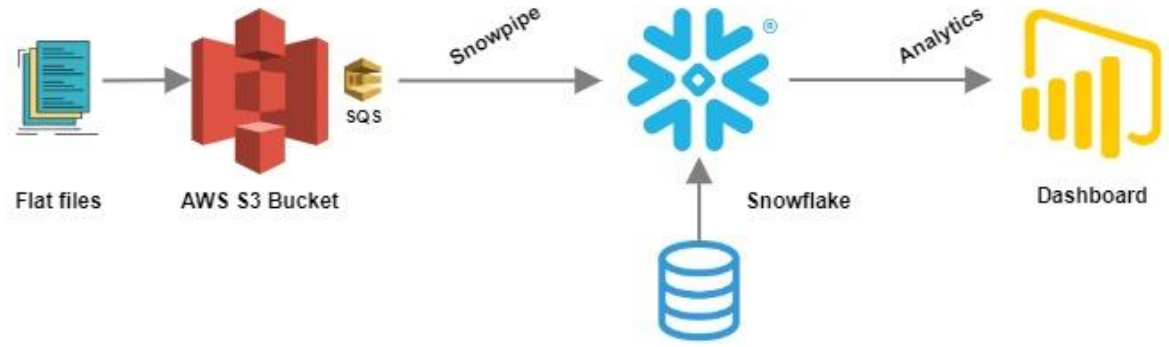
Data pipeline and Forecasting of stock price



Part 1: Creating Integration Objects(Snowflake External Stage).
The first step is to create an integration object in Snowflake that will allow us to easily fetch data from our S3 bucket into Snowflake. As well as access all information and store credentials from Snowflake to AWS. The result from this SQL script below will provide information on how to connect our Snowflake.

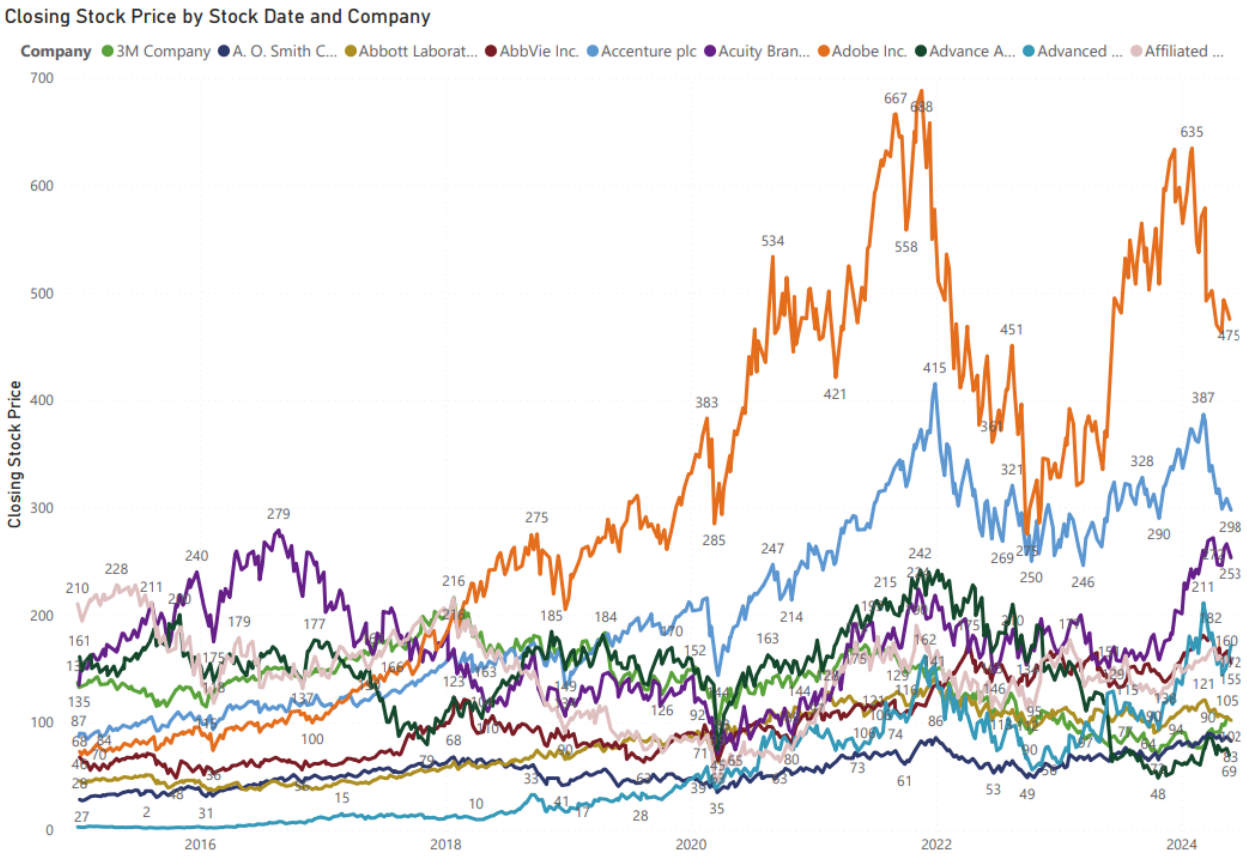
```
CREATE STAGE my_s3_stage
  STORAGE_INTEGRATION = s3_int
  URL = 's3://a20511671firstbucket/'
  FILE_FORMAT = my_csv_format;
```

```
COPY INTO ITEM
FROM @my_s3_stage
PATTERN='.*Item.*.csv';
```

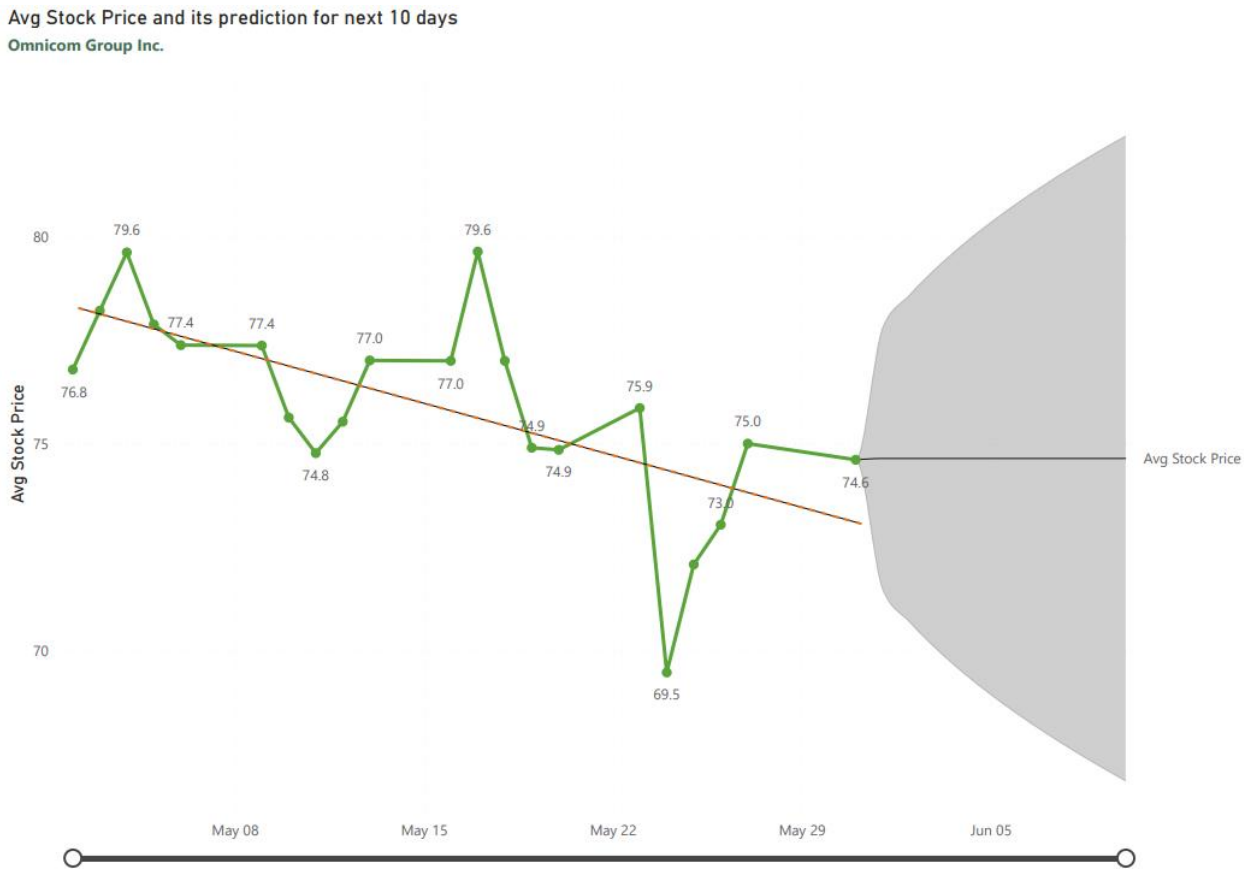
Part 2: Setting up a Snowpipe with SQS(Simple Queue Service from AWS).
Snowpipe automatically fetches data once it is available in an AWS S3 bucket. Once, the event notification is set up in AWS S3 it automatically triggers the Snowpipe to load data from files as soon as they're available into a stage in Snowflake.

Event Notification successfully created in S3 bucket to trigger Snowpipe to automatically load data into Snowflake once it is available. Make sure that you select the Notification type you prefer either for the creation or deletion of objects. Ensure that the SQS Queue is the Destination type and enter the SQS Queue notification _channel code as seen below in the destination.

Part 3: Power BI Visualization:
The analytical part of this project is to analyze the data by connecting Snowflake to Power BI (Direct Connection) to give our end users a website experience with a visualization tool.



The above image shows the stock price pattern for each company through out the year of data.



Next 10 days of stock price forecasting with time series in line chart.

Skills Used:
- **Amazon S3** for data storage.
- **Snowflake** for data warehousing and transformation.
- **Power BI** to analyze, format tables, and data visualization.

TABLE: FIRST_DB.FIRST_SCHEMA.ITEM

Ref: [Guides - Snowflake Documentation]