

Redis collections summary



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Complex data types summary

- ▶ Hashes
 - are collections of field-value pairs, useful to represent objects
- ▶ Lists
 - contain ordered values that can act both as queues (first value in, first value out) and as stacks (last value in, first value out)
- ▶ Sets
 - are unordered collections with no duplicate values
- ▶ Sorted Sets
 - are ordered like lists and are unique like sets
 - have field-value pairs like hashes, but their fields are numeric scores that denote the order of the values

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Use cases for Hashes

- ▶ User Profiles:
 - Many web applications use Redis Hashes for their user profiles, as they can use a single hash for all the user fields, such as name, surname, email, password, etc.
- ▶ User Posts:
 - Social platforms like Instagram leverage Redis Hashes to map all the archived user photos or posts back to a single user.
 - The hashing mechanism allows them to look up and return values very quickly, fit the data in memory, and leverage data persistence in the event one of their servers dies.
- ▶ Storing Multi-Tenant Metrics:
 - Multi-tenant applications can leverage Redis hashes to record and store their product and sales metrics in a way that guarantees solid separation between each tenant, as hashes can be encoded efficiently in a very small memory space.

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Use cases for Lists

- ▶ Social Networking Sites:
 - Social platforms like Twitter use Redis Lists to populate their timelines or homepage feeds, and can customize the top of their feeds with trending tweets or stories.
- ▶ RSS Feeds:
 - Create news feeds from custom sources where you can pull the latest updates and allow interested followers to subscribe to your RSS feed.
- ▶ Leader-boards:
 - Forums like Reddit and other voting platforms leverage Redis Lists to add articles to the leader-board and sort by most voted entries.

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Use cases for Sets

- ▶ Sets are usually used when you want to perform an audit and see relationships between various variables.
- ▶ Analysing ecommerce sales:
 - Many online stores use Redis Sets to analyse customer behaviour, such as searches or purchases for a specific product category or subcategory.
 - For example, an online bookstore owner can find out how many customers purchased medical books in Psychology.
- ▶ IP Address Tracking:
 - Redis Sets are a great tool for developers who want to analyse all of the IP addresses that visited a specific website page or blog post, and to be able to ignore all of the duplicates for unique visitors with their SADD function.
- ▶ Inappropriate Content Filtering:
 - For any app that collects user input, it's a good idea to implement content filtering for inappropriate words, and you can do this with Redis Sets by adding words you'd like to filter to a SET key and the SADD command.

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Use cases for Sorted Sets

- ▶ Q&A Platforms:
 - Many Q&A platforms like Stack Overflow and Quora use Redis Sorted Sets to rank the highest voted answers for each proposed question to ensure the best quality content is listed at the top of the page.
- ▶ Gaming App Scoreboards:
 - Online gaming apps leverage Redis Sorted Sets to maintain their high score lists, as scores can be repeated, but the strings which contain the unique user details cannot.
- ▶ Task Scheduling Service:
 - Redis Sorted Sets are a great tool for a task scheduling service, as you can associate a score to rank the priority of a task in your queue.
- ▶ Geo Hashing:
 - The Redis geo indexing API uses a Sorted Set for the Geo Hash technique which allows you to index locations based on latitude and longitude, turning multi dimensional data into linear data.

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