README: Amazon Bestselling Products Analysis using S3 and Amazon QuickSight

Project Overview

This project demonstrates how to leverage **Amazon S3** to store datasets and **Amazon QuickSight** for data visualization and analysis. Specifically, I uploaded a dataset of Amazon bestselling products to an S3 bucket, accessed the dataset using Amazon QuickSight, and created insightful visualizations such as brand-based and category-based analysis. Additionally, a chat-based interface was used to interact with the data in real-time, allowing for dynamic queries regarding product availability and brand categorization.

Key Components

- **Amazon S3 Bucket**: A secure and scalable storage solution where the dataset was stored.
- **Amazon QuickSight**: A business intelligence (BI) tool used to visualize the dataset and generate reports.
- **Chat-based Interface**: A feature within QuickSight that enables users to interact with the data using natural language queries.

Steps Involved

Step 1: Create an S3 Bucket and Upload Dataset

1. **Create an S3 Bucket**:

    1. Navigate to the AWS Management Console and create a new S3 bucket.
    2. Set appropriate permissions for access, ensuring the dataset can be accessed by Amazon QuickSight.
    3. Bucket Name: <your-bucket-name>

2. **Upload the Dataset**:

    1. Upload the dataset file containing Amazon bestselling products (e.g., amazon_bestseller_data.csv) to the created S3 bucket.
    2. Confirm that the dataset is correctly uploaded and accessible.

Step 2: Access the Dataset from Amazon QuickSight

1. **Set Up Amazon QuickSight**:

    1. In the AWS Management Console, navigate to **QuickSight**.
    2. Ensure you have enabled Amazon QuickSight with access to the S3 bucket.

2. **Connect S3 to QuickSight**:

    1. Go to **Datasets** in QuickSight and choose to create a new dataset.
    2. Select **S3** as the source and provide the path to the S3 bucket where the dataset is stored.
    3. Select or manually define the schema if required.
3. **Create Data Visualizations**:

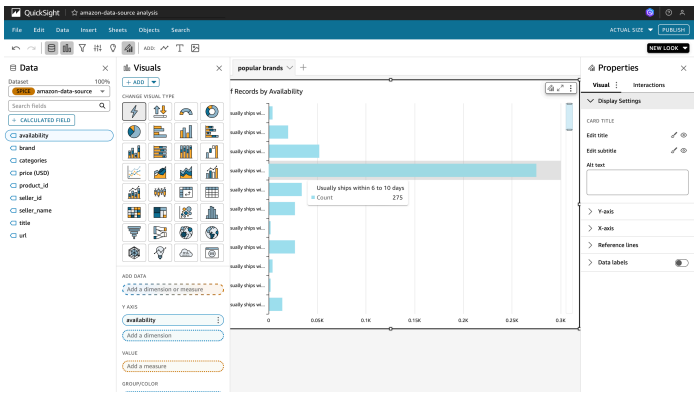
    1. Use QuickSight's drag-and-drop interface to create various data visualizations.
    2. Key visualizations include:
        - **Brand Categorization**: Display bestselling products by brand using bar charts.
        - **Availability Status**: Show product availability in different categories using pie charts and heat maps.

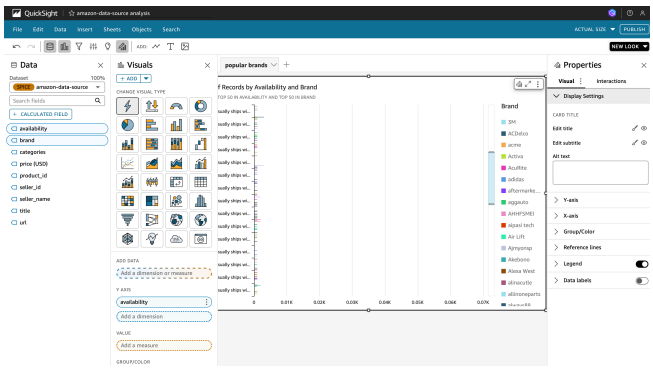
Step 3: Implement Chat-Based Analysis

1. **Enable Chat-Based Interface**:

    Amazon QuickSight includes a feature to allow users to interact with the dataset using natural language queries.
2. **Explore the Dataset with Queries**:

You can now use the chat interface to explore data interactively and get instant visualizations based on your input.





How to Run

1. Log in to the AWS Console and create an S3 bucket as described above.
2. Upload the dataset to the bucket and ensure it's accessible.
3. Access Amazon QuickSight, connect to the dataset stored in S3, and create visualizations based on your needs.
4. Use the chat-based feature in QuickSight to explore the dataset interactively.

Useful Resources

- Amazon S3 Documentation
- Amazon QuickSight Documentation