



University  
of Glasgow

# Data Storage and Retrieval

## NoSQL: Example Scenarios

Dr. Graham McDonald

[Graham.McDonald@glasgow.ac.uk](mailto:Graham.McDonald@glasgow.ac.uk)



# Example 1

- Storing session data for a web application. Sessions are stored when a user logs in and are active until the session ends (either through the user logging out or a session timeout). Each user session has a unique ID and may include a user profile, personalised themes, targeted promotions, discounts and other messages. Sessions are only queried by their ID.
- The database must be able to handle the scaling of large amounts of data and extremely high volumes of state changes while servicing millions of simultaneous users through distributed processing and storage.



## Example 2

- An application that monitors and records data from an ecosystem of Internet of Things (IOT) applications.
- The application records the attributes of the components in the system at a particular point in time, such as sensor data, temperature monitoring and transactional data.
- The attributes that are recorded differs per component.



## Example 3

- An application to digitise the encyclopaedia Britannica (a set of books giving information on many different subjects) to create an interactive experience with the aim of providing functionalities based on complex traversal algorithms to help users to explore and discover latent, or hidden, patterns in the data that they would not likely be able to discover just by reading the books of the encyclopaedia.