**Approach of replacing MongoDB changeStream feature to Postgresql**

**Summary**

changeStream feature do effect our WebAdvise user behavior after the confirmation from LiangHsun, that means we can’t remove changeStream if we switch to use FerretDB, base is Postgresql. However, Postgresql has no changeStream Feature but it has some similar function like changeStream which is NOTIFY.

**Simple Demo for build a NOTIFY function of Postgresql in WSL2(Windows)**

1. **Download a Postgresql image**

Docker pull postgresql

1. **Create container**

docker run --name deon-postgres -e POSTGRES\_PASSWORD=deontest -e POSTGRES\_USER=root -d postgres

1. **in container, get into Psql cli**

psql -U root -d postgres

1. **Create database**

CREATE DATABASE deon\_test;

1. **Create table**

CREATE TABLE test\_notify (id SERIAL PRIMARY KEY, name TEXT NOT NULL);

1. **Create Trigger function**

CREATE OR REPLACE FUNCTION notify\_trigger() RETURNS TRIGGER AS $$

BEGIN

PERFORM pg\_notify('test\_channel', TG\_TABLE\_NAME || ' - Action: ' || TG\_OP || ', ID: ' || NEW.id);

RETURN NEW;

END;

$$ LANGUAGE plpgsql;

1. **Create Trigger and link to Channel**

CREATE TRIGGER test\_notify\_trigger

AFTER INSERT ON test\_notify

FOR EACH ROW

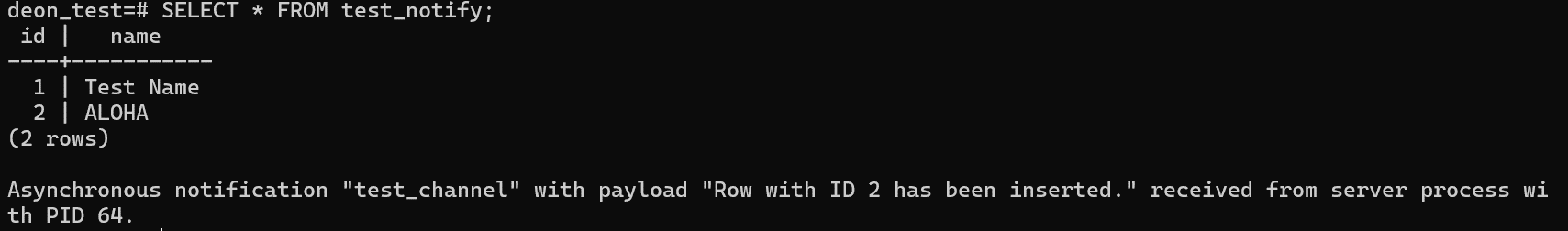
EXECUTE FUNCTION not ify\_trigger();

1. **Listen Channel**

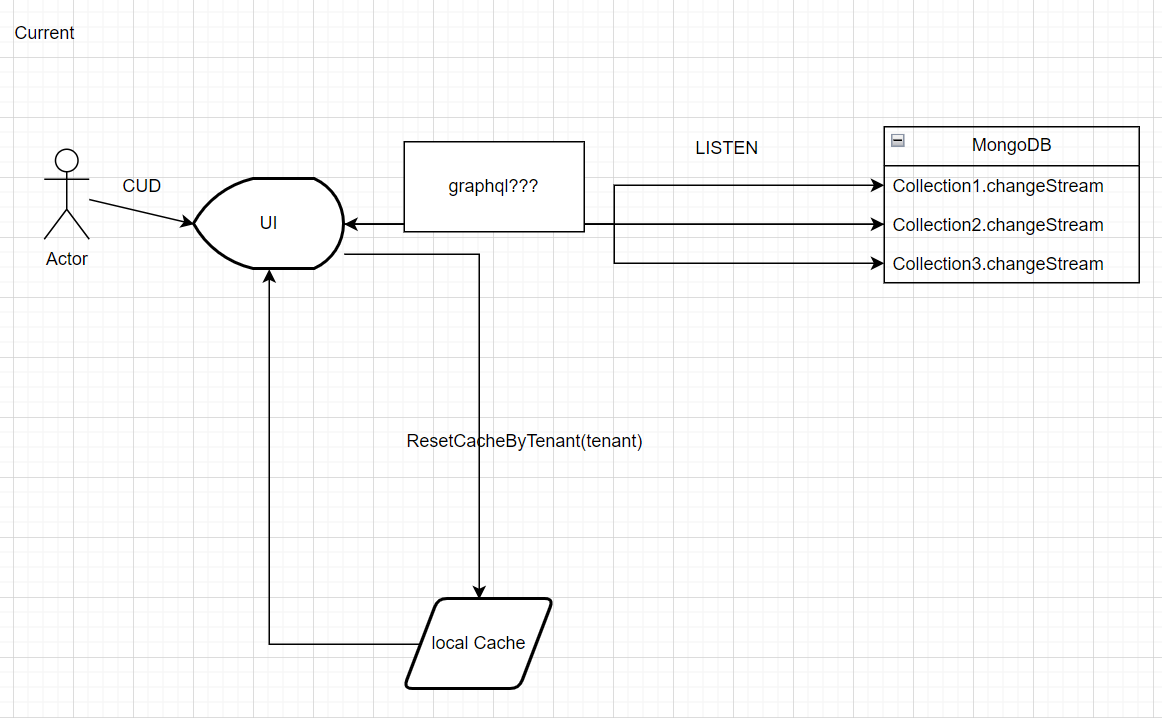
LISTEN test\_channel;

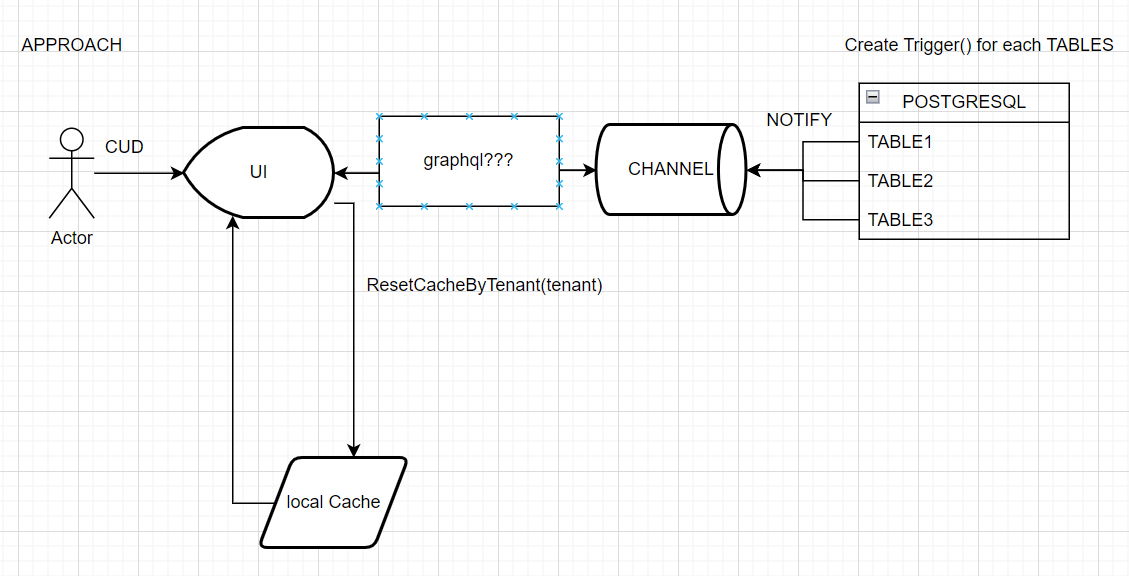
1. **Insert data**

INSERT INTO test\_notify (name) VALUES ('ALOHA');

Output

**Approach graph**





**Questions**

1. When will changeStream be initialized? At init state? -> at database creation -> once the service setup
2. After CUD from UI, what is the process to communicate to mongo and back to UI? -> At the backend, we only care about the cache invalidation and creation. We push the notification to the frontend by creating an OmdbUpdateEvent, We care about all the updates except for omdb\_ui
3. Which format or payload to communicate with frontend? graphQL or Json Payload or else? ->
4. Looks like original db layer in ADVISE project can’t adopt changStream and postgresql in the same time..we need new design? No Idea how to start..