GQL cheatsheet

sones

GQL

The sones Graph Query Language (GQL) allows you to create, modify, administrate and query a graph (database).

CREATE TYPE Create a user-defined datatype

```
CREATE TYPE Identifier [EXTENDS Identifier] [ATTRIBUTES(AttrIdentifier)]
[BACKWARDEDGES(BackwardEdge [,BackwardEdge])] [UNIQUE(Identifier
[,Identifier])] [INDICES(IndexOptOnCreateType)]
```

CREATE TYPES Create multiple user-defined datatypes at once

```
CREATE TYPES bulk_type_list_member [,bulk_type_list_member]
```

CREATE INDEX Creates an index on an user-defined type

```
CREATE [UNIQUE] INDEX identifier [EDITION identifier] ON identifier
(index_attribute_list) [INDEXTYPE Identifier]
```

ALTER TYPE Manipulates a user-defined datatype

```
ALTER TYPE ADD ATTRIBUTES (attr_definition [,attr_definition] ) |
ALTER TYPE DROP ATTRIBUTES (Identifier [,Identifier]) |
ALTER TYPE ADD BACKWARDEDGES (BackwardEdge [,BackwardEdge]) |
ALTER TYPE DROP BACKWARDEDGES (Identifier [,Identifier]) |
ALTER TYPE RENAME ATTRIBUTE Identifier TO Identifier |
ALTER TYPE UNIQUE (Identifier [,Identifier]) |
ALTER TYPE DROP UNIQUE
```

DROP TYPE Deletes an user-defined datatype

```
DROP TYPE Identifier
```

DROP INDEX Deletes an index from an user-defined datatype

```
FROM id DROP INDEX Identifier [EDITION Identifier]
```

TRUNCATE Removes all records from a user-defined datatype

```
TRUNCATE Identifier
```

INSERT Insert an object into a graph

```
INSERT INTO Identifier insert_expression
```

SELECT Retrieve objects or their data from a graph

```
FROM Identifier alias [,Identifier Alias] SELECT * | selection_list
[WHERE where_condition] [GROUP BY group_expr] [ORDER BY order_expr]
[LIMIT  limit_expr] [OFFSET offset_expr] [DEPTH  depth_expr]
```

UPDATE Updates an object within a graph

```
UPDATE Identifier SET (update_attr_element [,update_attr_element]) WHE-
RE_Condition
```

DELETE Deletes data from an object with a graph

```
FROM Identifier DELETE [id] WHERE_Condition
```

DESCRIBE Get information on items within the database

```
DESCRIBE INDEX Identifier | DESCRIBE EDGE Identifier | DESCRIBE OBJECT Identi-
fier | DESCRIBE FUNCTION Identifier | DESCRIBE AGGREGATE Identifier | DESCRIBE
SETTING Identifier | DESCRIBE TYPES
```

SETTING Set, get or remove a setting within the database

```
SETTING DB Setting_Expression(=SET/GET/DEFAULT/REMOVE Value) | SETTING SESSION
Setting_Expression | TYPE Identifier [,Identifier] Setting_Expression | ATTRI-
BUTE Identifier [,Identifier] Setting_Expression
```

BUILT-IN Datatypes (case sensitive)

```
Integer, UnsignedInteger, Double, String, Boolean, DateTime, BackwardEdge,
List<Datatype>
```

Aggregates

```
COUNT | AVG | MIN | MAX | SUM
```

Functions

```
CONCAT | TOUPPER | MAXWEIGHT | SUBSTRING | TOP | CURRENTDATE
```

SOAP

The SOAP API can be used to run GQL queries. Data is returned as a CustomerQueryResult object containing subselected objects.

The WSDL of the SOAP API is available by adding **?WSDL** to the WebService URL.

Available methods:

method	description
Query(String GQLQuery)	runs a query and returns results
GetLastLogLines()	returns the last log lines
DBTypeInfo(String TypeName)	returns all information about a type (like DESCRIBE TYPE query)

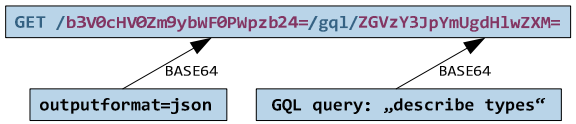
REST

The REST API can be used to run GQL queries. Data is returned in a specified format (xml / json / text) and BASE64 encoded.

Running a query:

```
GET /{mySettings}/gql/{myCommand}
```

mySettings contains: outputformat={text/json/xml}. myCommand contains the GQL query string. Both are BASE64 encoded.



Accessing the log:

```
GET /Logfile
```

Login and Access

sones graphDB can be accessed through a number of different interfaces like SOAP WebService, REST - even a WebShell running inside every browser is available.

WebShell

sones graphDB WebShell is a unix-like shell in a web browser allowing the user to interact with an instance of a sones graphDB. It is based on well-known technologies and libraries like HTML, JavaScript, JQuery and our **REST API**.

Anyone can gain access to a personalized instance by logging on to http://www.sones.com.

useful commands:

command	parameters	description
help	n/a	displays help text
clear	n/a	clears the screen
format	xml | json | text	by default results are displays as xml. Output format can be switched to JSON or plain-text

sample xml output:

```
<QueryResult>
  <Query ResultType="Successful">FROM User u SELECT *</Query>
  <DBObject>
    <Attribute Name="Username" Type="String">User1</Attribute>
    <Attribute Name="Age" Type="Int64">25</Attribute>
  </DBObject>
  <Duration resolution="ms">9</Duration>
</QueryResult>
```

sample json output:

```
{
  "Query": "FROM User u SELECT *",
  "ResultType": "Successful",
  "Errors": [],
  "QueryResult":
  [
   {
        "Username": "User1",
        "Age": "25"
   }
  ],
  "Duration": "9"
}
```