

CHAPTER TEST ANSWERS**Chapter 8 Data management****Section A****Multiple-choice questions**

- 1 A database query is used to:
B find certain records in a database.
- 2 Databases are particularly suited to:
A storing information.
- 3 A typical example of metadata is:
D an album cover image inserted into an MP3 file.
- 4 Data redundancy refers to:
D unnecessary copies of the same data.
- 5 One disadvantage of large electronic databases is that:
B an accident could destroy all the data.
- 6 One efficiency benefit of electronic databases is that:
C they can find data quickly.
- 7 A record in a database consists of:
A multiple fields of various data types.
- 8 In a database record, a field can contain:
D one piece of raw data of a pre-specified data type.
- 9 To store the data 'Mrs Maria Johnson of Fairfield, 3078', how many fields would you need?
D 5
- 10 To enter data into a database you would create a:
B form.
- 11 A macro in a database is used to:
D automate a series of instructions.
- 12 A field's data type refers to:
A the sort of data the field is able to contain.
- 13 The most effective way to ensure a user enters a valid date of birth is to:
C use a calendar control.

14 Good naming of objects in databases includes:

D making names short but readable and meaningful.

15 An important design tool for planning the appearance of screen or printed output is:

B a mock-up.

Section B

Short-answer questions

1 Benito is creating a database to keep track of the customers at his model railroad shop. Benito refers to his paper-based sales records to locate the data to enter into his electronic database. He creates two fields and fills in the data of his first customer.

Field	Sample data
Name	Jack Puccini
Address	34 Garibaldi St, Boort, 3537

Benito's friend, Mao, comes by and looks at the database. 'Hmmm, that's not a good idea.' he says, and offers some advice.

What advice might Mao have given Benito, and how would it improve the database?

Answer: The customer name should be in two separate fields for the given name and family name (1 mark). This would allow customers to be sorted by family name rather than their first names (1 mark). The address should be divided into street address (34 Garibaldi St), suburb or town (Boort) and postcode (3537) (1 mark). In this way, each piece of data can be accessed, sorted on, searched by and reported on individually (1 mark). For example, searching by postcode, or positioning the postcode in a particular position in a report, independently of the rest of the address. This offers much more powerful searching, sorting and reporting capabilities (1 mark).

2 John Hillier has a database of international companies with which his company does business. A sample of the raw data looks like this:

Company	NumStaff	Country	CompanyID
Faucibus Leo Institute	66	Equatorial Guinea	G1Y 3H4
Vitae Company	59	Wallis and Futuna	J8R 0X2
Libero Morbi Accumsan Institute	36	Guatemala	A5J 1K4
Amet Massa Quisque Limited	69	Libya	B1M 9M2
Accumsan Convallis Associates	74	Burundi	G7F 4U8
Tortor Corp.	41	Grenada	D9N 2J9
Risus Industries	30	French Southern Territories	C7Y 3Z0
Massa Limited	33	Anguilla	M1Z 1V4
Urna Vivamus Corporation	74	Jordan	V4N 0R6
Fusce Feugiat Lorem Co.	54	Germany	K5I 8Q9
Id Ante Industries	83	Mexico	G8N 2M7
Scelerisque Scelerisque Dui PC	37	Uruguay	I1J 9B3
Lacus PC	29	France	T1R 7A8
Tellus Justo Consulting	12	Northern Mariana Islands	B2L 2Q0

Company	NumStaff	Country	CompanyID
Eu Odio Tristique Inc	59	Trinidad and Tobago	K1K 1O3
Nisi A Odio PC	91	Tajikistan	U1O 5S0
Faucibus Orci Corporation	12	Saint Martin	T0Y 5V7
Iaculis Quis Limited	34	Saint Barthélemy	U3G 0F4
Felis Purus Limited	88	Uzbekistan	G7Q 6I0
Nulla Institute	48	Virgin Islands, United States	R8X 9L9
Tellus Foundation	88	Cocos (Keeling) Islands	A4R 1U5
In Molestie Company	71	Guyana	Q7X 0A2
A Facilisis Non Foundation	78	Åland Islands	N6A 0E3
Suspendisse Industries	68	Tanzania	S1V 0F0
Lorem Donec Corp.	45	Saudi Arabia	A1B 5M3

John creates a query that creates a list that looks like this:

Company	NumStaff	Country
Molestie Company	33	Albania
Malesuada Ut Industries	39	Angola
Massa Limited	33	Anguilla
Adipiscing PC	38	Aruba
Dui Fusce Aliquam Institute	36	Djibouti
Risus Industries	30	French Southern Territories
Tempus Associates	31	Greece
Morbi Tristique Ltd	39	Greenland
Libero Morbi Accumsan Institute	36	Guatemala
Penatibus Limited	39	Kiribati
Orci Corporation	30	Lithuania
Dapibus Quam Quis LLC	38	Mauritius
Duis Gravida Corporation	36	Poland
Phasellus Ornare LLP	36	Reunion
Aliquet Company	36	Russian Federation
Iaculis Quis Limited	34	Saint Barthélemy
Senectus Foundation	33	South Sudan
Scelerisque Scelerisque Dui PC	37	Uruguay

Fill in the necessary cells in his query, shown below, that would generate the output shown above.

- In the SORT row, write 'Ascending' or 'Descending' where appropriate.
- Tick the appropriate fields in the SHOW row.
- In the CRITERIA row, insert relevant selection criteria.

Answer: Give 2 marks for each row that is completely correct. Deduct marks where appropriate.

FIELD	Company	NumStaff	Country	CompanyID
SORT			Ascending	
SHOW	✓	✓	✓	
CRITERIA		>=30 and <=39 Or Between 30 and 39.		

- 3 Scott, a database engineer, has been asked to inspect a database that has been causing trouble to Star Enterprises. In the database, he finds this:

```

1 BEGIN
2     OPEN Report 'rptOverduePayments'
3     SELECT Where Debt >= 0
4     SORT Ascending by FamilyName
5     PRINT Report to default printer
6     CLOSE Report
7 END
  
```

- a What is the name of this type of database object?

Answer: A macro

- b Describe what it is probably intended to achieve.

Answer:

- Find records of people who are in debt (1 mark).
 - Sort the list by surname (1 mark).
 - Print the list (1 mark).
- c Scott notices a logical error in it. Identify the error and how it can be fixed.

Answer: Error – it will also report people who have no debt. (1 mark)

To fix it – change Debt >= 0 to Debt > 0 (1 mark)

(2 marks)

- 4 Mandy's Epic Swimming Club has a database that manages its members. Here is part of the database's table.

- a What does the validation rule applied to the swmPostCode field tell you about club membership rules?

Answer: Members must live in Victoria.

(1 mark)

- b What would happen if a postcode of 4444 were entered into this database?

Answer: The value would not be accepted and the message 'Postcode must be between 3000 and 3999 inclusive' would be displayed.

(1 mark)

- c If no postcode were entered for a member, would the database do anything? Explain why.

Answer: No, because the field is not 'required'.

(2 marks)

5 Lee manages a top-secret database of very sensitive information. The database is stored on a file server in a secured, secret location in Paris.

a Identify one potential accidental threat to the database.

Answer: Accidental deletion of data by an operator, or incorrect editing of data

b Identify one potential deliberate threat to the database.

Answer: Responses will vary, but any of the following responses are acceptable.

- Hacker attack
- Malware deleting or stealing data
- Ransomware
- Distributed denial of service (DDoS) attack

c Describe one method of preventing the accidental threat you identified above.

Answer: Responses will vary. Possible responses include training database operators to use the database correctly, using an access hierarchy to prevent users having complete access to all data, and backing up.

d Describe one method of preventing the deliberate threat you identified above.

Answer: Responses will vary, but any of the following responses are acceptable.

- Firewall
- Malware scanners
- Network monitoring software
- Data encryption