

Original practice questions · 33 marks · about 50 minutes · covers A3.1.1

1 Total: 6 marks

2

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Before the club used a database, each booking was written on a paper form that also carried the member's full name, email address and join date.

- (a) Explain how storing member details in a separate table reduces data duplication. [3]

- (b) Outline what is meant by data integrity. [2]

- (c) State **one** way the database helps keep the club's data consistent. [1]

3

Total: 6 marks

Two members open the booking page at the same moment and both try to reserve court 3 for 11:00 on the same day.

- (a) Explain how concurrency control prevents both bookings from being accepted. [3]

- (b) Describe why reliable transaction processing matters when a booking is also charged to a member's account. [3]

4

Total: 5 marks

The club employs a treasurer, several coaches and a receptionist, who each need different access to the data.

- (a) Describe how a relational database controls which of these staff can see which data. [3]

- (b) Outline **one** advantage of retrieving the club's data using a query language rather than reading through the tables by hand. [2]

5

Total: 5 marks

The club now wants to record, for each member, a free-text coaching report and a short video of their serve.

- (a) Explain why the rigid schema of a relational database makes this change awkward. [3]

- (b) Outline **one** difficulty relational databases have in handling unstructured data such as the video. [2]

The club merges with a national chain. The database must now hold several hundred million bookings and serve users in many countries at once.

Discuss whether a relational database remains a suitable choice at this scale.

[5]

END OF QUESTIONS