

# OCR Computer Science A Level

## 1.3.2 Databases

Flashcards



# What is a relational database?



# What is a Relational Database?

A database which recognises the difference between entities and uses different tables for each entity.



# What is an entity?



# What is an entity?

An item of interest about which information is stored.



# What is a flat file?



## What is a flat file?

A database that consists of a single file, usually about one entity.



# What is a primary key?





# What is a primary key?

A unique identifier for each record in a table.



# What is a foreign key?



# What is a foreign key?

The attribute which links two tables together.



# What is a secondary key?



# What is a secondary key?

An index other than the primary key used to search and sort through the database with more convenience and speed.



# What is normalisation?



# What is normalisation?

This is the process of coming up with the best layout for a relational database.



What does normalisation try to accomplish?





# What does normalisation try to accomplish?

- No redundancy (unnecessary duplicates)
- Consistent data throughout linked tables.
- Records can be added and removed without issues.
- Complex queries can be carried out.



# What is an index?



# What is an index?

An index is a data structure used to look up and access data in database quickly.



Is the primary key automatically indexed?



# Is the primary key automatically indexed?

Yes



# What does capturing data mean?



# What does capturing data mean?

Capturing data is the process of getting the information you wish to use.



What method do banks use to capture data from cheques?





What method do banks use to capture data from cheques?

They use Magnetic Ink Character Recognition (MICR) to get all the details apart from the amount which must be entered manually.



# What does selecting data mean?



# What does selecting data mean?

Selecting data is the process of reducing excess information to obtain only the data you require.



# What does managing the data mean?



# What does managing the data mean?

Managing the data means to manipulate the information in any type of way such as through sorting through it or selecting certain parts using SQL.



What is the most common language used to manipulate data in databases?



What is the most common language used to manipulate data in databases

SQL



What are the requirements to be in first normal form?





What are the requirements to be in first normal form?

To be in first normal form there must be no attribute that contains more than a single value in a cell.



What are the requirements to be in  
second normal form?



What are the requirements to be in second normal form?

- The database is in first normal form,
- There are no partial dependencies (no composite keys)



What are the requirements to be in third normal form?



What are the requirements to be in third normal form?

- The database is in second normal form.
- There are no non-key dependencies



# What does SQL stand for?



What does SQL stand for?

Structured Query Language



# What is SQL?





# What is SQL?

A declarative language used to manipulate databases.



# What is referential integrity?



## What is referential integrity?

Referential integrity is the process of ensuring consistency as it makes sure that information is not removed if it is required elsewhere in a linked database.



What is a transaction defined as?



# What is a transaction defined as?

A transaction is a single operation executed on data.



# What does ACID stand for?



What does ACID stand for?

Atomicity, Consistency, Isolation,  
Durability



# What does Atomicity (in ACID) mean?





What does Atomicity (in ACID) mean?

A transaction must be processed in its entirety or not at all.



# What does consistency (in ACID) mean?



What does consistency (in ACID) mean?

A transaction must maintain referential integrity rules between linked tables.



# What does isolation (in ACID) mean?



What does isolation (in ACID) mean?

Simultaneous execution of transactions should lead to the same result as if they were executed one after the other.



# What does durability (in ACID) mean?



What does durability (in ACID) mean?

Once a transaction has been executed it will remain so regardless of the circumstances



# What is record locking?





# What is record locking?

Record locking is the process of preventing simultaneous access to a record.



What is the name of an issue that can arise as a result of record locking?



What is the name of an issue that can arise as a result of record locking?

Deadlock



# What is redundancy?



# What is redundancy?

The process of creating more than one copy of data in a physically different location.

