

Hype Indexer

info NEAR QueryAPI is currently under development. Users who want to test-drive this solution need to be added to the allowlist before creating or forking QueryAPI indexers.

You can request access through [this link](#).

Overview

This indexer creates a new row in a pre-defined posts or comments table created by the user in the GraphQL database for every new post or comment found on the blockchain that contains either "PEPE" or "DOGE" in the contents. This is a simple example that shows how to specify two tables, filter blockchain transaction data for a specific type of transaction and its contents, and save the data to the database.

tip This indexer can be found by [following this link](#).

Defining the Database Schema

The first step to creating an indexer is to define the database schema. This is done by editing the schema.sql file in the code editor. The schema for this indexer looks like this:

```
CREATE
TABLE "posts"
( "id"
TEXT
NOT
NULL , "account_id"
VARCHAR
NOT
NULL , "block_height"
DECIMAL ( 58 ,
0 )
NOT
NULL , "block_timestamp"
DECIMAL ( 20 ,
0 )
NOT
NULL , "receipt_id"
VARCHAR
NOT
NULL , "content"
TEXT
NOT
NULL , CONSTRAINT
"posts_pkey"
PRIMARY
```

```

KEY
( "id" ) ) ;
CREATE
TABLE "comments"
( "id"
SERIAL
NOT
NULL , "post_id"
TEXT
NOT
NULL , "account_id"
VARCHAR
NOT
NULL , "block_height"
DECIMAL ( 58 ,
0 )
NOT
NULL , "block_timestamp"
DECIMAL ( 20 ,
0 )
NOT
NULL , "receipt_id"
VARCHAR
NOT
NULL , "content"
TEXT
NOT
NULL , CONSTRAINT
"comments_pkey"
PRIMARY
KEY

```

("id")) ; This schema defines two tables: posts and comments . The posts table has columns:

- id
- : a unique identifier for each row in the table
- account_id
- : the account ID of the user who created the post
- block_height
- : the height of the block in which the post was created
- block_timestamp
- : the timestamp of the block in which the post was created
- receipt_id

- : the receipt ID of the transaction that created the post
- content
- : the content of the post

The comments table has columns:

- id
- : a unique identifier for each row in the table
- post_id
- : the ID of the post that the comment was made on
- account_id
- : the account ID of the user who created the comment
- block_height
- : the height of the block in which the comment was created
- block_timestamp
- : the timestamp of the block in which the comment was created
- receipt_id
- : the receipt ID of the transaction that created the comment
- content
- : the content of the comment

Defining the indexing logic

The next step is to define the indexing logic. This is done by editing the `indexingLogic.js` file in the code editor. The logic for this indexer can be divided into two parts:

1. Filtering blockchain transactions for a specific type of transaction
2. Saving the data from the filtered transactions to the database

Filtering Blockchain transactions

The first part of the logic is to filter blockchain transactions for a specific type of transaction. This is done by using the `getBlock` function. This function takes in a block and a context and returns a promise. The block is a Near Protocol block, and the context is a set of helper methods to retrieve and commit state. The `getBlock` function is called for every block on the blockchain.

The `getBlock` function for this indexer looks like this:

```
import
{
  Block
}
from
"@near-lake/primitives" ;

async
function
getBlock ( block :
  Block , context )
{ const
  SOCIAL_DB
  =
  "social.near" ;
  function
  base64decode ( encodedValue )
  { let buff =
```

```

Buffer . from ( encodedValue ,
"base64" ) ; return
JSON . parse ( buff . toString ( "utf-8" ) ) ; }
function
get_near_social_posts_comments ( block_type = block , DB
=
SOCIAL_DB , decodeFunction = base64decode )
{ const nearSocialPostsComments = block_type . actions ( ) . filter ( ( action )
=> action . receiverId
===
DB ) . flatMap ( ( action )
=> action . operations . map ( ( operation )
=> operation [ "FunctionCall" ] ) . filter ( ( operation )
=> operation ?. methodName ===
"set" ) . map ( ( functionCallOperation )
=>
( { ... functionCallOperation , args :
decodeFunction ( functionCallOperation . args ) , receiptId : action . receiptId ,
// providing receiptId as we need it } ) ) . filter ( ( functionCall )
=>
{ const accountId =
Object . keys ( functionCall . args . data ) [ 0 ] ; return
( Object . keys ( functionCall . args . data [ accountId ] ) . includes ( "post" )
|| Object . keys ( functionCall . args . data [ accountId ] ) . includes ( "index" ) ) ; } ) ) ; return nearSocialPostsComments ; }
const nearSocialPostsComments =
get_near_social_posts_comments ( ) ;
...
// Further filtering for posts/comments that contain "PEPE" or "DOGE" in the contents and saving the data to the database is
done in the next section } Again, like with the posts-indexer or the feed-indexer , this filter selects transactions that are of
typeFunctionCall to the set method on the contract social.near on the network. In addition, it searches for post or index string in
the data for the call.

```

Saving the data to the Database

The second part of the logic is to save the data from the filtered transactions to the database. This section also performs the filtering of transactions for posts and comments that contain "PEPE" or "DOGE" in the contents.

The logic for this looks like:

```

...
// Logic for filtering blockchain transactions is above
if
( nearSocialPostsComments . length

```

```

0 )

{ const blockHeight = block . blockHeight ; const blockTimestamp =
Number ( block . header ( ) . timestampNanosec ) ; await
Promise . all ( nearSocialPostsComments . map ( async
( postAction )
=>
{ const accountId =
Object . keys ( postAction . args . data ) [ 0 ] ; console . log ( ACCOUNT_ID: { accountId } ) ;
const isPost = postAction . args . data [ accountId ] . post
&& Object . keys ( postAction . args . data [ accountId ] . post ) . includes ( "main" ) ; const isComment = postAction . args .
data [ accountId ] . post
&& Object . keys ( postAction . args . data [ accountId ] . post ) . includes ( "comment" ) ;
if
( isPost )
{ const isHypePost = postAction . args . data [ accountId ] . post . main . includes ( "PEPE" )
|| postAction . args . data [ accountId ] . post . main . includes ( "DOGE" ) ; if
( ! isHypePost )
{ return ; } console . log ( "Creating a post..." ) ; const postId =
{ accountId } : { blockHeight } ; await
createPost ( postId , accountId , blockHeight , blockTimestamp , postAction . receiptId , postAction . args . data [ accountId ]
. post . main ) ; } if
( isComment )
{ const commentString =
JSON . parse ( postAction . args . data [ accountId ] . post . comment ) ; const isHypeComment = commentString . includes
( "PEPE" )
|| commentString . includes ( "DOGE" ) ; if
( ! isHypeComment )
{ return ; } console . log ( "Creating a comment..." ) ; const postBlockHeight = postAction . args . data [ accountId ] . post .
blockHeight ; const postId =
{ accountId } : { postBlockHeight } ; await
createComment ( accountId , postId , blockHeight , blockTimestamp , postAction . receiptId , commentString ) ; } } ) ; }
...
// Definitions for createPost and createComment are below

```

createPost

Creating a post is done by using the [context.db.Posts.insert\(\)](#) function:

```

async
function
createPost ( postId , accountId , blockHeight , blockTimestamp , receiptId , postContent )

```

```

{ try
{ const postObject =
{ id : postId , account_id : accountId , block_height : blockHeight , block_timestamp : blockTimestamp , receipt_id : receiptId
, content : postContent , } ; await context . db . Posts . insert ( postObject ) ; console . log ( "Post created!" ) ; }
catch
( error )
{ console . error ( error ) ; } }

```

createComment

Creating a comment is done by using the [context.db.Comments.insert\(\)](#) function:

```

async
function
createComment ( accountId , postId , blockHeight , blockTimestamp , receiptId , commentContent )
{ try
{ const commentObject =
{ account_id : accountId , post_id : postId , block_height : blockHeight , block_timestamp : blockTimestamp , receipt_id :
receiptId , content : commentContent , } ; await context . db . Comments . insert ( commentObject ) ; console . log (
"Comment created!" ) ; }
catch
( error )
{ console . error ( error ) ; } }

```

Querying data from the indexer

The final step is querying the indexer using the public GraphQL API. This can be done by writing a GraphQL query using the GraphiQL tab in the code editor.

For example, here's a query that fetches posts and comments from the Hype Indexer , ordered by block_height :

```

query
MyQuery
{ < user - name
  _near_hype_indexer_posts ( order_by :
{ block_height :
desc } )
{ account_id block_height content } < user - name
  _near_hype_indexer_comments ( order_by :
{ block_height :
desc } )

```

{ account_id block_height content } } Once you have defined your query, you can use the GraphiQL Code Exporter to auto-generate a JavaScript or NEAR Widget code snippet. The exporter will create a helper method `fetchGraphQL` which will allow you to fetch data from the indexer's GraphQL API. It takes three parameters:

- `operationsDoc`
- : A string containing the queries you would like to execute.

- operationName
- : The specific query you want to run.
- variables
- : Any variables to pass in that your query supports, such as offset
- and limit
- for pagination.

Next, you can call the `fetchGraphQL` function with the appropriate parameters and process the results.

Here's the complete code snippet for a NEAR component using the `Hype Indexer` :

```
const
QUERYAPI_ENDPOINT
=
https://near-queryapi.api.pagoda.co/v1/graphql/ ;

State . init ( { data :
[] } ) ;

const query =
query MyHypeQuery { <user-name>_near_hype_indexer_posts(order_by: {block_height: desc}) { account_id block_height content } <user-
name>_near_hype_indexer_comments(order_by: {block_height: desc}) { account_id block_height content } }

function
fetchGraphQL ( operationsDoc , operationName , variables )

{ return
asyncFetch ( QUERYAPI_ENDPOINT , { method :
"POST" , headers :
{
"x-hasura-role" :
<user-name>_near
} , body :
JSON . stringify ( { query : operationsDoc , variables : variables , operationName : operationName , } ) , } ) ; }

fetchGraphQL ( query ,
"MyHypeQuery" ,
{ } ) . then ( ( result )
=>
{ if
( result . status
===
200 )
{ if
( result . body . data )
{ const data = result . body . data . < user - name
_near_hype_indexer_posts ; State . update ( { data } ) console . log ( data ) ; } } } ) ;
const
```

```
renderData
```

```
=
```

```
( a )
```

```
=>
```

```
{ return
```

```
( < div key = { JSON . stringify ( a ) }
```

```
    { JSON . stringify ( a ) } < / div
```

```
    ) ; } ;
```

```
const renderedData = state . data . map ( renderData ) ; return
```

```
( { renderedData } ) ; tip To view a more complex example, see this widget which fetches posts with proper pagination
```

[Posts Widget powered By QueryAPI](#) . [Edit this page](#) Last updated on Jan 9, 2024 by gagdiez Was this page helpful? Yes No

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