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## Knowledge check

3 minutes

## Check your knowledge

- 1. Why should an app back-off from trying to read from a database that is responding too slowly?
  - The database could be under heavy load, so backing-off could give it time to recover.

If a database is responding, but taking longer than normal, it could be under excessive load.

- The database server is being upgraded, so retrying will cause the upgrade to fail.
- Backing-off means that the app can retry the operation quicker, to get a faster response.
- 2. Why is it important that operations are idempotent if they're being retried?
  - Retrying the operation leads to data being incremented the number of times the operation is processed successfully.
  - If the operation is going to be retried, and previous operations have all failed, the data will be incorrect.
  - If the operation is going to be retried, and previous operations have been successful, the data won't be duplicated or corrupted.

Idempotent operations are important to ensure values aren't corrupted if they are applied multiple times.

- 3. What's the main difference between permanent and terminal errors?
  - Permanent errors need to be handled and then quit the app. Terminal errors automatically quit the app.
  - Permanent errors can be handled by using data from elsewhere.

    Terminal errors mean the app can't continue and should quit.

With permanent errors, the app can't expect a response from the service, and it should try to get the data from another service or a local cache. An app can no longer do anything useful when it receives a terminal error and should therefore quit.

Permanent errors are unrecoverable, log the data and quit. Terminal errors shouldn't log data and quit.

Next unit: Detect transient errors in code

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