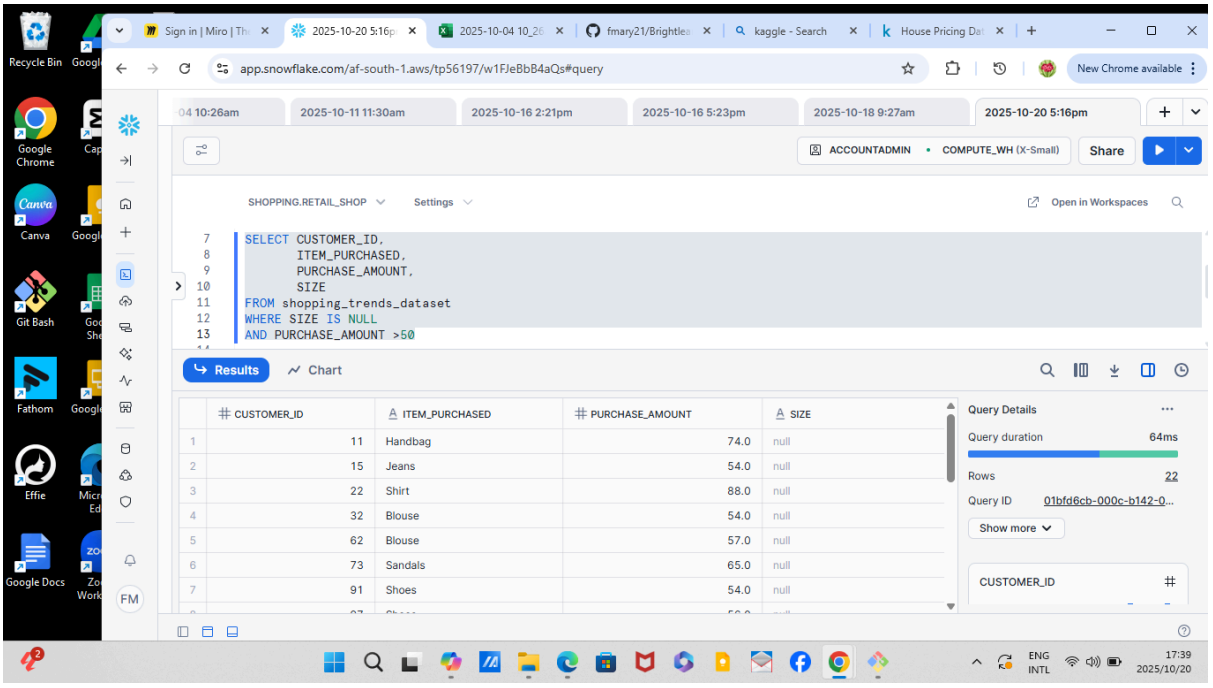
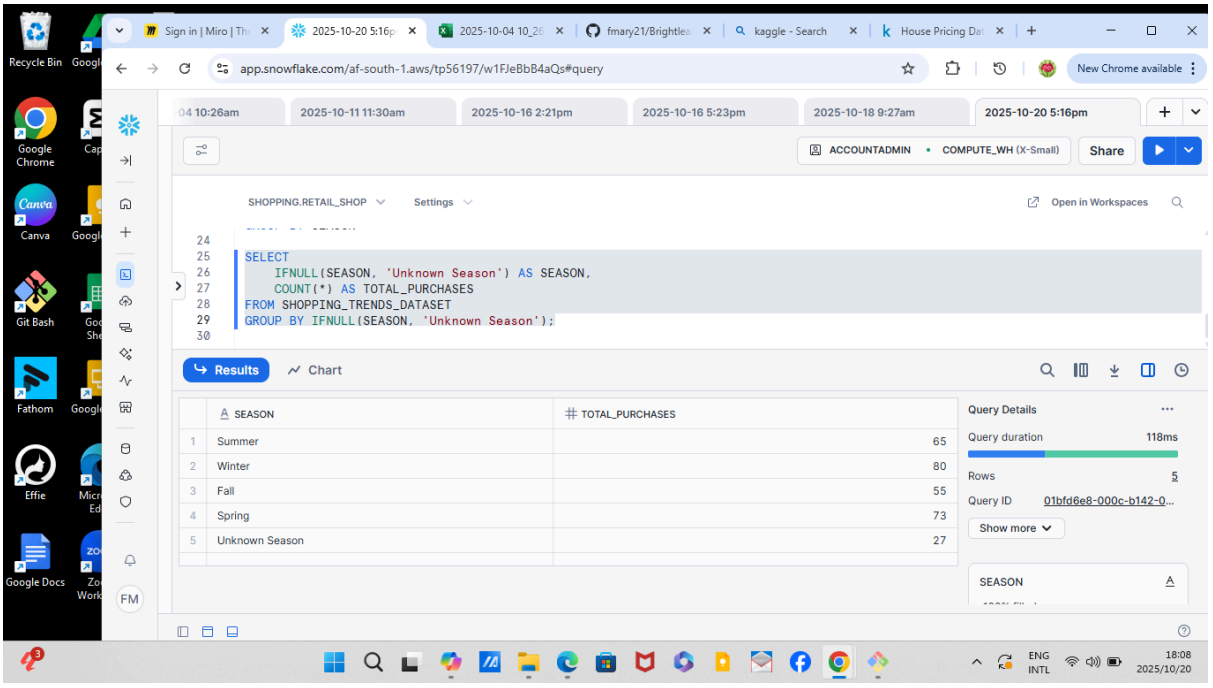
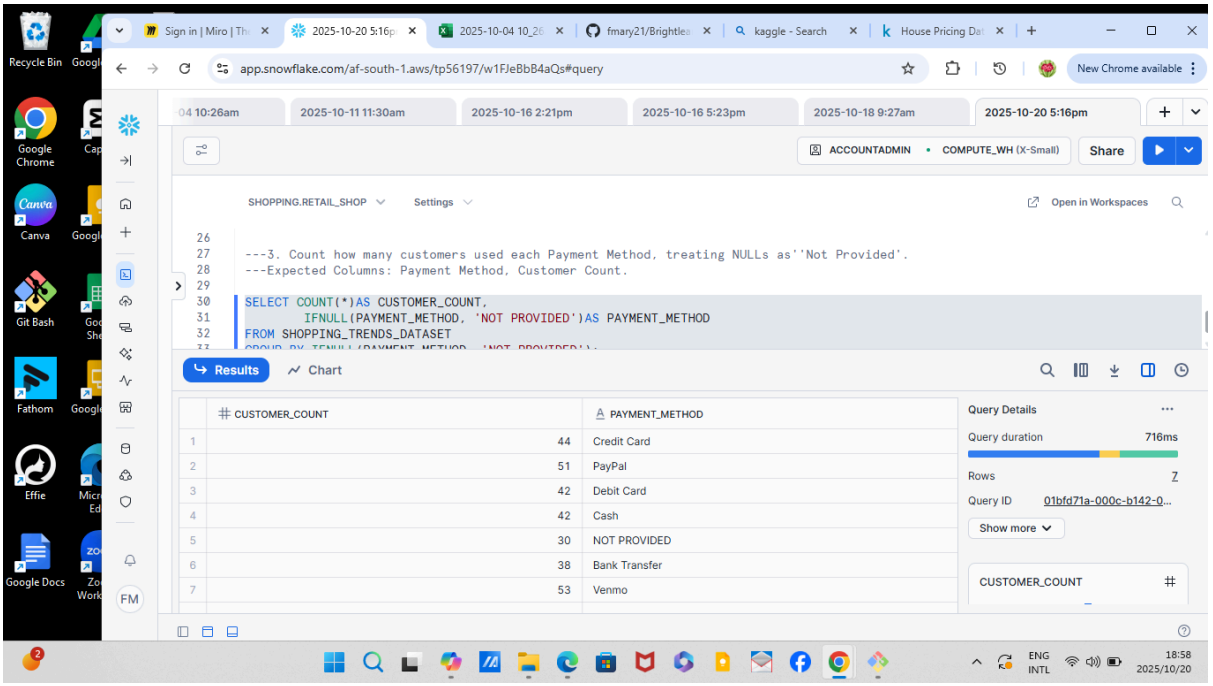
PRACTICAL 3 - FADZAI MAKANDA



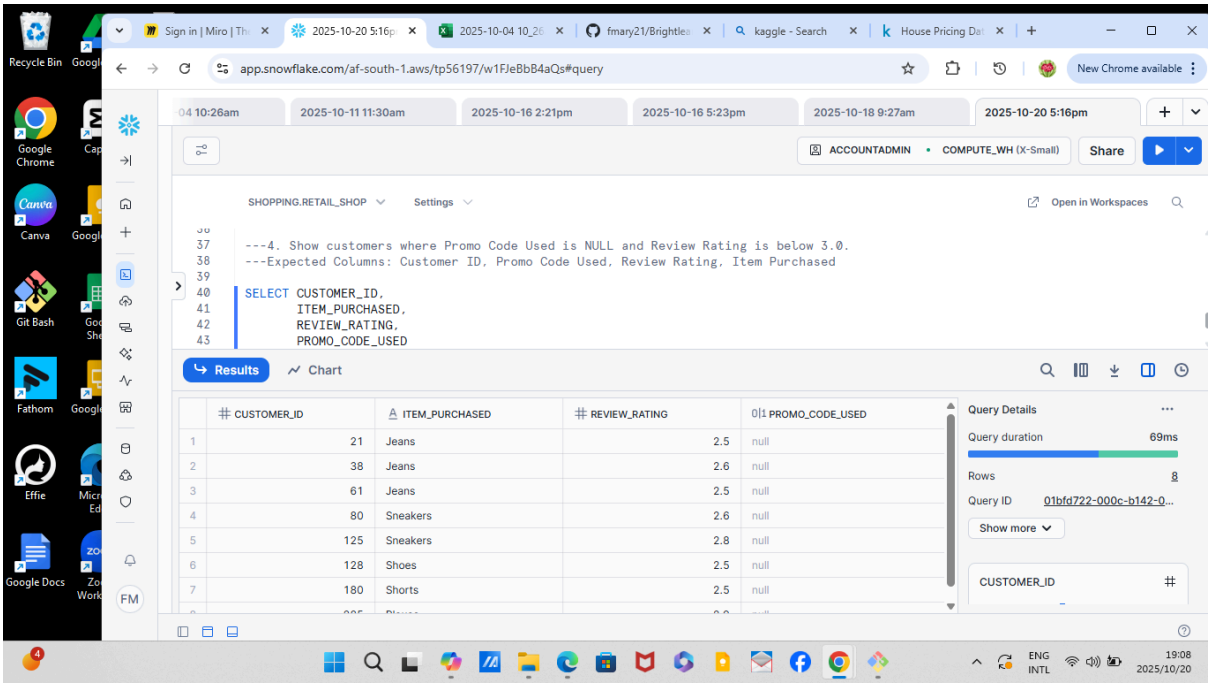
QUESTION I - FADZAI MAKANDA



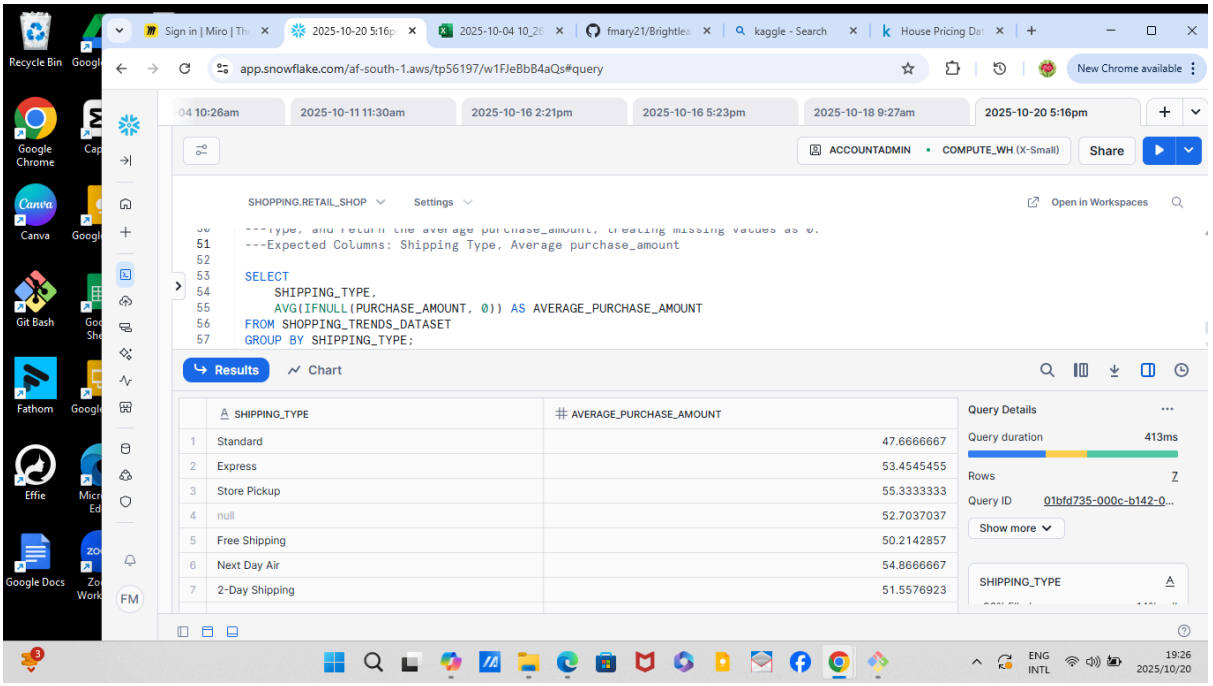
QUESTION 2



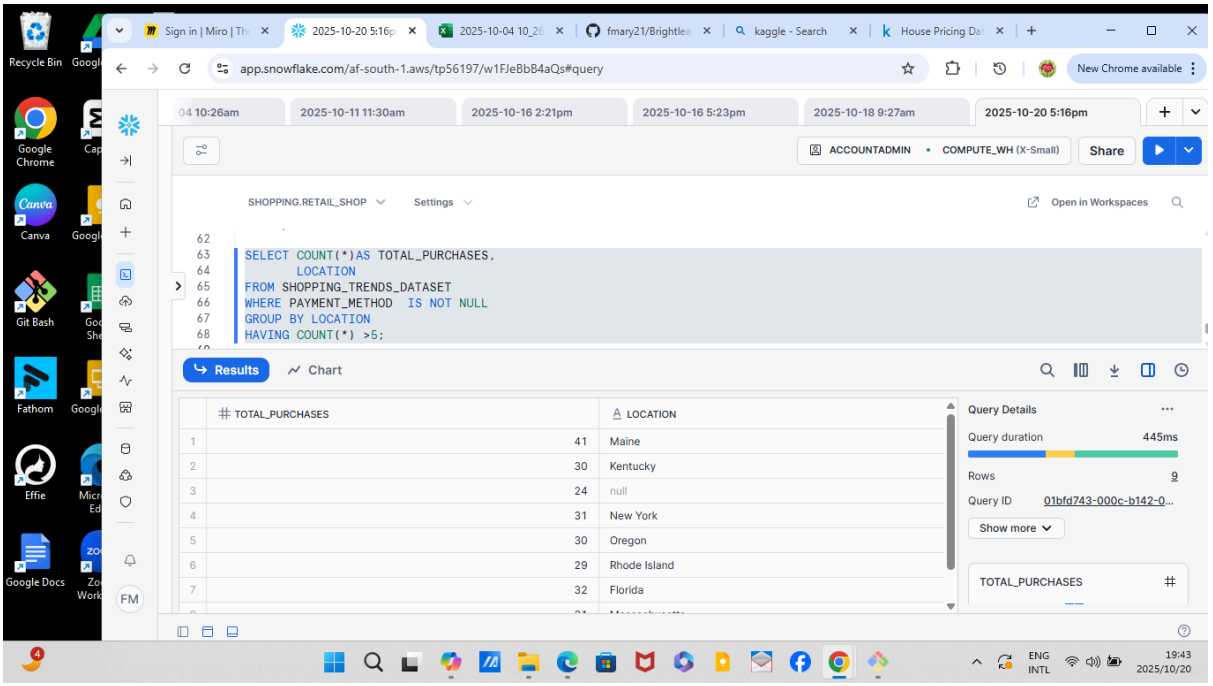
QUESTION 3 - FADZAI MAKANDA



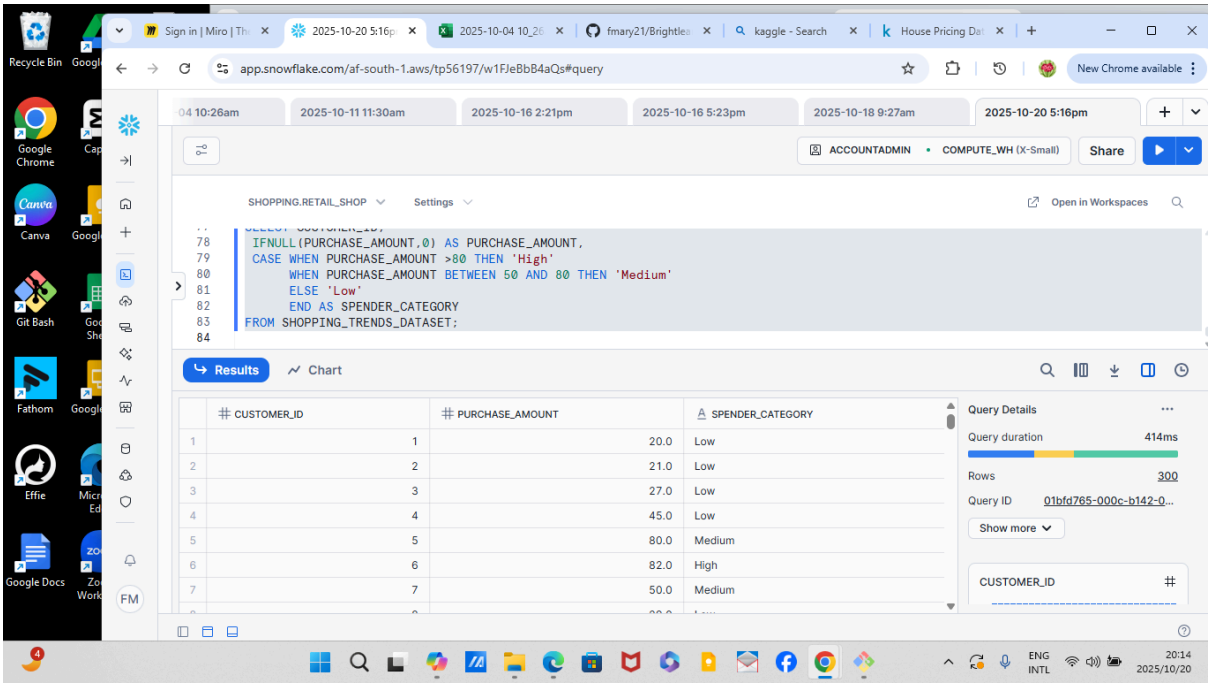
QUESTION 4



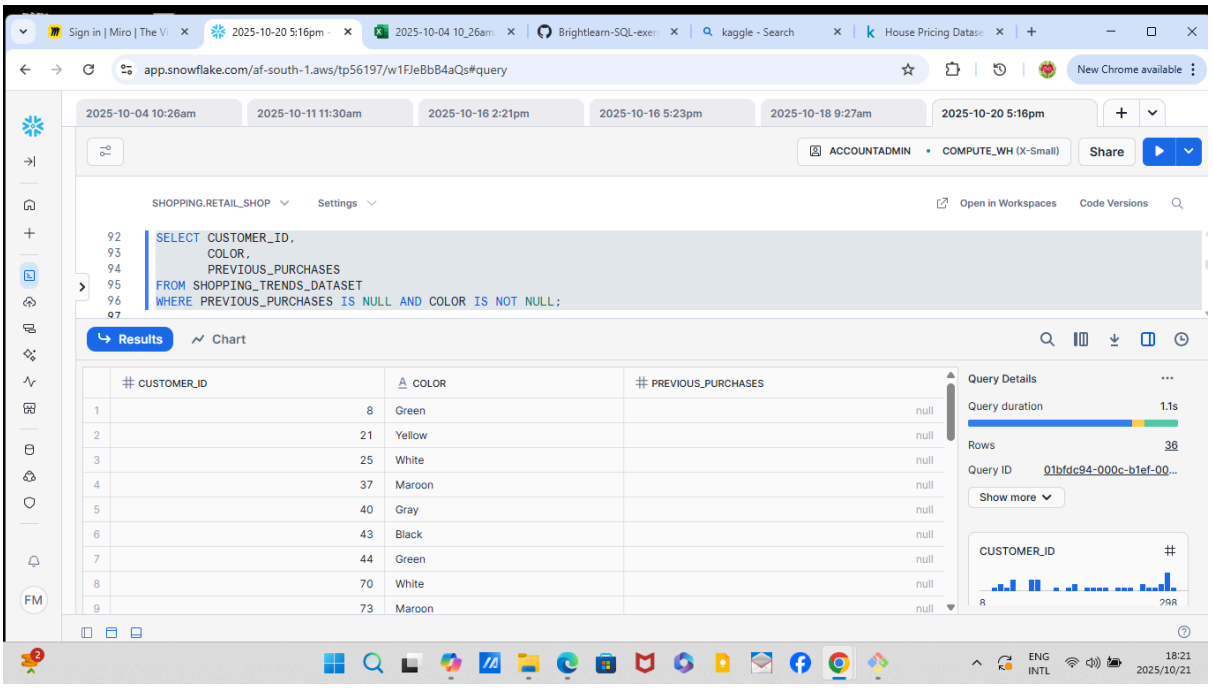
QUESTION 5



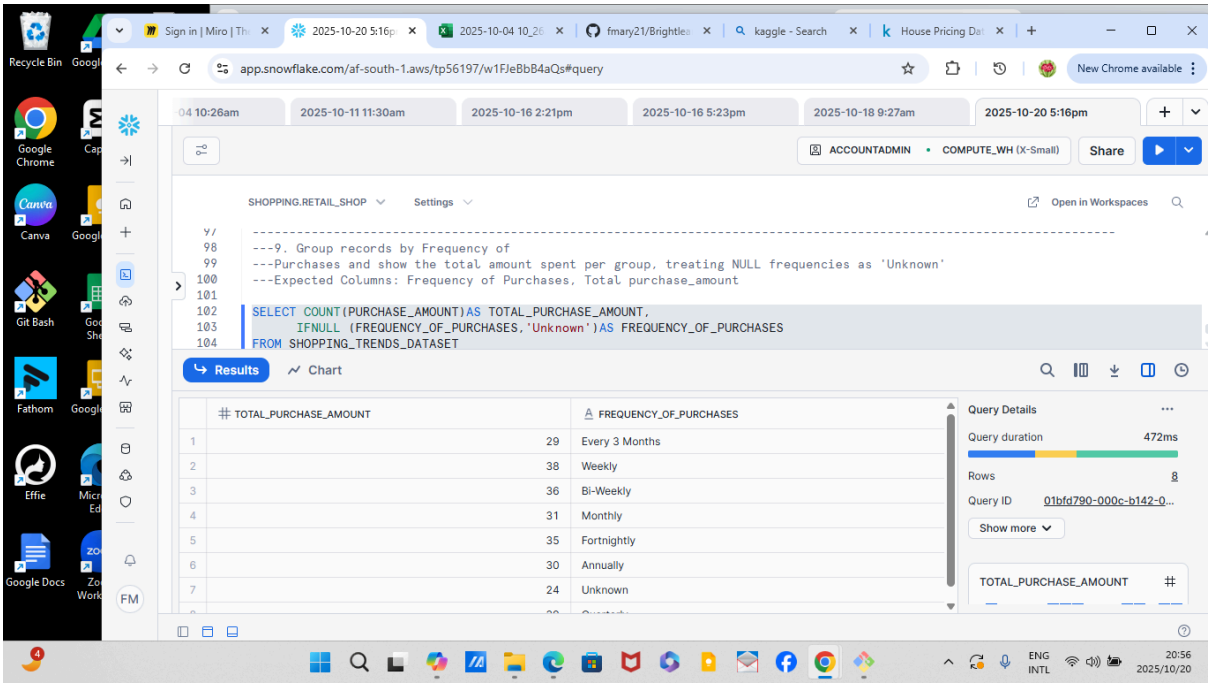
QUESTION 6 - FADZAI MAKANDA



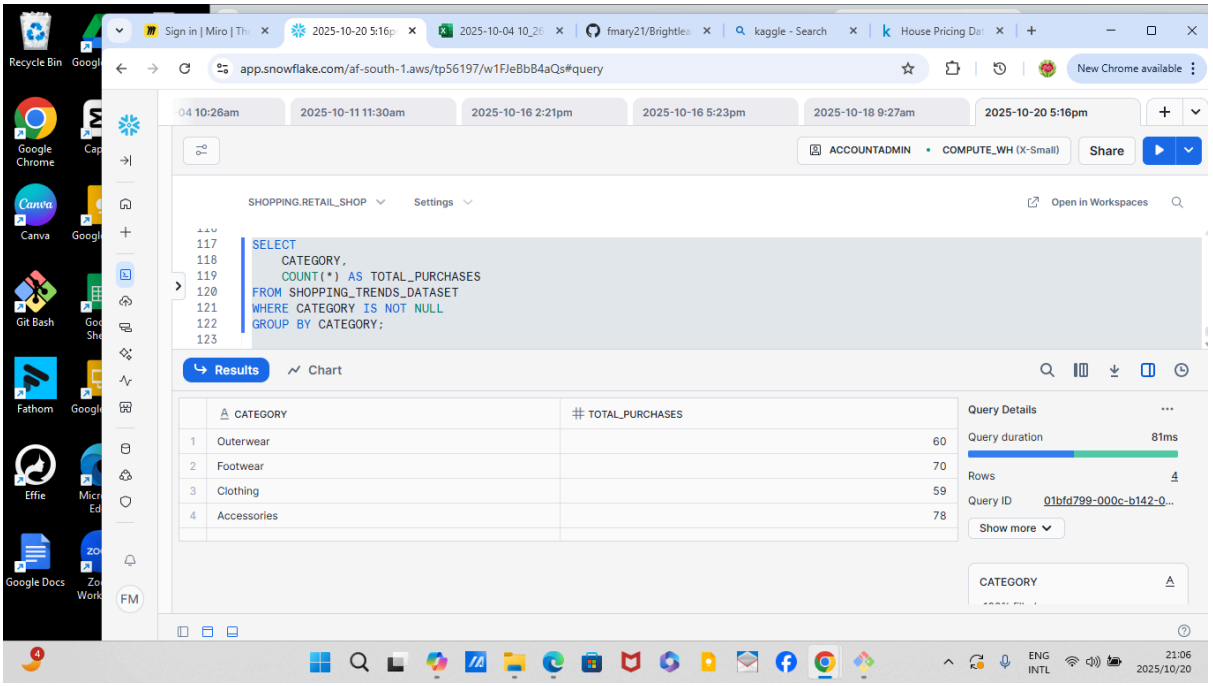
QUESTION 7



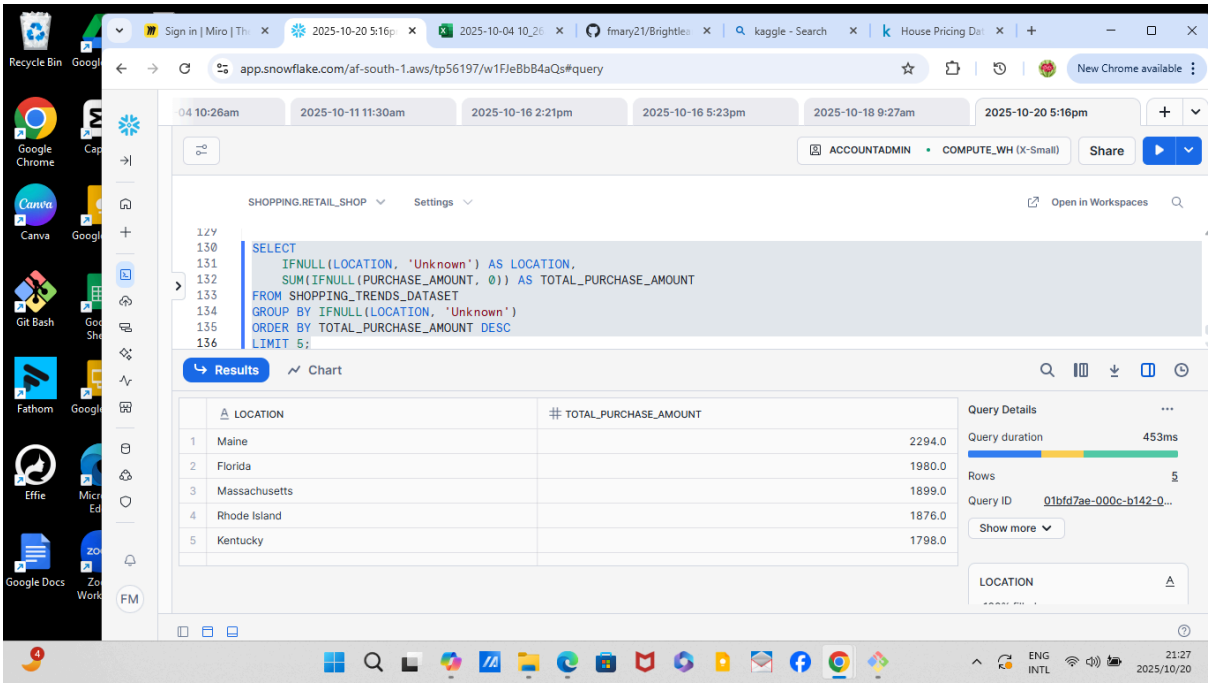
QUESTION 8



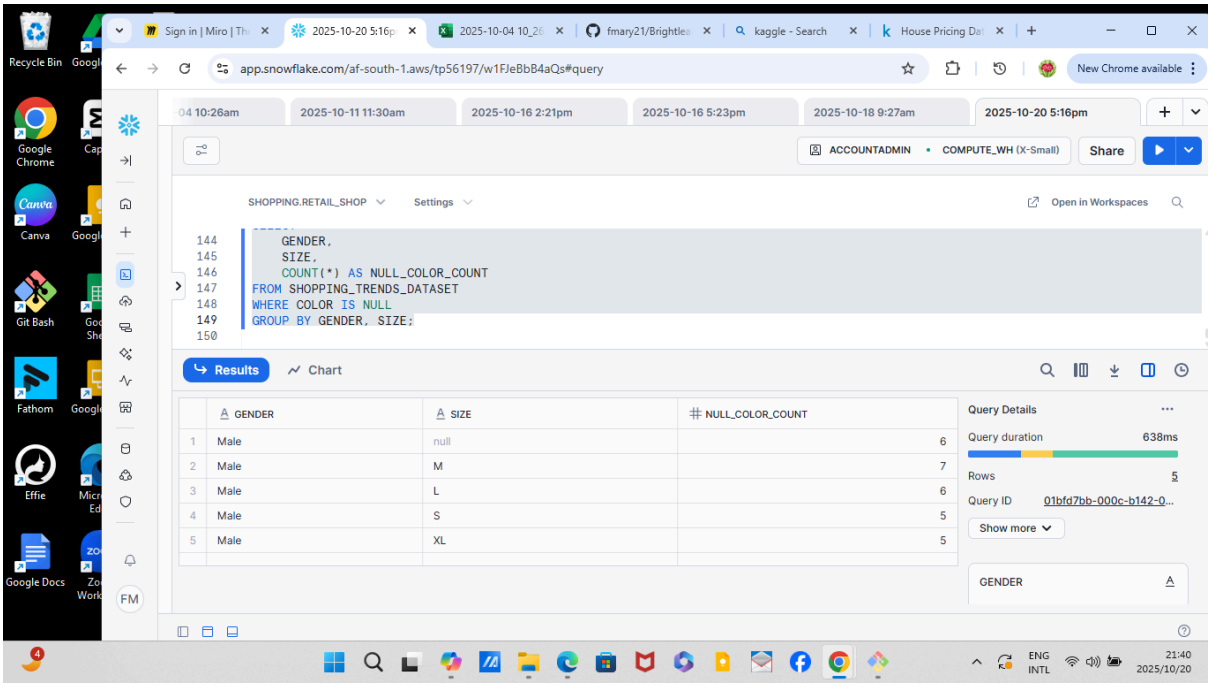
QUESTION 9



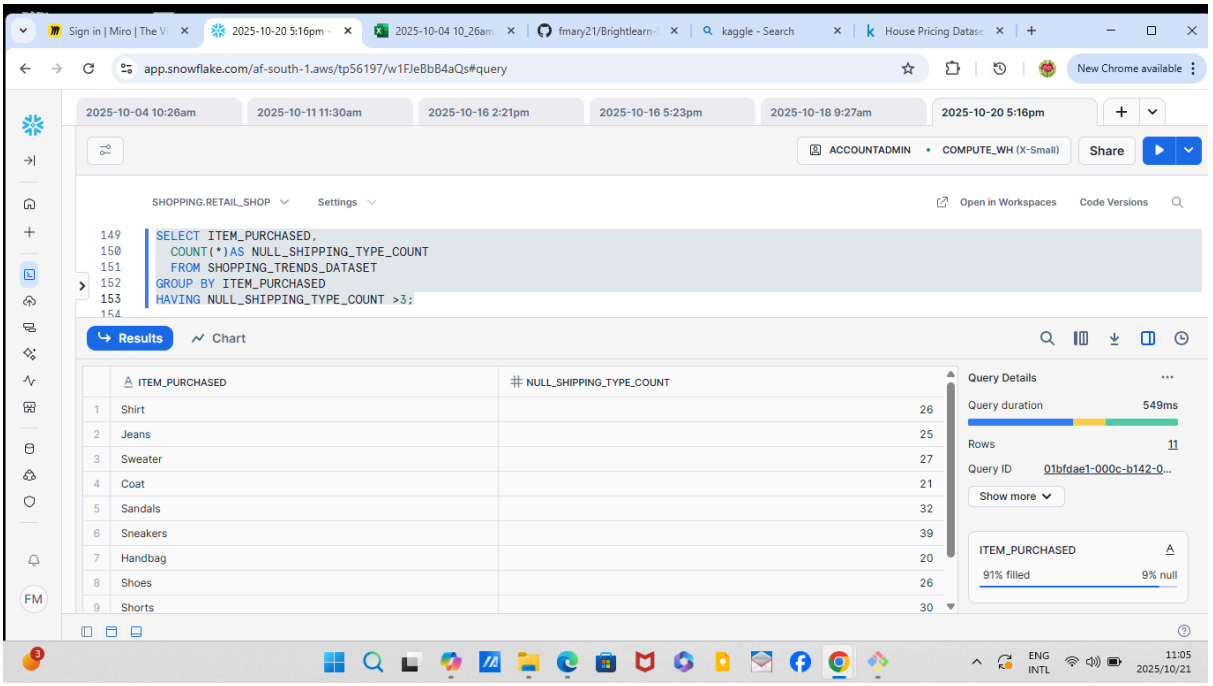
QUESTION 10



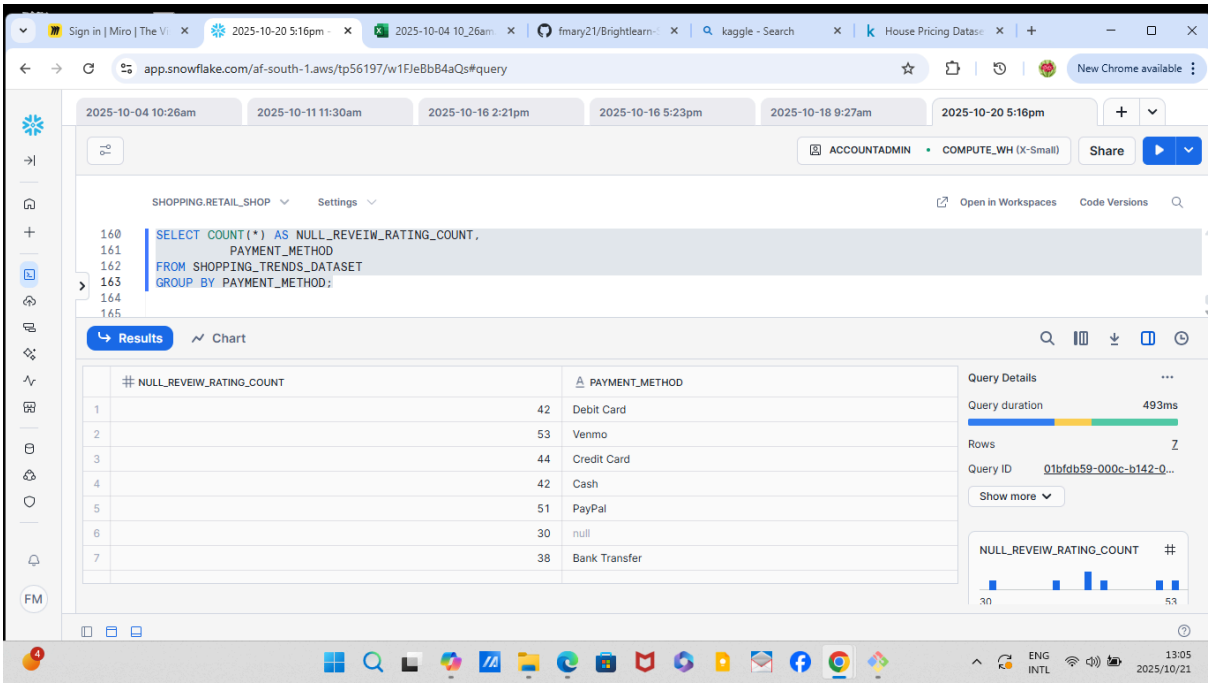
QUESTION 11 - FADZAI MAKANDA



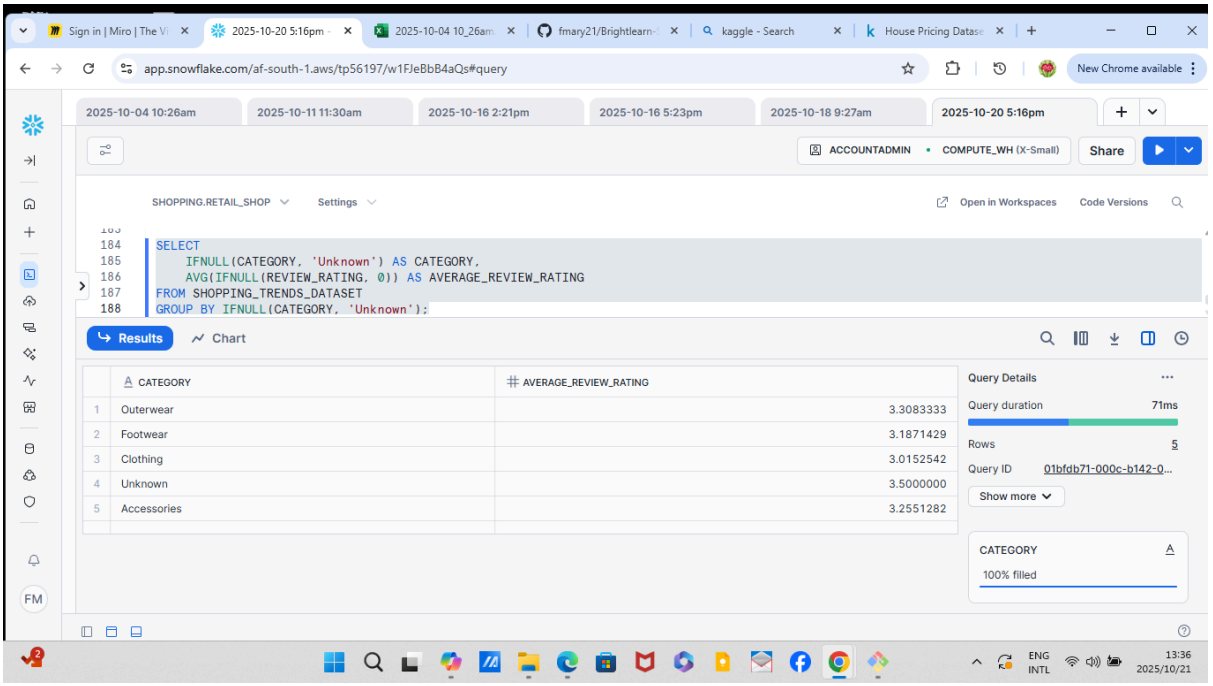
QUESTION 12



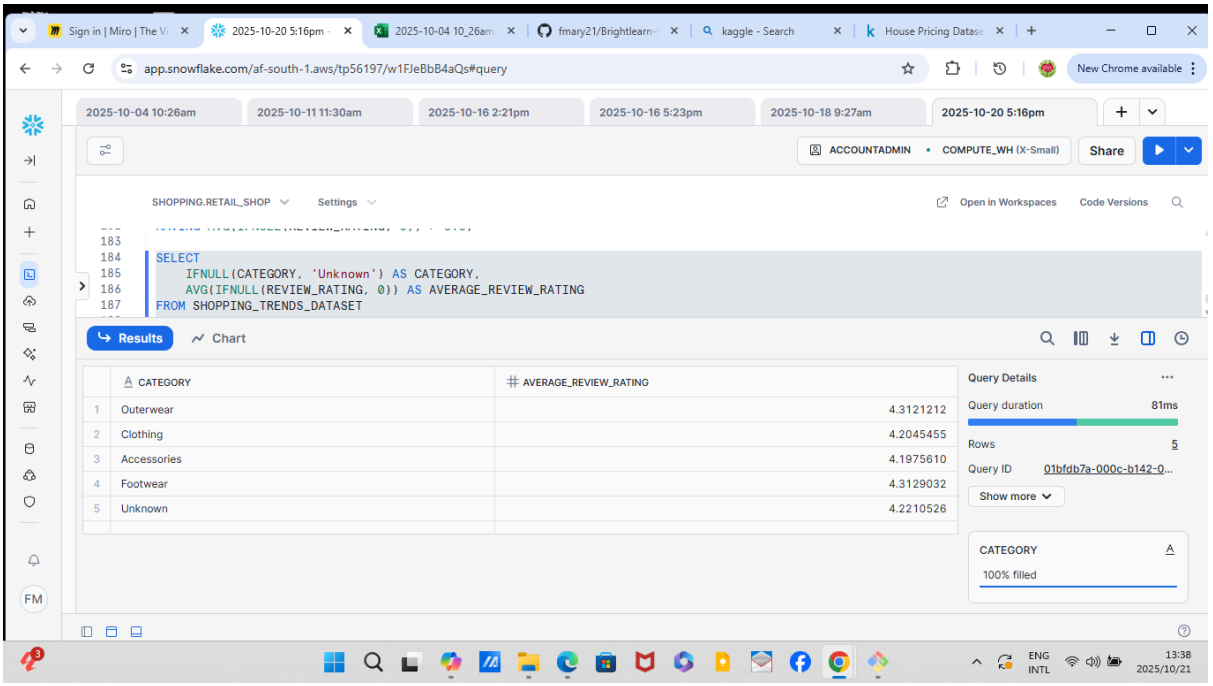
QUESTION 13 - FADZAI MAKANDA



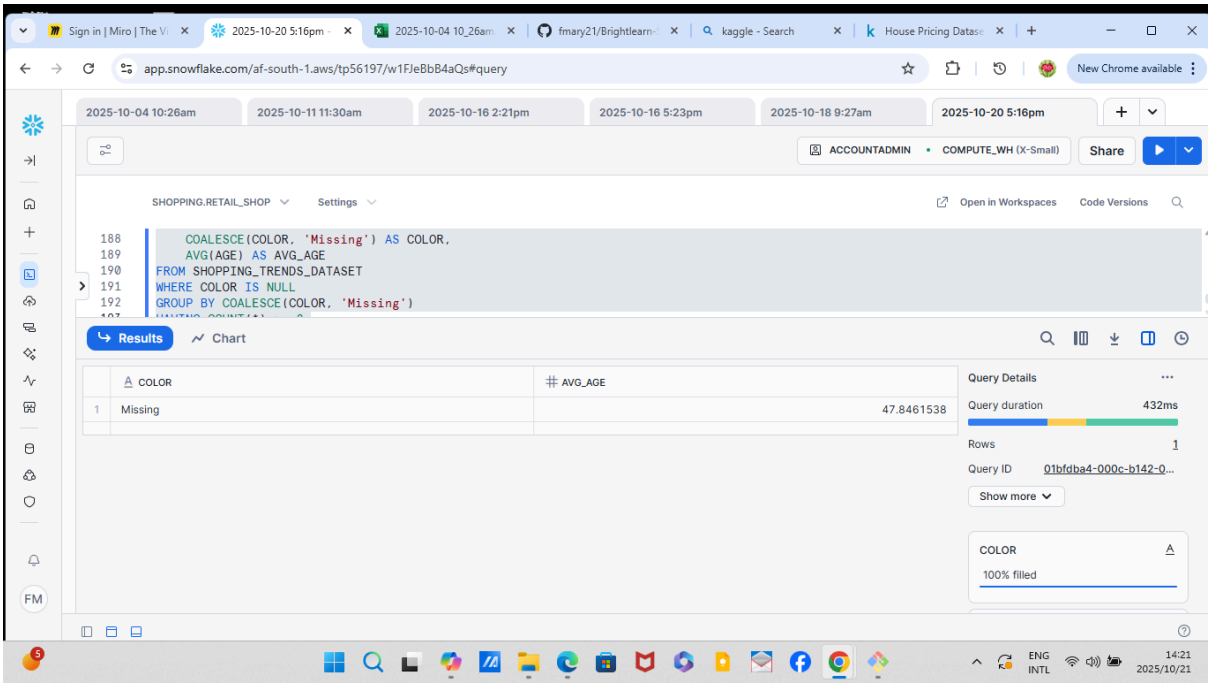
QUESTION 14



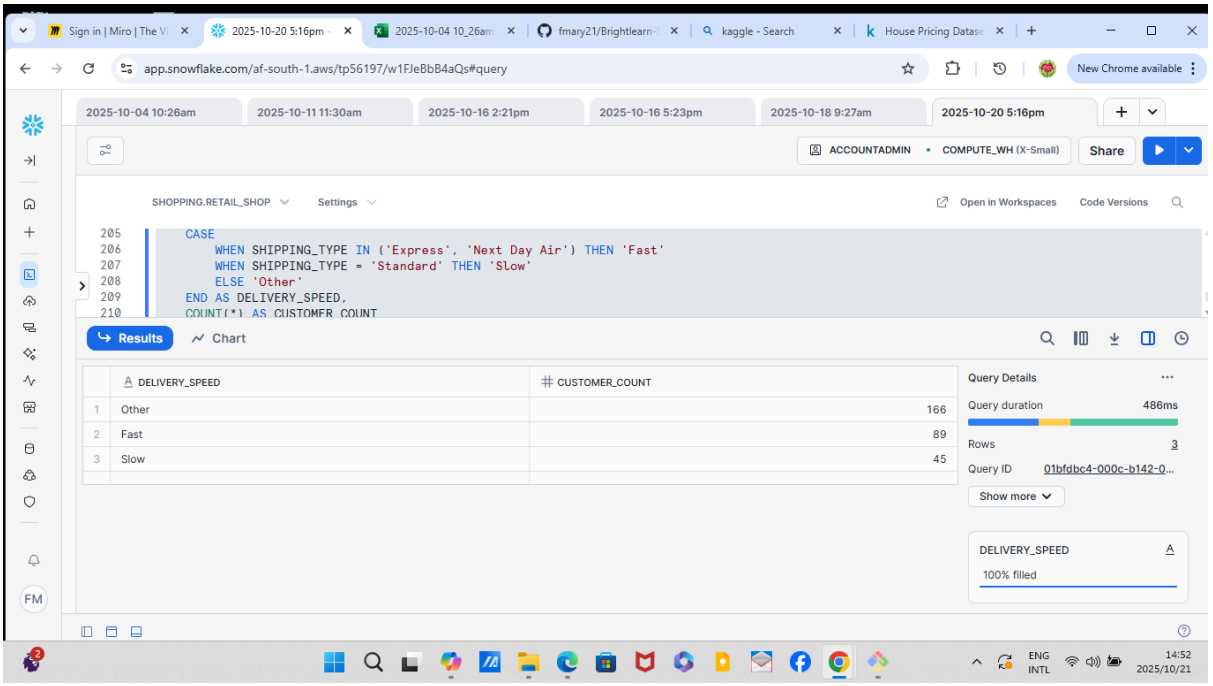
QUESTION 15



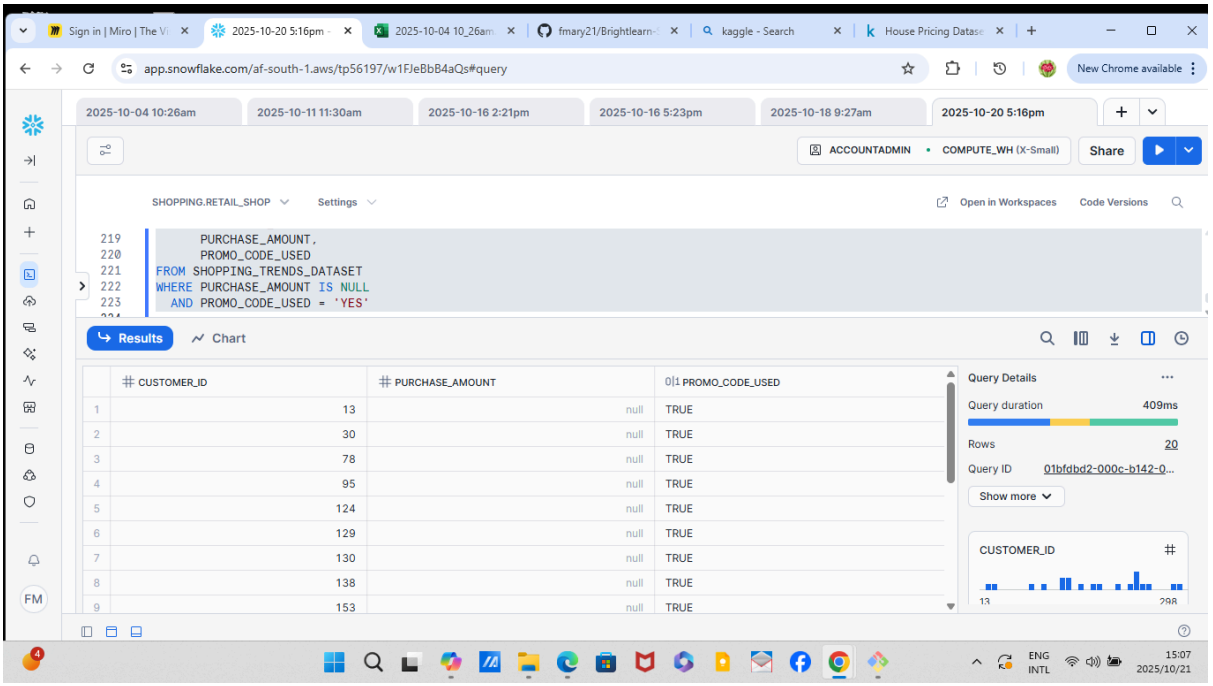
QUESTION 15



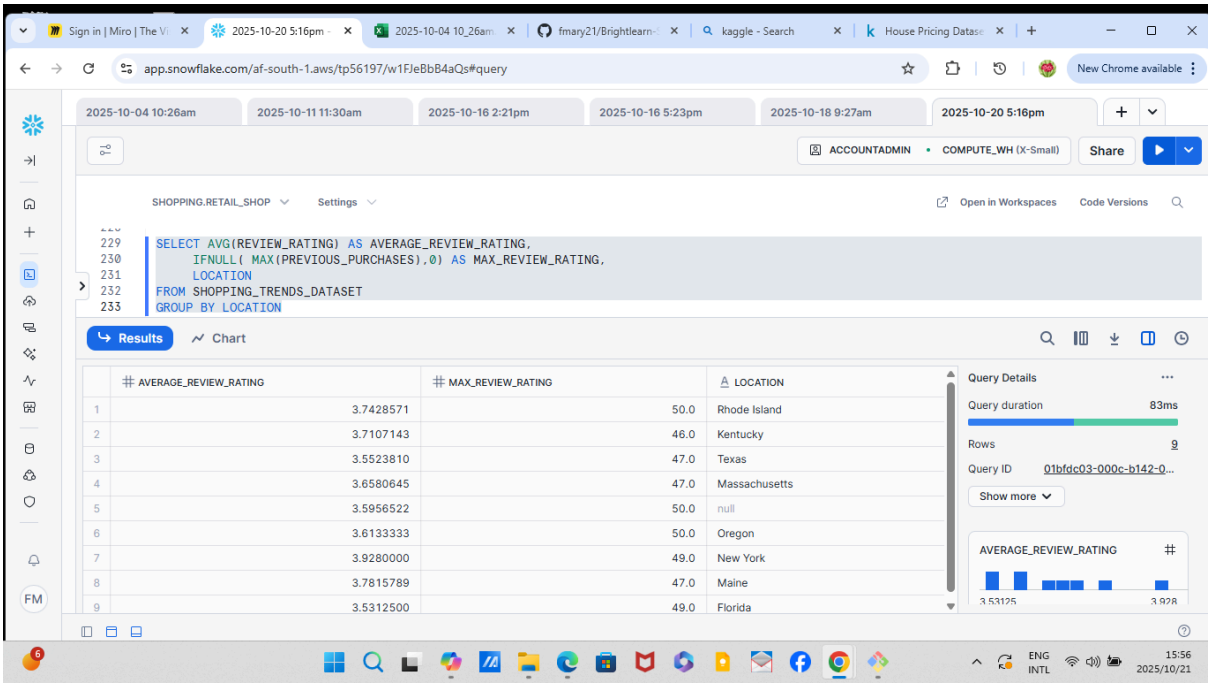
QUESTION 16 - FADZAI MAKANDA



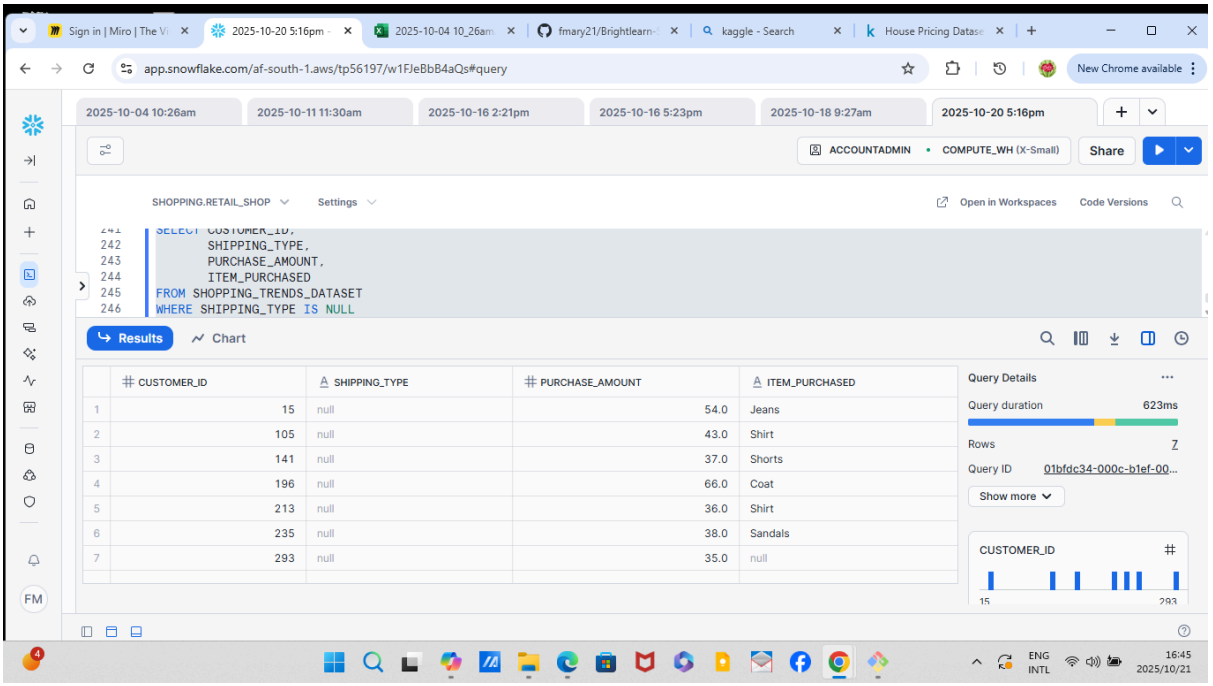
QUESTION 17 - FADZAI MAKANDA



QUESTION 18 - FADZAI MAKANDA



QUESTION 19



QUESTION 20 - FADZAI MAKANDA

CODE

```
SELECT*
FROM SHOPPING_TRENDS_DATASET;
```

```
---1. Find all records where Size is missing and the purchase_amount is greater than 50.
---Expected Columns: Customer ID, Size, purchase_amount, Item Purchased.

SELECT CUSTOMER_ID,
       ITEM_PURCHASED,
       PURCHASE_AMOUNT,
       SIZE
FROM shopping_trends_dataset
WHERE SIZE IS NULL
AND PURCHASE_AMOUNT >50;
```

```
---2. List the total number of purchases grouped by Season, treating NULL values as
'Unknown Season'.
---Expected Columns: Season, Total Purchases.

SELECT
    IFNULL(SEASON, 'Unknown Season') AS SEASON,
    COUNT(*) AS TOTAL_PURCHASES
```

```
FROM SHOPPING_TRENDS_DATASET
GROUP BY IFNULL(SEASON, 'Unknown Season');

-----------------------------------------------------------------------------------------------------------------

---3. Count how many customers used each Payment Method, treating NULLs as''Not
Provided'.
---Expected Columns: Payment Method, Customer Count.

SELECT COUNT(*)AS CUSTOMER_COUNT,
       IFNULL(PAYMENT_METHOD, 'NOT PROVIDED')AS PAYMENT_METHOD
FROM SHOPPING_TRENDS_DATASET
GROUP BY IFNULL(PAYMENT_METHOD, 'NOT PROVIDED');

-----------------------------------------------------------------------------------------------------------------

---4. Show customers where Promo Code Used is NULL and Review Rating is below 3.0.
---Expected Columns: Customer ID, Promo Code Used, Review Rating, Item Purchased

SELECT CUSTOMER_ID,
       ITEM_PURCHASED,
       REVIEW_RATING,
       PROMO_CODE_USED
FROM SHOPPING_TRENDS_DATASET
WHERE PROMO_CODE_USED IS NULL
  AND REVIEW_RATING <3.0
-----------------------------------------------------------------------------------------------------------------

--- 5. Group customers by Shipping
---Type, and return the average purchase_amount, treating missing values as 0.
---Expected Columns: Shipping Type, Average purchase_amount

SELECT
   SHIPPING_TYPE,
   AVG(IFNULL(PURCHASE_AMOUNT, 0)) AS AVERAGE_PURCHASE_AMOUNT
FROM SHOPPING_TRENDS_DATASET
GROUP BY SHIPPING_TYPE;

-----------------------------------------------------------------------------------------------------------------
---6. Display the number of purchases per Location only for those with more than 5
purchases and no NULL Payment Method.
---Expected Columns: Location, Total Purchases

SELECT COUNT(*)AS TOTAL_PURCHASES,
       LOCATION
FROM SHOPPING_TRENDS_DATASET
WHERE PAYMENT_METHOD  IS NOT NULL
GROUP BY LOCATION
```

```
HAVING COUNT(*) >5;

-----------------------------------------------------------------------------------------------------------------------

---7. Create a column Spender Category that classifies customers using CASE:
---'High' if amount > 80, 'Medium' if BETWEEN 50 AND 80,
---'Low' otherwise. Replace NULLs in purchase_amount with 0.
---Expected Columns: Customer ID, purchase_amount, Spender Category

SELECT CUSTOMER_ID,
 IFNULL(PURCHASE_AMOUNT,0) AS PURCHASE_AMOUNT,
 CASE WHEN PURCHASE_AMOUNT >80 THEN 'High'
      WHEN PURCHASE_AMOUNT BETWEEN 50 AND 80 THEN 'Medium'
      ELSE 'Low'
      END AS SPENDER_CATEGORY
FROM SHOPPING_TRENDS_DATASET;

-----------------------------------------------------------------------------------------------------------------------

---8. Find customers who have no Previous
---Purchases value but whose Color is not NULL.
---Expected Columns: Customer ID, Color, Previous Purchases.

SELECT CUSTOMER_ID,
       COLOR,
       PREVIOUS_PURCHASES
FROM SHOPPING_TRENDS_DATASET
WHERE  PREVIOUS_PURCHASES IS NOT NULL AND COLOR IS NOT NULL;

-----------------------------------------------------------------------------------------------------------------------
---9. Group records by Frequency of
---Purchases and show the total amount spent per group, treating NULL frequencies as
'Unknown'
---Expected Columns: Frequency of Purchases, Total purchase_amount

SELECT COUNT(PURCHASE_AMOUNT)AS TOTAL_PURCHASE_AMOUNT,
      IFNULL (FREQUENCY_OF_PURCHASES,'Unknown')AS
FREQUENCY_OF_PURCHASES
FROM SHOPPING_TRENDS_DATASET
GROUP BY  IFNULL (FREQUENCY_OF_PURCHASES,'Unknown')

-----------------------------------------------------------------------------------------------------------------------
-
---10.Display a list of all Category values with the number of times each was purchased,
--- excluding rows where Category is NULL.
---Expected Columns: Category, Total Purchases

SELECT
```

```
    CATEGORY,
    COUNT(*) AS TOTAL_PURCHASES
FROM SHOPPING_TRENDS_DATASET
WHERE CATEGORY IS NOT NULL
GROUP BY CATEGORY;

-------------------------------------------------------------------------------------------------------------------------
--

---11.Return the top 5 Locations with the highest total purchase_amount, replacing NULLs in
amount with 0.
---Expected Columns: Location, Total purchase_amount

SELECT
    IFNULL(LOCATION, 'Unknown') AS LOCATION,
    SUM(IFNULL(PURCHASE_AMOUNT, 0)) AS TOTAL_PURCHASE_AMOUNT
FROM SHOPPING_TRENDS_DATASET
GROUP BY IFNULL(LOCATION, 'Unknown')
ORDER BY TOTAL_PURCHASE_AMOUNT DESC
LIMIT 5;

-------------------------------------------------------------------------------------------------------------------------
---12.Group customers by Gender and Size, and count how many entries have a NULL
Color.
---Expected Columns: Gender, Size, Null Color Count

SELECT
    GENDER,
    SIZE,
    COUNT(*) AS NULL_COLOR_COUNT
FROM SHOPPING_TRENDS_DATASET
WHERE COLOR IS NULL
GROUP BY GENDER, SIZE;

-------------------------------------------------------------------------------------------------------------------------
-

---13.Identify all Item Purchased where more than 3 purchases had NULL Shipping Type.
---Expected Columns: Item Purchased, NULL Shipping Type Count

SELECT ITEM_PURCHASED,
  COUNT(*)AS NULL_SHIPPING_TYPE_COUNT
FROM SHOPPING_TRENDS_DATASET
GROUP BY ITEM_PURCHASED
HAVING NULL_SHIPPING_TYPE_COUNT >3;

-------------------------------------------------------------------------------------------------------------------------
--
```

---14.Show a count of how many customers per Payment Method have NULL Review Rating.
---Expected Columns: Payment Method, Missing Review Rating Count

```
SELECT COUNT(*) AS NULL_REVEIW_RATING_COUNT,
        PAYMENT_METHOD
FROM SHOPPING_TRENDS_DATASET
GROUP BY PAYMENT_METHOD;
```

---15.Group by Category and return the average Review Rating, replacing NULLs with 0,
---and filter only where average is greater than 3.5.
---Expected Columns: Category, Average Review Rating.

```
SELECT
   IFNULL(CATEGORY, 'Unknown') AS CATEGORY,
   AVG(IFNULL(REVIEW_RATING, 0)) AS AVERAGE_REVIEW_RATING
FROM SHOPPING_TRENDS_DATASET
WHERE REVIEW_RATING >3.5
GROUP BY IFNULL(CATEGORY, 'Unknown');
```

---16. List all Colors that are missing (NULL) in at least 2 rows and the average Age of those rows.
---Expected Columns: Color, Average Age

```
SELECT
   COALESCE(COLOR, 'Missing') AS COLOR,
   AVG(AGE) AS AVG_AGE
FROM SHOPPING_TRENDS_DATASET
WHERE COLOR IS NULL
GROUP BY COALESCE(COLOR, 'Missing')
HAVING COUNT(*) >= 2;
```

---17.Use CASE to create a column Delivery Speed: 'Fast' if Shipping Type is 'Express' or
---'Next Day Air', 'Slow' if 'Standard',
---'Other' for all else including NULL. Then count how many customers fall into each category.
---Expected Columns: Delivery Speed, Customer Count

```
SELECT
   CASE
      WHEN SHIPPING_TYPE IN ('Express', 'Next Day Air') THEN 'Fast'
      WHEN SHIPPING_TYPE = 'Standard' THEN 'Slow'
      ELSE 'Other'
   END AS DELIVERY_SPEED,
   COUNT(*) AS CUSTOMER_COUNT
FROM SHOPPING_TRENDS_DATASET
GROUP BY
   CASE
      WHEN SHIPPING_TYPE IN ('Express', 'Next Day Air') THEN 'Fast'
      WHEN SHIPPING_TYPE = 'Standard' THEN 'Slow'
      ELSE 'Other'
   END;

--------------------------------------------------------------------------------------------------------------------------------

---18.Find customers whose purchase_amount is NULL and whose Promo Code Used is 'Yes'.
---Expected Columns: Customer ID, purchase_amount, Promo Code Used

SELECT CUSTOMER_ID,
     PURCHASE_AMOUNT,
     PROMO_CODE_USED
FROM SHOPPING_TRENDS_DATASET
WHERE PURCHASE_AMOUNT IS NULL
  AND PROMO_CODE_USED = 'YES';

--------------------------------------------------------------------------------------------------------------------------------
---19.Group by Location and show the maximum Previous Purchases, replacing NULLs with 0, only where the average rating is above 4.0.
---Expected Columns: Location, Max Previous Purchases, Average Review Rating.

SELECT AVG(REVIEW_RATING) AS AVERAGE_REVIEW_RATING,
    IFNULL( MAX(PREVIOUS_PURCHASES),0) AS MAX_REVIEW_RATING,
    LOCATION
FROM SHOPPING_TRENDS_DATASET
GROUP BY LOCATION
HAVING  AVERAGE_REVIEW_RATING > 4.0

--------------------------------------------------------------------------------------------------------------------------------

---20.Show customers who have a NULL Shipping Type but made a purchase in the range of 30 to 70 USD.
---Expected Columns: Customer ID, Shipping Type, purchase_amount, Item Purchased
```

```
SELECT CUSTOMER_ID,
      SHIPPING_TYPE,
      PURCHASE_AMOUNT,
      ITEM_PURCHASED
FROM SHOPPING_TRENDS_DATASET
WHERE SHIPPING_TYPE IS NULL
  AND PURCHASE_AMOUNT BETWEEN 30 AND 70;
```