Y8 Database Project File

Work your way through the questions and tasks in this file using the computer_science_database when instructed.

Introduction

Fill in the blanks using words from the list in red below:

A database is an organised collection of information. Organised information is often called data. In a database the data is organised into tables Each table is organised into fields Into which the different types of information are put.

Example: A List of Contacts is a database.

Fields:	First name	Surname	Mobile number	Home number	Work number	Address	e-mail
Example Data:	Lisa	Simpson	074867256878	01279 977907	-	Springfield	lisa@thesimpsons

The information for the entries in the table are called forms and these are made up of the **data items** entered into each field for that record. Database records allows the user to access and update the data in the database.

Part one – Using a database

Carry out the following tasks using your copy of the Computer Science Database. Open the database and click on Enable Content (there may be confirmation screens to agree to open the document as a trusted document first). Try to answer each question.
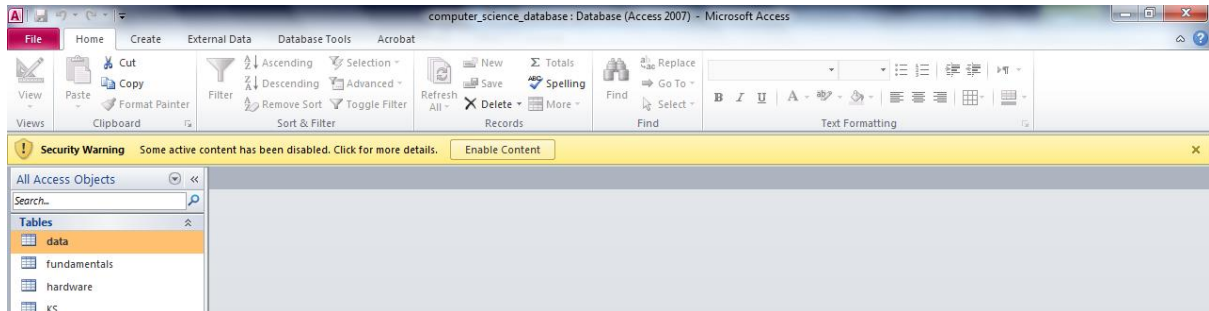

1) **Viewing records and fields of a table**
   a. Open the **data** table by double clicking "data" from the list of tables. How many records are there in the data table?   Answer: 20
   b. One of the data items in the table is a byte, another is a kilobyte.
      i. How many bits are there in a byte?   Answer: 8
      ii. How many bytes are there in a kilobyte?   Answer: 1024
   c. **Data item** is that name of the first field in this table what is the name of the fifth field?   Answer:Web_link
   d. Use the **web link** on the kilobyte record to take you to a site discussing kilobytes, megabytes etc. What is the alternative answer to b(ii)?   Answer:1000

2) Viewing field properties

a. Open the **data** table in design view. This can be done by a right click on "data" from the list of tables and selecting design view. Here you can see the field names **and** data types. How many of the fields have number as their data type?   Answer:3

Tables	☆
⊞ data	
⊞ ☐ Open	
⊞ ☑ Design View	
⊞	

b. Select the **data_item** field. The properties panel underneath shows the properties of the data_item field. What is the field size of the "data item" field?

Answer: 50

c. The field size of the description field has not been changed from the default value which means the value that is put in automatically by the database software. Click on the **description** field. What is the default field size?

Answer: 255

d. Open the **fundamentals** table and read through the entries. Answer these questions by using the information from the **description** field of the table (you can copy and paste when appropriate):

   i. What is software? The programs and applications than can be executed on a computer system

   ii. What is programming? The creation of software by writing computer code or instructions

   iii. Computers are often described as devices that perform Input – Process – Output operations. What is inputted, processed and outputted? Data that is put in then processed then put out

   iv. What is a peripheral device? A device that can be connected to a computer but is not an essential part of the computer

   v. What is memory? The part of a computer system that data can be stored on and retrieved quickly

   vi. What is the difference between primary and secondary storage? Secondary is for permanent storage and primary is when the data is being executed.

   vii. What is "The communication mechanism between one object and another"? interference.
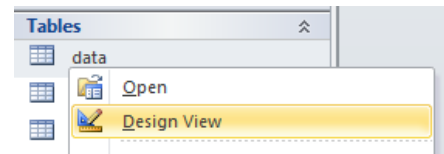
3) Lookup lists, Filters, Adding records

a. Open the **hardware** table in design view (see fig 3a below). Select the **use** field as above. Click on the lookup tab. What are the uses that are suggested in the row

fig 3a

hardware	
Field Name	**Data Type**
🔑 Device	Text
Description	Text
Use	Text
Web link	Hyperlink
Typical storage	Number
Units of storage	Text
Abbreviation	Text
Key Stage	Number

Hardware table in design view, use field selected, lookup tab in properties window

General Lookup	
Field Size	255
Format	
Input Mask	

source? Answer:
Choose an item.

b. You are goiung to use a filter to only display output devices in the **hardware** table. Open the table in datasheet view (open it normally). Select the **use** field then select
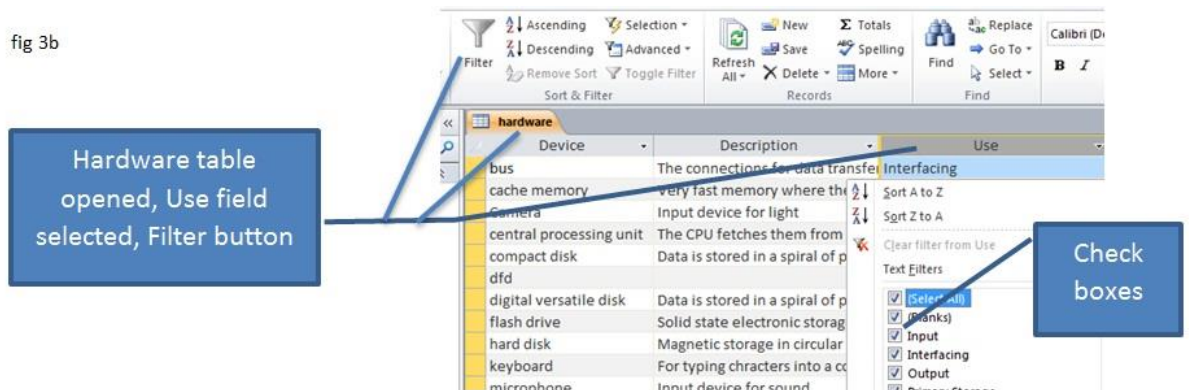
fig 3b

Filter to get a screen like the one shown here (fig 3b). In the check boxes unselect "select all" and select "Output" then OK. What are the three output devices displayed?   Answer: Choose an item.

c. There is at least one output device missing. Enter a new record on the fourth row for the output device a computer uses to output sound. Use this link if you are stuck: http://library.thinkquest.org/08aug/01795/Website/output_devices.html insert a screen clipping of the four output devices now in your filtered list below:

4) **Sorting**

Open the **data** table again this time you are going to order it first by number of bits descending (select the **number_of_bits** field then click the Descending button and then by number of bytes Descending. The resulting list should be largest to smallest amounts of data. Select the **data item, number of bits and number of bytes fields for all the records that have numbers in these columns**. Paste the contents of table below:

5) **Forms.**   Opening a table normally opens it in datasheet view where all the records are displayed at once. Forms can be created to view the data one record at a time. This prevents mistakes being made and is useful if you are showing information to a customer because other peoples information will not be displayed alongside it

a. Which tables have had a forms created for them?   Answer: Choose an item.

b. Open the **programming** form and find out what a while loop does. Paste the action field contents as the answer to this task.

A while loop…….

c. Open the **software** form and find out what an operating system does.

An operating system….

d. Explain the advantage of creating a form

A form is sometimes better than opening a table in datasheet view because……

Part two – Creating a table

The table on databases is missing from the Computer Science Database. You are going to

- create the databases table,
- create a form for adding the first few records
- import the remainder of the records from the database_terms file

1. Create the table using table design. Select Create and Table Design. Enter the field name and data types as shown on the right.

2. When you have done this close the table choose yes for saving it and call the new table database. Only a small amount of data is going into the table so a primary key is not necessary.

3. If you want select the database table then create form and the software will create a form for you. Close it and save it.

4. Enter the first two records into your table by using the form or opening the table.
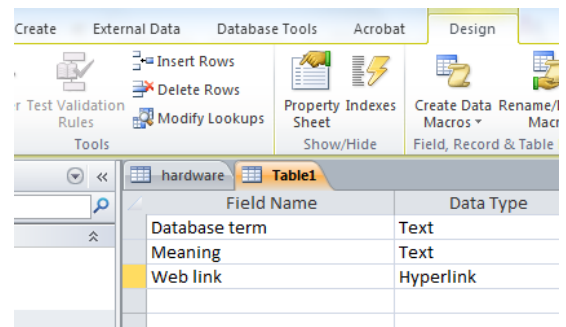
Database	A structured collection of information	http://en.wikipedia.org/wiki/Database
Table	A set of similar data in a database	http://searchsoa.techtarget.com/definition/table

It is a bit boring to enter data by hand. You have a pre-made text file with the rest of the data for the table. Close the table or form and then right click the database table selecting import and then text file. On the following screen you need to make changes:
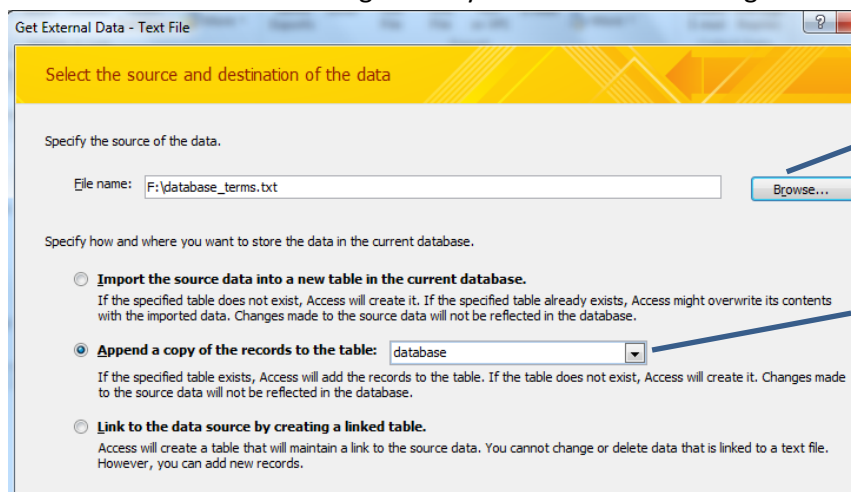
Browse to your copy of database_terms.txt

Choose the Append option and make sure it is the database table that is being appended to

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On the screen that follow do not change anything, have a look at them if you want but just click Next or OK or Finish. If there are errors try and work out what has gone wrong.