Graql Cheatsheet

This cheatsheet is a quick reference guide for those already familiar with Graql. For further information and additional documentation, please see the Graql section on our developer portal at [tinyurl.com/graqldocs](https://grakn.ai/pages/documentation/graql/graql-overview.html).

## Variables

Variables start with $ followed by alphanumeric characters.

## Queries

## match

A match query will search the graph for any subgraphs that match the given pattern.

**match [pattern; ...] [modifiers]**

match $x isa person;

# Match several patterns together

match $x isa person, has firstname "John";

**Modifiers**

# Select particular variables from the query

match $x isa person, has firstname $f, has surname $s;

select $f, $s;

# Skip some results & limit the number returned

match $x isa person, has identifier $id;

limit 10; offset 5;

# De-duplicate the results of a query

match $x isa person, has firstname $y; select $y;

distinct;

# Order by variable [ asc | desc ]

match $x isa person, has surname $n;

order by $n desc;

## ask

An ask query will return whether the given match query has any results.

**[match] ask**

match $x isa person, has name 'James Cameron';

ask;

## insert

An insert query will insert the specified variable patterns into the graph.

**insert [ pattern ; ... ]**

insert has identifier "Titus Groan" isa person;

If a match query is provided, the query will insert the given variable patterns for every result of the match query.

match $p has identifier "Minnie Downs";

insert $p has middlename "Mathilda";

match $b has name "Tim Burton";

$m isa movie; (director: $b, $m);

match $d has name "Johnny Depp";

# Insert a relation

insert (actor: $d, production-with-cast: $m) isa has-cast;

## delete

A delete query will delete the specified variable patterns for every result of the match query.

**match delete [ pattern ; ... ]**

match $x isa person; delete $x;

## Pattern Matching

Match a variable.

**identifier [ property, ... ]**

match $x isa person, val "Guillermo del Toro";

Match either the left or right pattern.

**pattern *or* pattern**

match $x isa movie or $x isa person;

Match either pattern to the left of `**or**` or all the patterns to the right.

**{ [ pattern ; ... ] }**

match $x isa person, has identifier $y;

{$y val contains "Elizabeth";} or

{$y val contains "Mary";};

## Type Properties

Specify the type of a concept.

**isa type**

match $x isa person;

Match concepts and their types.

match $x isa $y;

Match the concept with a particular ID.

**id {string}**

match $x id '12345';

Match concepts with a value that contains the given string.

**value [=**|**!=**|**<**|**<=**|**>=**|**>**|**contains] {value}**

match $m val contains "William Titus, Jr";

Match concepts with a resource matching a predicate.

**has resource [=**|**!=**|**<**|**<=**|**>=**|**>**|**contains] {value}**

match $p isa person, has age > 80;

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