Google code

Google App Engine

Queries and Indexes

Overview

A query retrieves datastore entities that meet a specified set of conditions. The query specifies an entity kind, zero or more conditions based on entity property values (sometimes called "filters"), and zero or more sort order descriptions. When the query is executed, it fetches all entities of the given kind that meet all of the given conditions, sorted in the order described.

The Master/Slave Datastore and the High Replication Datastore have different guarantees when it comes to query consistency. By default:

- The Master/Slave datastore is strongly consistent for all queries.
- The High Replication datastore is strongly consistent by default for queries within an entity group. With the High Replication Datastore, non-ancestor queries are always eventually consistent.

For more information, see Setting the Read Policy and Datastore Call Deadline.

The low-level Java API provides a Query class for constructing queries and a PreparedQuery class for fetching and returning entities from the datastore.

```
import com.google.appengine.api.datastore.DatastoreService;
import com.google.appengine.api.datastore.DatastoreServiceFactory;
import com.google.appengine.api.datastore.Entity;
import com.google.appengine.api.datastore.PreparedQuery;
import com.google.appengine.api.datastore.Query;

// ...
// Get the Datastore Service
DatastoreService datastore = DatastoreServiceFactory.getDatastoreService();

// The Query interface assembles a query
Query q = new Query("Person")
q.addFilter("lastName", Query.FilterOperator.EQUAL, lastNameParam);
q.addFilter("height", Query.FilterOperator.LESS_THAN, maxHeightParam);

// PreparedQuery contains the methods for fetching query results
// from the datastore
PreparedQuery pq = datastore.prepare(q);

for (Entity result : pq.asIterable()) {
  String firstName = (String) result.getProperty("firstName");
  String lastName = (String) result.getProperty("lastName");
  Long height = (Long) result.getProperty("height");
  System.out.println(lastName + " " + firstName + ", " + height.toString() + "
inches tall");
}
```

A filter includes a property name, a comparison operator, and a value. An entity passes the filter if it has a property of the given name and its value compares to the given filter value as described by the operator. The entity is a result for the query if it passes all of the query's filters.

The filter operator can be any of the following:

- `Query.FilterOperator.LESS_THAN`
- `Query.FilterOperator.LESS_THAN_OR_EQUAL`