Graql Cheatsheet ^ 1.3

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 [dev.grakn.ai/docs](https://dev.grakn.ai/).

## Variables

Variables start with $ followed by alphanumeric characters.

## Match clause

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

**match { pattern; }+ [modifiers]**

match $x isa person; get;

# Match several patterns together

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

**Modifiers**

# Get particular variables from the query

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

get $f, $s;

# Skip some results & limit the number returned

match $x isa person, has identifier $id;

limit 10; offset 5; get;

# Order by variable [ asc | desc ]

match $x isa person, has surname $n;

order by $n desc; get;

## Get Query

An get query will return the answers that satisfies the match patterns.

**Match { pattern }+ get;**

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

get $x;

## Insert Query

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

**[ match { pattern }+ ] 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"; get;

# Insert a relation

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

## Delete Query

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

**match {pattern}\* delete {var}+**

match $x isa person; delete $x;

## More on 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 contains "Elizabeth";} or

{$y contains "Mary";}; get;

## Types and Properties

Specify the type of a concept.

isa type

match $x isa person; get;

Match concepts and their types.

match $x isa $y; get;

Match the concept with a particular ID.

id {string}

match $x id "12345"; get;

Match concepts with a value that contains the given string.

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

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

Match concepts with a resource matching a predicate.

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

match $p isa person, has age > 80; get;

## Join Our Community!

Don’t forget to sign up for our regular newsletter and register on Slack for up-to-the-minute announcements about GRAKN.AI.