**Cats Precomputation**

**Precomputation Table:**

CREATE TABLE cats.pre\_WUsers AS

SELECT COUNT(\*) weight, lx.user\_id x\_user\_id, ly.user\_id y\_user\_id

FROM cats.like lx, cats.like ly

WHERE lx.video\_id = ly.video\_id

GROUP BY lx.user\_id, ly.user\_id;

**Origin query cost:**

CREATE VIEW init (uid, vid, verdict) AS

select user\_id as uid, v.video\_id as vid, 0 as verdict

from user u, video v;

CREATE VIEW overallLikes (uid, vid, verdict) AS

select u.user\_id as uid, l.video\_id as vid, 1 as verdict

from cats.users u, likes l

where l.user\_id != u.user\_id

union all

select \* from init;

CREATE VIEW cats.mykindOfUser (user\_id, other\_id) AS

select distinct ul.user\_id, ol.user\_id as other\_id

from likes ul, likes ol

where ul.user\_id != ol.user\_id and

ul.video\_id = ol.video\_id;

CREATE VIEW cats.mykindLikes (uid, vid, verdict) AS

select u.user\_id as uid, l.video\_id as vid, 1 as verdict

from cats.users u, mykindOfUser m, likes l

where m.user\_id = u.user\_id and

l.user\_id = m.other\_id

union all

select \* from init;

PREPARE Overall\_better (int) AS

select vid, sum (verdict) as rank

from mykindLikes myk

where myk.uid = $1 and

not exists (select 1 from watch w where w.user\_id = myk.uid and w.video\_id = myk.vid)

group by vid

order by rank desc

limit 10;

--EXECUTE Overall\_better (13);

Query returned successfully in 128 msec.

**New query Cost:**

select \* from init;

PREPARE Overall\_better (int) AS

select vid, sum (verdict) as rank

from mykindLikes myk

where myk.uid = $1 and

not exists (select 1 from watch w where w.user\_id = myk.uid and w.video\_id = myk.vid)

group by vid

order by rank desc

limit 10;

--EXECUTE Overall\_better (13);

Total query runtime: 123 msec. 10 rows retrieved.

### **Indices**

CREATE INDEX l\_vid\_uid

ON cats."like"

USING btree

(video\_id, user\_id);

CREATE INDEX pwu\_xy\_userid\_\_w

ON cats.pre\_WUsers

USING btree

(x\_user\_id, y\_user\_id, weight);

CREATE INDEX pwu\_userid

ON cats.pre\_WUsers

USING btree

(x\_user\_id);