27 |
| Zorita | House | Spain | Long | 1971/12/03 |
| Abdul | Cotton | South Africa | Short | 1976/12/19 |
| Callie | Pitts | Spain | Medium | 1966/12/10 |
| Marvin | Holt | India | Long | 1985/08/19 |
| Nathan | Hester | Argentina | Short | 1965/04/25 |
| Lani | Barlow | Spain | Medium | 1972/01/05 |
| Octavia | Richmond | China | Medium | 1975/04/11 |
| Shay | Mcbride | Switzerland | Short | 1960/05/03 |
| Denton | Mendoza | Belgium | Long | 1975/12/26 |
| Gil | Dyer | Switzerland | Long | 1988/07/22 |
| Buckminster | Prince | Greece | Short | 1972/06/10 |
| Catherine | Browning | France | Long | 1987/02/10 |
| Carl | Payne | United States | Medium | 1969/11/24 |
| Demetria | Collins | Greece | Medium | 1978/06/01 |
| Kellie | Morean | India | Medium | 1978/05/26 |

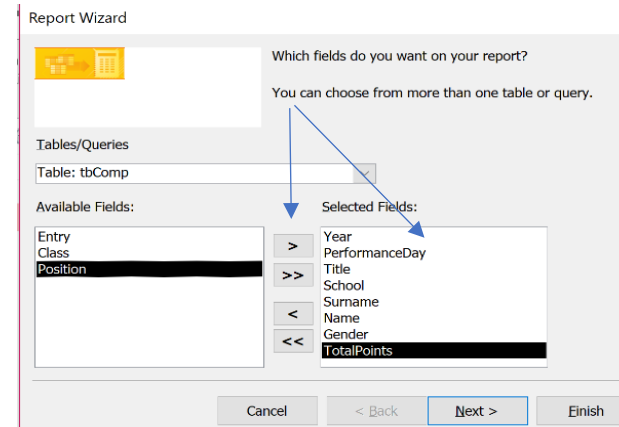
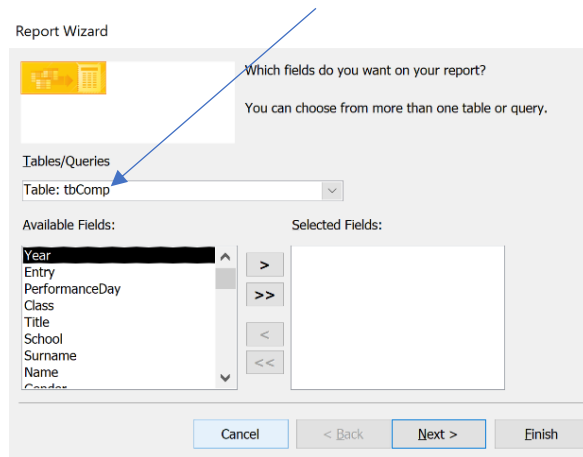
In the rest of this lesson we will concentrate on creating a basic report. Watch the videos indicated above as background. Make sure you know what the purpose of the report is.

On the ribbon open *Create* and then *Report Wizard*:

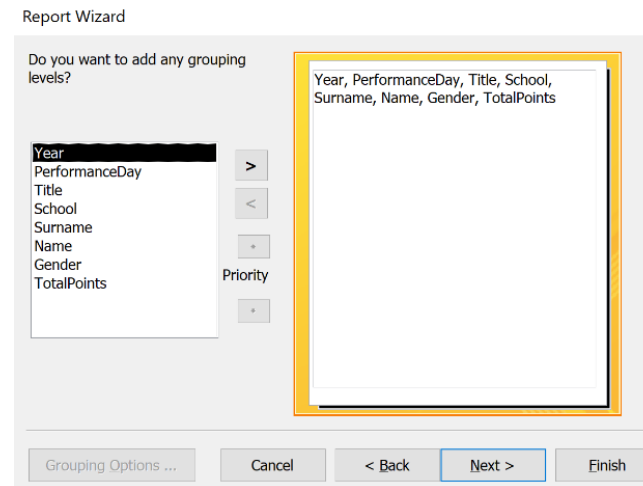
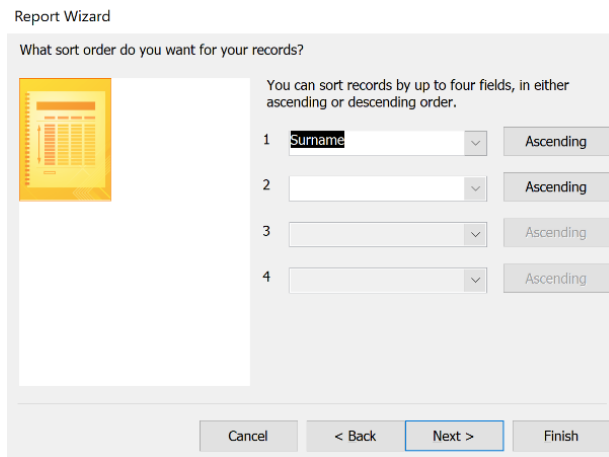


Explain to a friend what the function of each of these features in a database is.

Make sure that you have selected the correct table or query. Click *Next*. Choose the fields you want to add to your report by clicking on the > button.



If you want to sort a field or fields, choose the fields and choose the method of sorting. Grouping will be addressed in a next lesson. Finish the report.

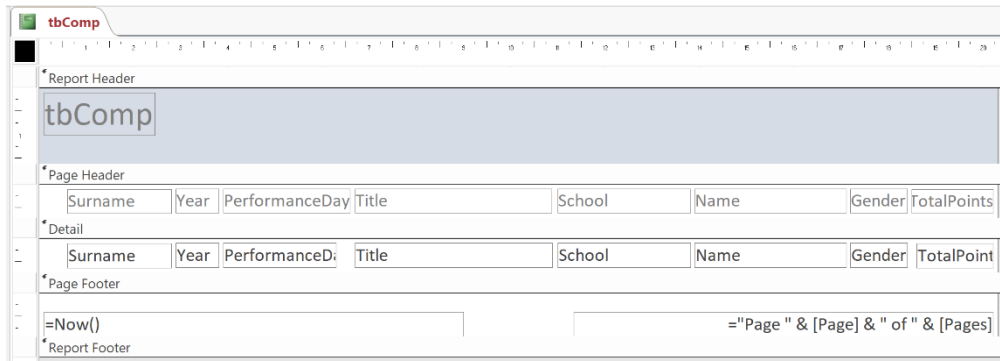


Explain what the function and purpose of a report in database is.

Do you have to use all the fields in a table to create a report? Explain your answer.

Which other feature in a database may be used to create a report, besides the table?

Completed report: Design View

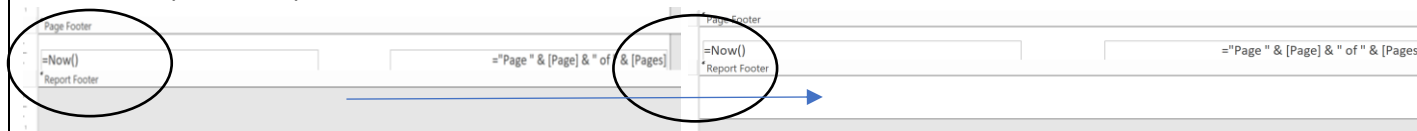


Completed report: Datasheet View

| Surname | Year | PerformanceDay | Title | School | Name | Gender | TotalPoints |
|-----------|------|----------------|---------------------------|-------------------------|----------|--------|-------------|
| Alencar | 2017 | 2017/02/28 | Honey, You And I | Acadêmicos de M Conrado | | Male | 179.4 |
| Álvarez | 2017 | 2017/03/03 | Honey, Tonight's The Nigh | Cubango | Marina | Female | 267.8 |
| Ambrósio | 2017 | 2017/03/03 | Bliss Of My Tomorrow | Dendê | Berenice | Female | 265 |
| Antunes | 2017 | 2017/03/01 | Goodbye Tonight | Rocinha | Luciana | Female | 263.5 |
| Ávila | 2017 | 2017/03/01 | Aquatic Dream | Arrastão | Carina | Female | 268.6 |
| Barreto | 2017 | 2017/02/27 | Summer Of A New Day | Chora na Rampa | Eliana | Female | 170.6 |
| Bernardes | 2017 | 2017/03/01 | She Will Try | São Clemente | Bianca | Female | 267.8 |

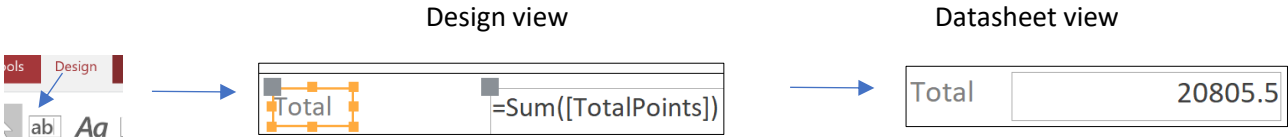


Always view the report in the datasheet as well, to make sure that the data displays correctly. If you need to make adjustments, do it in the design view.

It is also possible to do calculations in a report. If the report was not grouped, like the example in this lesson, the calculation is done in the report header or footer. The report footer is not visible by default and needs to be enabled. Move the cursor to just before the grey area at the bottom of the report until the cursor changes into a double-sided arrow. Now pull the report footer out, as indicated below.



Explain the difference between design view and datasheet view.

Make a list of other possible functions that can be used in a report.

| | | |
|---|--|---|
| | <p>Use the text box from the Design tab on the Ribbon to insert a calculation in the footer:</p> <div style="text-align: center;">  </div> <p>Take note of the round, as well as the square brackets in the calculation above. The fieldname which will be used in the calculation has to be 100% correct for the calculation to work.</p> | |
| <p>ACTIVITIES / ASSESSMENT</p> | <p>Practice your knowledge by doing the following activity:</p> <ul style="list-style-type: none"> • Open the database Data.accdb. • Create a report for each of the tables. Keep the default name that is assigned by the program for each report. • Insert the date in the header. • Open the <i>Tourists_Touriste</i> report you have created. • Insert a calculation in the footer to add the total number of tourists. • Insert a calculation below the previous calculation to count the number of countries. • Insert descriptive labels next to the calculations. <p>Create a report for the query <i>qry5_5</i>. Save this report as <i>High Income</i>.</p> | |
| <p>CONSOLIDATION</p> | <p>Create a database of your music collection or the movies you have watched on Netflix, or something similar. Perform queries according to a specific set of criteria, add records by using the form and create a report to print only specific records grouped together according to your choice.</p> | |
| <p>VALUES</p> | <p>Enabling learners to manage and manipulate data, preparing them for the skills needed for 4IR jobs.</p> | |
| <p>E-RESOURCES</p>  | <ul style="list-style-type: none"> • https://www.youtube.com/watch?v=eXiCza050ug • https://learn.mindset.africa/resources/information-technology/grade-11/database-design-concepts/databases/databases-everyday-life • https://learn.mindset.africa/resources/information-technology/grade-11/database-design-concepts/databases/database-reports • <i>Data File:</i> https://wcedportal.co.za/eresource/191901 |  |