Project Presentation

BADM554 Enterprise Database Management
Fall 2023

Group 3
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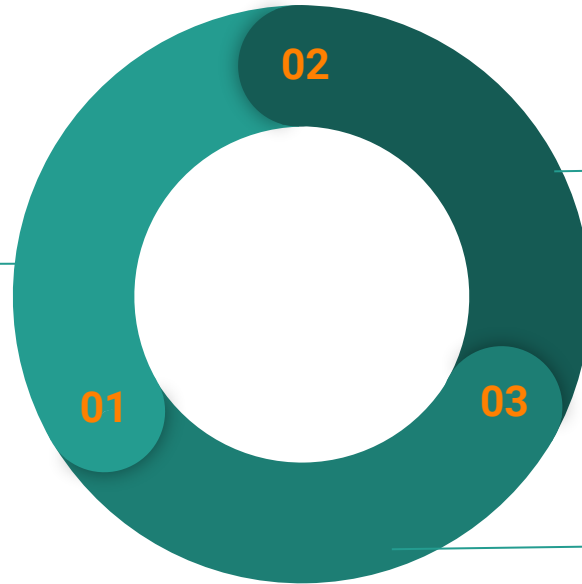# Agenda

Introduction — Mini Project 1 — Mini Project 2 — Mini Project 3 — Challenges & Rewards

Introduction

Mini project 1

Convert Yelp JSON data(semi-structured) to MySQL(structured) with proper metadata specification.
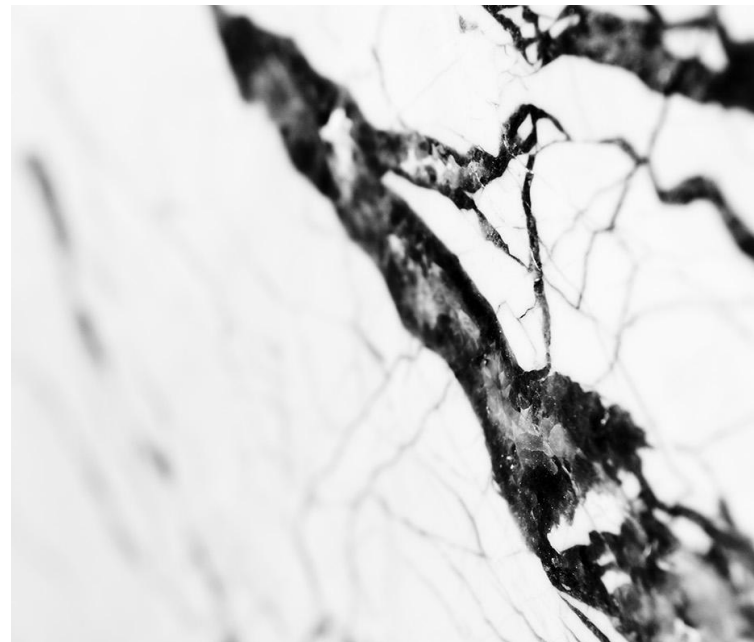
Mini project 2

Experience in learning a new domain(blockchains) in order to get business insights, by practicing your knowledge of SQL and Data Modeling.

Mini project 3

Experience working with MongoDB, Knime, and API's. Experience in setting up a cloud database, accessing it via a third-party tool(Knime), and then processing and querying it.

01

02

03

Project 1

Yelp JSON to MySQL

Mini Project 1

Query 1

Looking up where most people would go for restaurants to select the ideal location

```
[22] %%sql
     SELECT city, state, ROUND(AVG(review_count),0) AS average_review_count
     FROM business
     WHERE review_count > 100
     GROUP BY city, state
     ORDER BY average_review_count DESC
     limit 50
```

```
 * mysql://B03:***@testproject.mysql.database.azure.com:3306/B03
50 rows affected.
```

city	state	average_review_count
North Redington Bch	FL	1175
Glendora	NJ	494
High Ridge	MO	436
Vincentown	NJ	430
Clearwater Beach	FL	417

Mini Project 1

Query 2   Examine all kinds of the businesses in that city to choose the top category to open

Mini Project 1

Query 3

Identify users who rate the selected restaurant with 0 or 1 star to understand and address potential shortcomings from their reviews

```
[ ] %%sql
    SELECT user_id, text, stars
    FROM review
    WHERE business_id =
            (SELECT business_id
             FROM business
             WHERE city="North Redington Bch"
             ORDER BY review_count desc
             limit 1)
      AND useful > 0
      AND stars =1 or stars=0
    ORDER BY stars DESC
    LIMIT 50;
```

```
 * mysql://B03:***@testproject.mysql.database.azure.com:3306/B03
23 rows affected.
```

user_id	text	stars
ChrdTlE-ATD7kil4mPU14w	I had the Paella. It was way over cooked. All of the seafood and chickened dry and chewy and the rice was dry as well. I advised the waitress, who told the manager, who didn't even bother to come by the table, much less comp the un eaten meal. The other 3 at the table give their meal 2 at best. This place may be OK for happy hour drinks, but definitely not for food.	1
Piyr8nhX9xd0payzBPvkoA	Super slow service! I understand it's a touristy place but come on! The food was not good either. The crackers that came with oysters were unbelievably stale, oysters were decent. I also ordered grouper and the first few bites tasted great but as soon as I got to the thicker part it was not cooked through and was super fishy. Broccoli was dry and honestly disgusting. Don't waste your time and money! My son ordered kids burger and it came with literally like 5 fries and the burger itself was a weird consistency and flavor. My son chose to stay hungry First, know we have eaten at Conch Republic several times, and it has been one of the family favorite spots for a good, solid meal. Tonight, between food issues and service overall, we had an experience that may lead to our not returning.	1

Mini Project 1

Query 4

Find out the influential users to focus on addressing the problems mentioned in their negative reviews

Mini Project 1

Query 5

Examine the attributes of the selected restaurant and see how we can improve to compete with the current restaurant

```sql
%%sql
SELECT attributes
FROM business
WHERE business_id = (
    SELECT business_id
    FROM business
    WHERE city = 'North Redington Bch'
    ORDER BY review_count DESC
    LIMIT 1
);
```

* mysql://B03:***@testproject.mysql.database.azure.com:3306/B03
1 rows affected.

                                                                                    attributes

{"WiFi": "free", "HasTV": "True", "Caters": "False", "Alcohol": "u'full_bar'", "Ambience": "{'touristy': None, 'hipster': False, 'romantic': False, 'divey': False, 'intim
"HappyHour": "True", "NoiseLevel": "u'average'", "BikeParking": "True", "DogsAllowed": "False", "GoodForKids": "True", "GoodForMeal": "{'dessert': None, 'late
"OutdoorSeating": "True", "BusinessParking": "{'garage': True, 'street': True, 'validated': False, 'lot': True, 'valet': False}", "RestaurantsAttire": "u'casual'", "Rest
"2", "RestaurantsReservations": "False", "RestaurantsTableService": "True", "RestaurantsGoodForGroups": "True", "BusinessAcceptsCreditCards": "True"}

Mini Project 1

Explore JSON Data

Gained proficiency in handling JSON data and determine how it maps to database tables.

Transform data

Learned how to load JSON data into a Pandas DataFrame for manipulation

Develop Business Value Queries

Translated data analysis into actionable business strategies, understanding how data drives decision-making.

Project 2

NFT Sales Analysis on Ethereum Blockchain
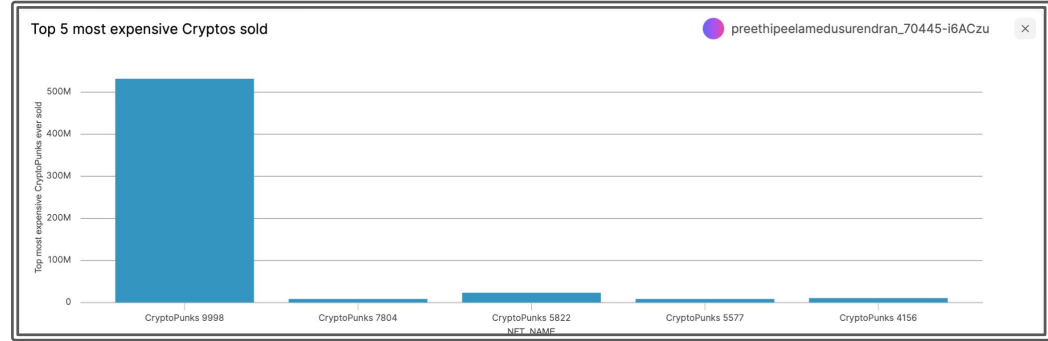
Cryptopunks

- Cryptopunk originated in July 2017

- The image of 10,000 pixel art

- No two alike images

- Popular

  - Oldest

  - One of the most successful

 - Expensive

Top 5 Most Expensive Sales

- In 2017 a CryptoPunk valued at 0.05 ETH.

- It is currently at 57.2 ETH.

- 1ETH = 2249.98 USD as of today.

Top 5 most expensive Cryptos sold — preethipeelamedusurendran_70445-i6ACzu

The most expensive CryptoPunks NFT sold in ETH

Price of CRYPTOPUNKS — preethipeelamedusurendran_70445-i6ACzu

532.4m

The image of the highest sold CRYPTOPUNK is down below:

powered by flipside   2023-11-12

Sales Growth

- Started of with $61.89 average sale in the month of June 2017.

- Highest average sale recorded was in October 2021 for a whopping average of $490,093.64

- The average sales has only dropped since then with no significant peak
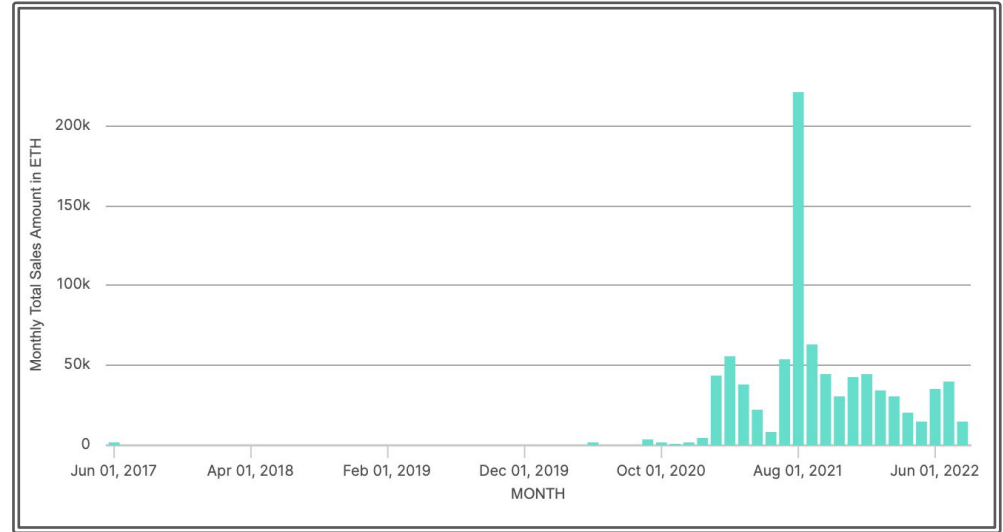
Mini Project 2 - Cryptopunk Analysis

Blockchain Concepts:

Understanding the basics of blockchain technology and NFT.

Data Analysis

Extracting meaningful insights from blockchain data, including sales trends and statistics.

Query optimisation

Writing efficient queries to retrieve relevant information from a large dataset.

Project 3
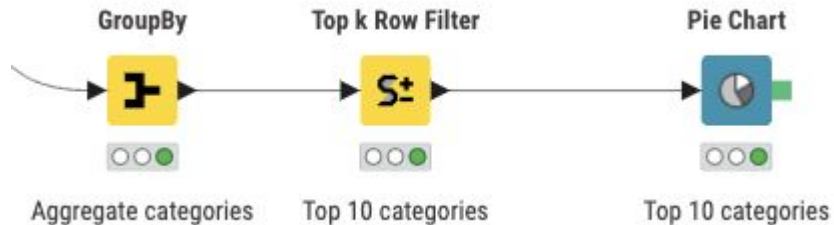
Yelp & NFT
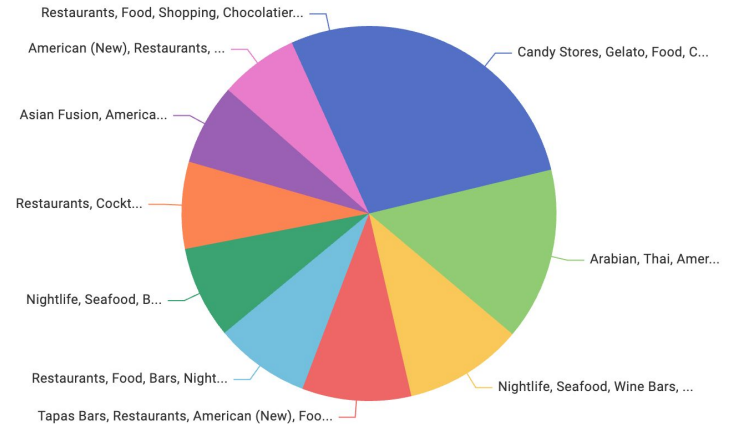## In Knime

Mini Project 3 - Yelp

Workflow

Select top 10 categories from business table
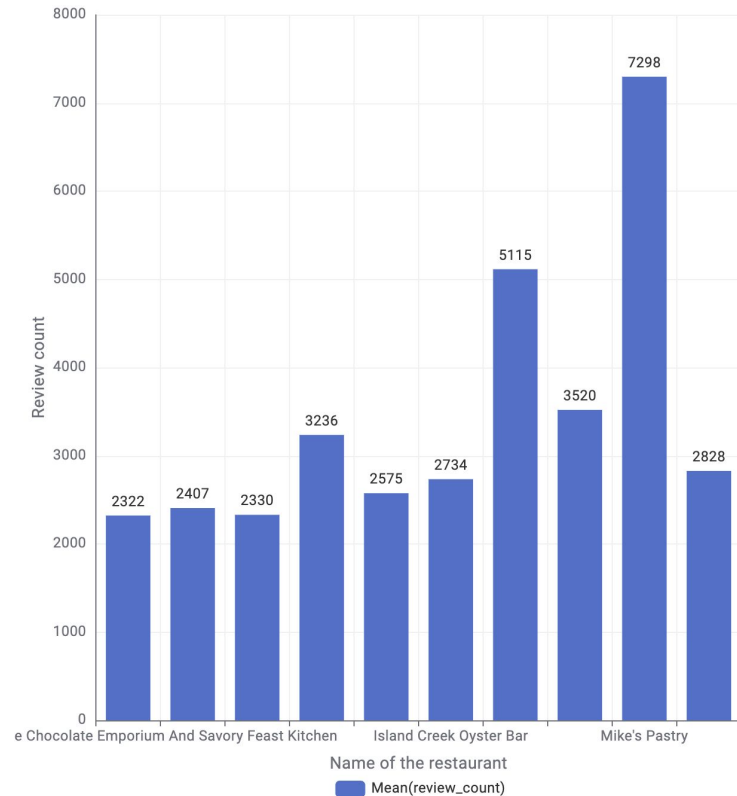

Top 10 catrgories

Mini Project 3 - Yelp

Workflow

Select top 10 user rated from business table

GroupBy — Average rating → Top k Row Filter — Top 10 restaurants → Bar Chart — Top user rated

Top rated Restaurants

Values shown: 2322, 2407, 2330, 3236, 2575, 2734, 5115, 3520, 7298, 2828

Y-axis: Review count
X-axis: Name of the restaurant
Legend: Mean(review_count)

X-axis labels: e Chocolate Emporium And Savory Feast Kitchen, Island Creek Oyster Bar, Mike's Pastry
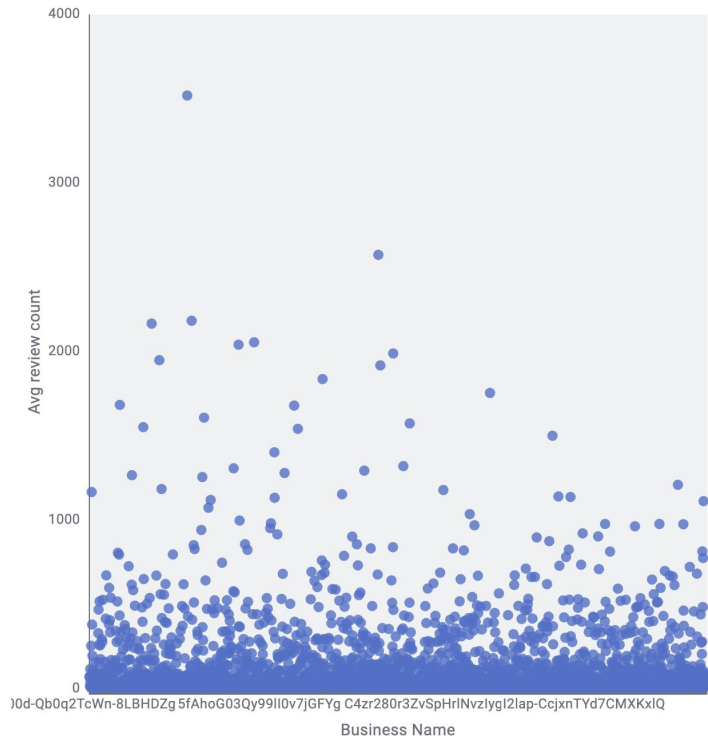
Mini Project 3 - Yelp

Workflow

Count average review to determine
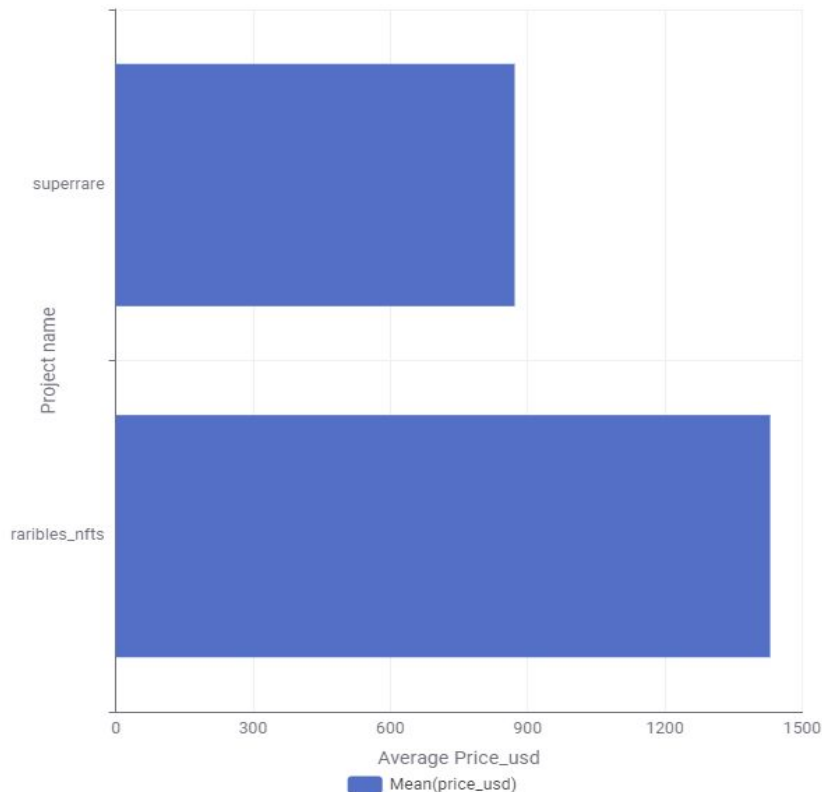dynamics of each restaurant

Understanding Review Dynamics

Mini Project 3 - Cryptopunks

Project Name vs. Average Price (usd)

Workflow

Grouped by Project_name, calculate average price and conduct visualization.

GroupBy — group by project name

Sorter — arrange by average price_usd

Bar Chart — The result shows that there are huge differences in average price in two categories.
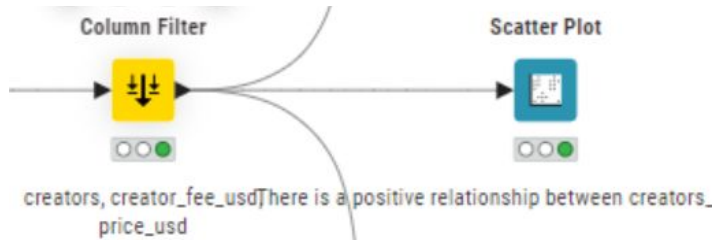
The result shows that there are huge differences in average price in two categories.
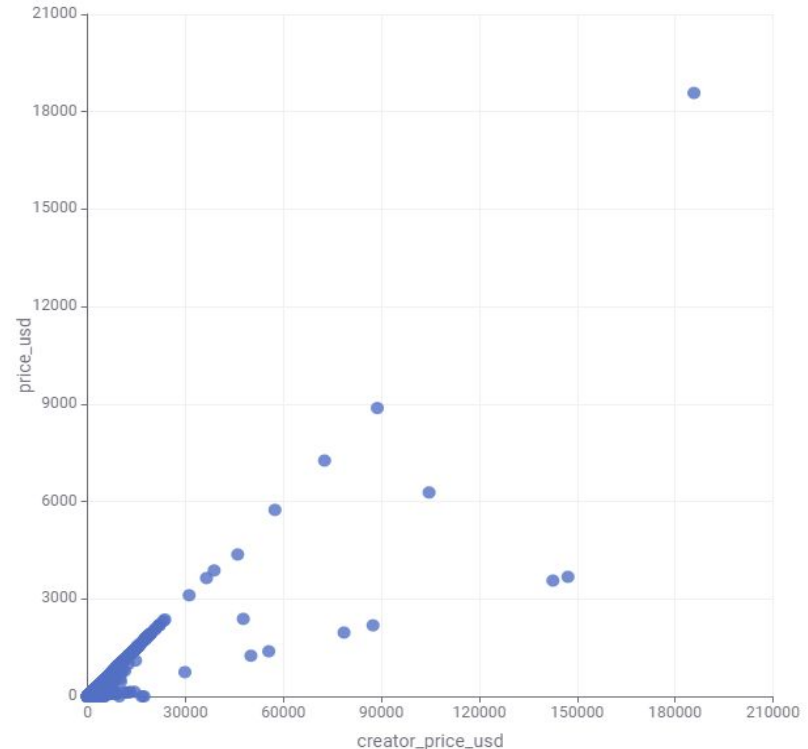
Mini Project 3 - Cryptopunks

Workflow

Determine relationship between creator price and nft price.

Column Filter   Scatter Plot

creators, creator_fee_usdThere is a positive relationship between creators_
price_usd

The result shows that there is a positive relationship between two prices.
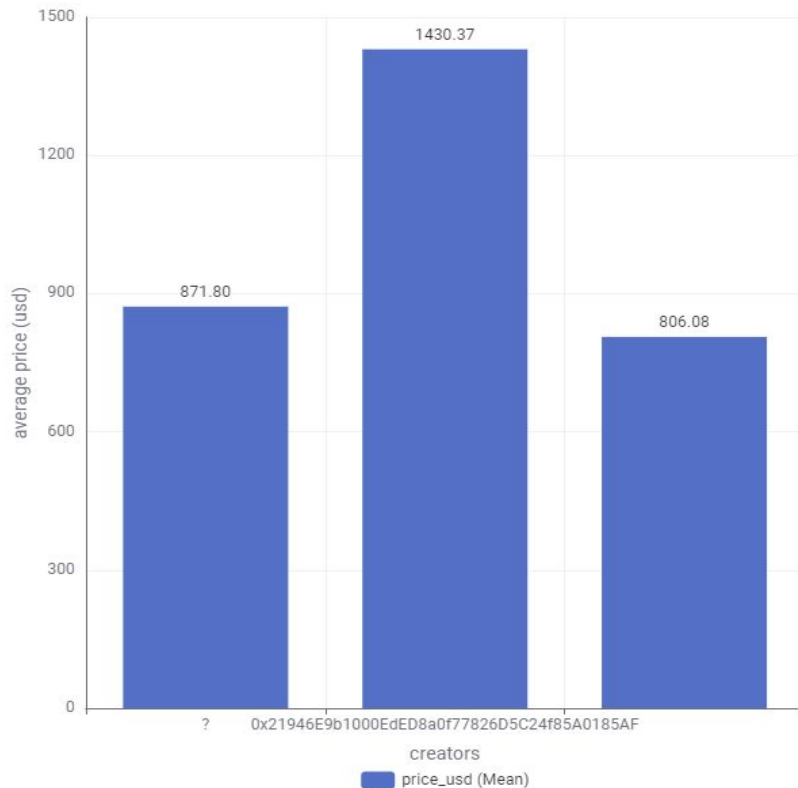
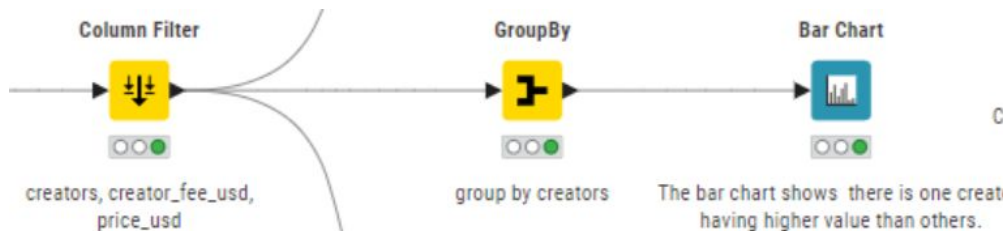creator price vs. price (usd)

Mini Project 3 - Cryptopunks

creators vs. average price (usd)

Workflow

Group by creators, determine which one created the highest values.

Column Filter

creators, creator_fee_usd, price_usd

GroupBy

group by creators

Bar Chart

The bar chart shows there is one creat having higher value than others.

The result shows that shows there is one creator having higher value than others.

Challenges & Rewards

Challenges & Rewards

Challenges
- Learning new tools, platforms, or technologies within a short time frame.
- Dealing with immense amount of real life data.

Rewards
- Refine my data transformation skills and boosted my confidence in handling real-world datasets.
- Professional Skills
  - Teamwork strengthened.
  - Collaborate effectively.
  - Practical knowledge that is directly applicable in the workforce.

Thanks!