



# **SKANNER**

## **Year 4 Project User Manual**

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**Course:** CASE4

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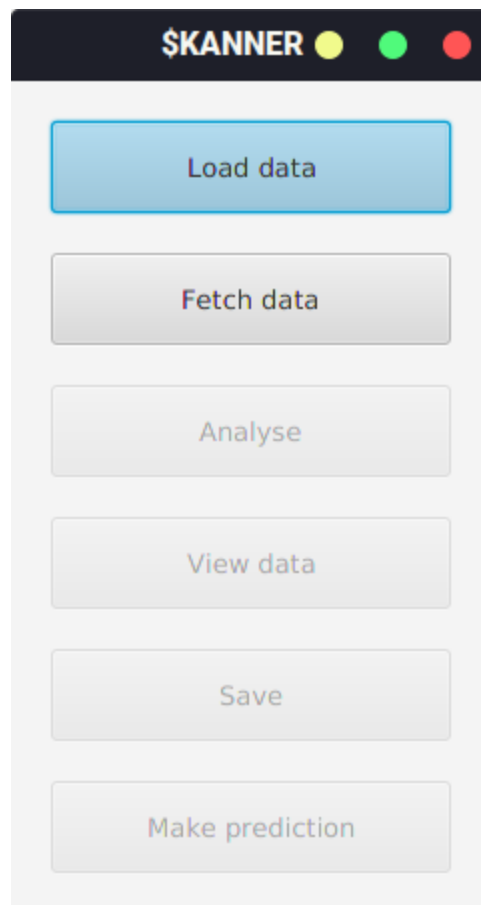
# 1. User Guide

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## Step 1. Open Skanner.

The UI is simplistic and easy to use, the first thing a user sees when the application launches is this minimalistic menu window with only two available to click buttons.

- The first one, “Load data” is used to load previously saved into a file data.
- However, if a user doesn’t have or want to load data from a file, alternatively they can fetch new data from the web by clicking on the “Fetch data” button.

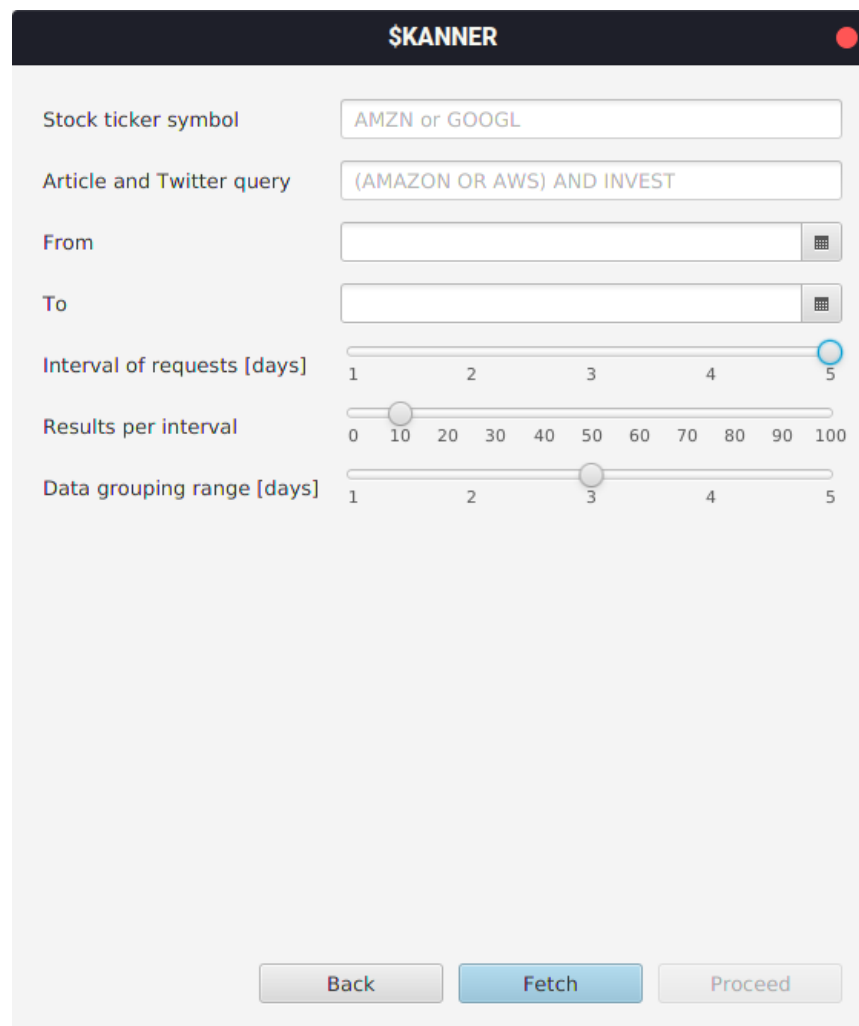


*Fig 1. Initial menu window.*

## Step 2. Obtain data.

A new window shows up. This one contains a form which will structure our query.

- The first field is for a stock ticker symbol.
- The Second, is a query string which is used to search for articles and tweets.
- The next two is a date range within which we are interested in getting data for.
- Next is a slider with the range from 1 to 5. This one specify to how many requests Skanner makes while fetching for data.
  - e.g. 30 days of historical data with interval as 5, we get  $30/5 = 6$  requests made.
- The second slider is to tell what's the maximum results do we want per requests. Let's say 50, then we potentially might get  $6 * 50 = 300$  articles and 300 tweets.
- Last slider is to tell Skanner how many consecutive days should analysis of articles and tweets influence our dataset. If 3, then articles from today are going to be included in data record (instance) for the next consecutive days.
- Once filled out, click fetch.



The screenshot shows a window titled "\$KANNER" with a red close button. The form contains the following fields and controls:

- Stock ticker symbol:** A text input field containing "AMZN or GOOGL".
- Article and Twitter query:** A text input field containing "(AMAZON OR AWS) AND INVEST".
- From:** A date picker input field.
- To:** A date picker input field.
- Interval of requests [days]:** A slider ranging from 1 to 5, with the value set to 5.
- Results per interval:** A slider ranging from 0 to 100, with the value set to 10.
- Data grouping range [days]:** A slider ranging from 1 to 5, with the value set to 3.

At the bottom of the window, there are three buttons: "Back", "Fetch", and "Proceed".

Fig 2. Fetcher window not filled out.

Once services had finished obtaining data, the “Proceed” button enables and can be clicked. It brings a user back to the menu window.

The screenshot shows the \$KANNER application window. At the top, the title bar says "\$KANNER" with a red close button. Below the title bar, there are several input fields and sliders. The "Stock ticker symbol" field contains "AMZN". The "Article and Twitter query" field contains "AMAZON OR AWS". The "From" date field contains "09/05/2019" and the "To" date field contains "24/05/2019". There are three sliders: "Interval of requests [days]" set to 5, "Results per interval" set to 10, and "Data grouping range [days]" set to 3. Below these, there are three status messages, each with a blue checkmark icon and the word "Done" below it. The first message says "Found 30 articles in total." The second message says "AMZN quotas obtained. [ €1,804.20 ][ €1,862.91 ][ €1,917.51 ]". The third message says "Found 10 tweets in total." At the bottom of the window, there are three buttons: "Back", "Cancel", and "Proceed". The "Proceed" button is highlighted with a blue border.

**\$KANNER**

Stock ticker symbol: AMZN

Article and Twitter query: AMAZON OR AWS

From: 09/05/2019

To: 24/05/2019

Interval of requests [days]: 1 2 3 4 5

Results per interval: 0 10 20 30 40 50 60 70 80 90 100

Data grouping range [days]: 1 2 3 4 5

✓ Done Found 30 articles in total.

✓ Done AMZN quotas obtained. [ €1,804.20 ][ €1,862.91 ][ €1,917.51 ]

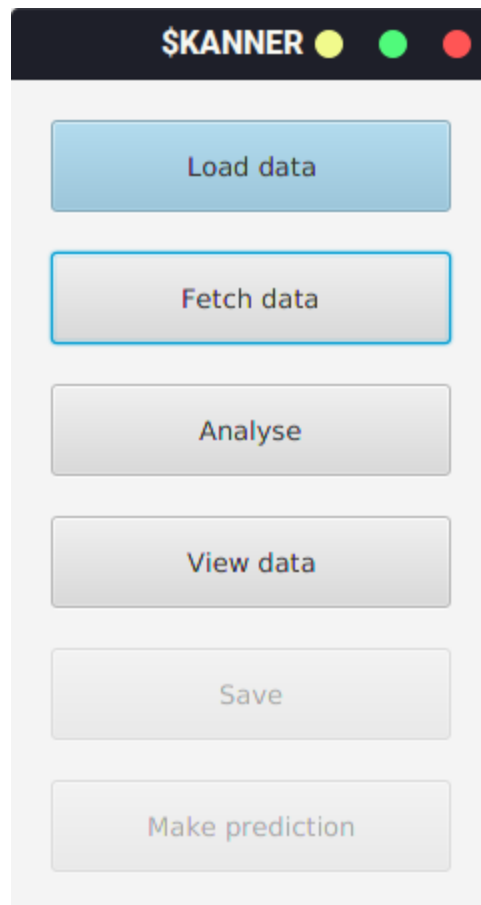
✓ Done Found 10 tweets in total.

Back Cancel Proceed

*Fig 3. Data obtained successfully in the fetcher window.*

### Step 3. Analyze data.

Additional buttons have been enabled. Since the data was obtained we can now view it and analyze it. Let's click the Analyze button.



*Fig 4. Menu window after data obtained.*

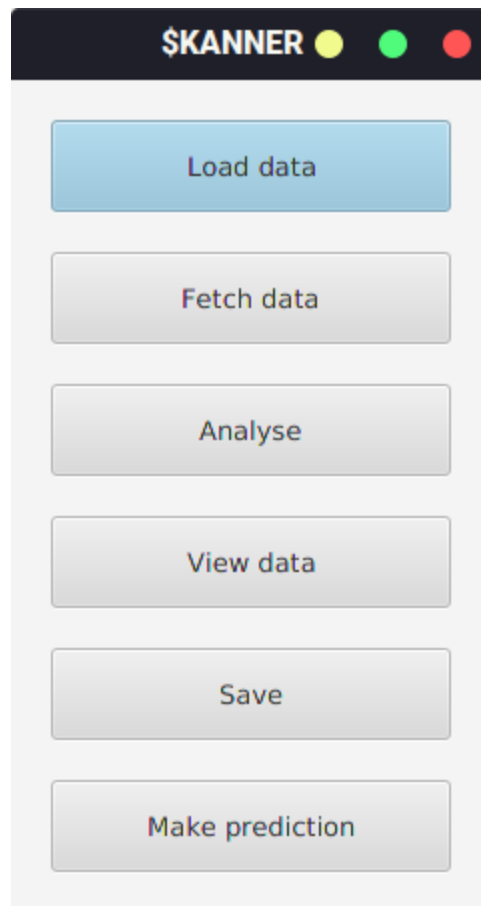
Analysis starts and progress is shown in a separate window. Once finished the 'cancel' button changes to 'proceed' and this brings the user back to the menu window.



*Fig 5. Sentiment analysis in progress.*

#### Step 4. View data and analysis.

Additional buttons were enabled, because our dataset had been generated and analysis completed. Let's click on 'View data' button to have a look what we've got so far.



*Fig 6. Menu window after analysis completed.*

The first tab is the feed of Articles.

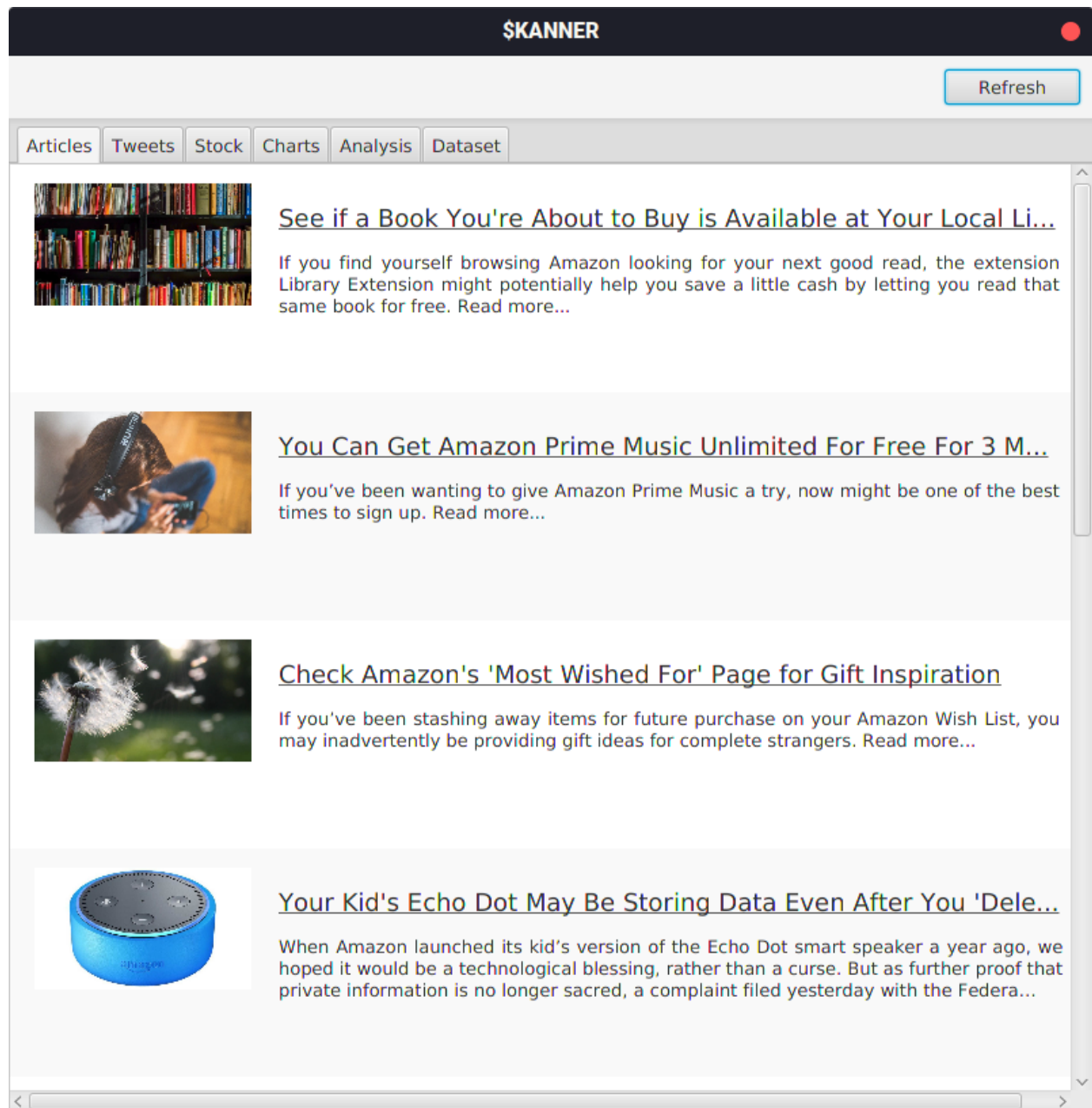


Fig 7. Article feed view in the View window.



The second tab is the feed of obtained Tweets.

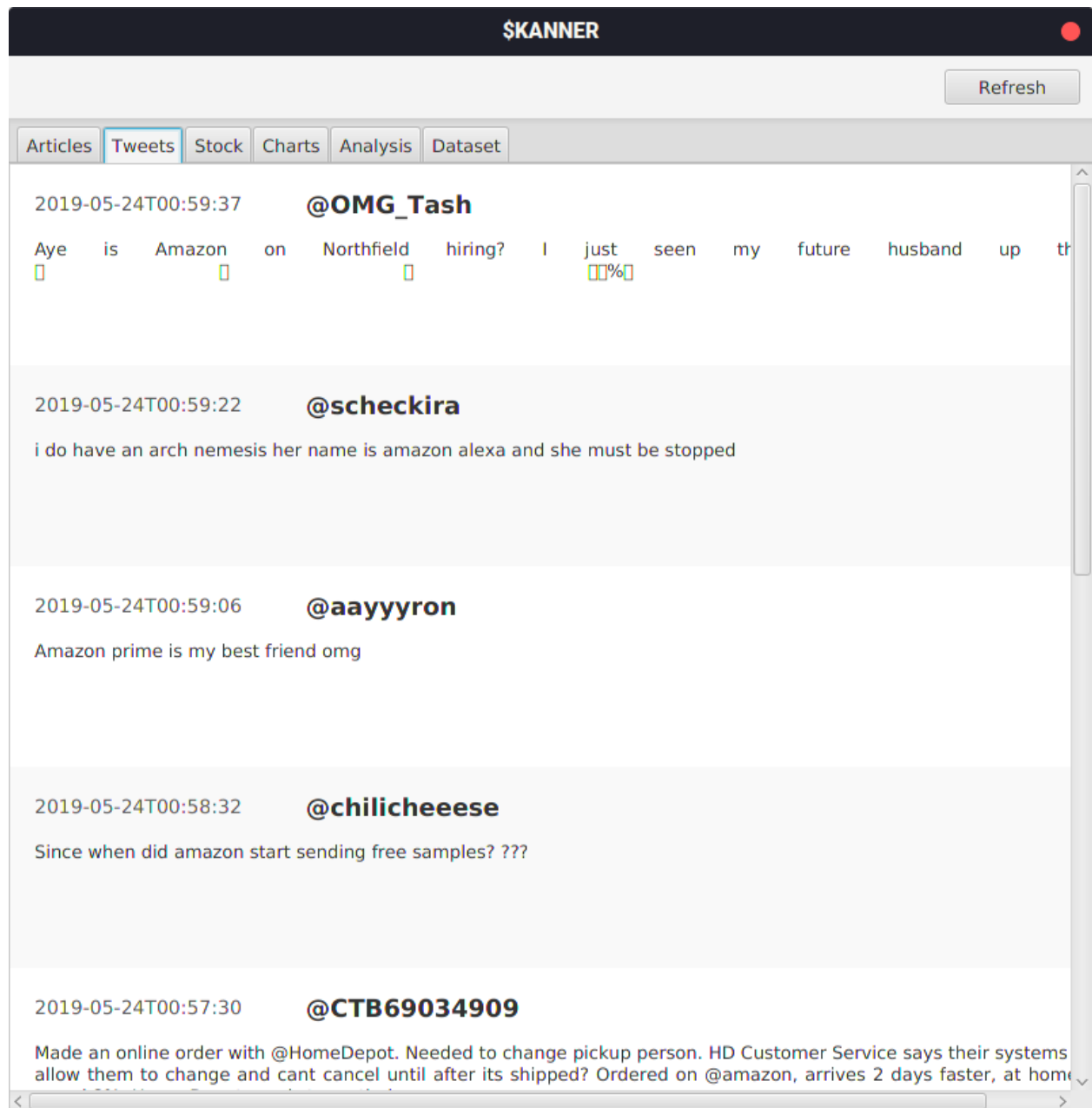


Fig 8. Tweet feed view in the View window.

The third tab shows us stock quotes and prices.

[illegible]

Fig 9. Table of historical quotes of the stock.

The fourth tab shows the chart line of the close price of the stock.

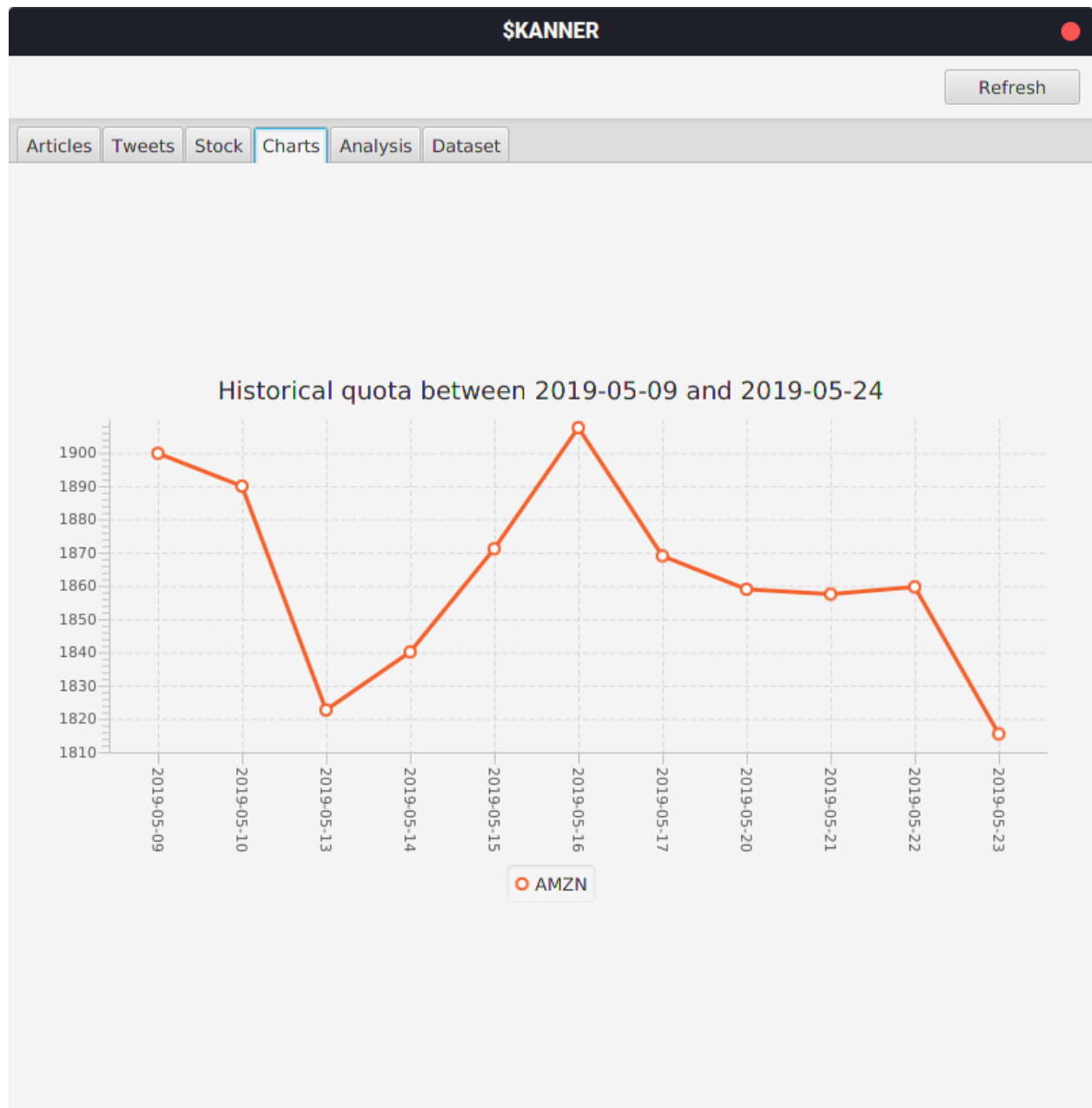


Fig 10. Chart line of the historical quotes of the stock.

The next tab is contains the sentiment analysis results for articles and tweets.

| \$KANNER   |             |           |            |          |         |          |            |         |
|------------|-------------|-----------|------------|----------|---------|----------|------------|---------|
|            |             |           |            |          |         |          |            | Refresh |
| Articles   | Tweets      | Stock     | Charts     | Analysis | Dataset |          |            |         |
| DateTime   | Article/... | Sentim... | Very ne... | Negative | Neutral | Positive | Very po... |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 11         | 38       | 26      | 18       | 7          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 6          | 36       | 37      | 18       | 3          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 14         | 37       | 33      | 14       | 3          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 10         | 63       | 22      | 3        | 1          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 7          | 41       | 34      | 15       | 3          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 10         | 54       | 24      | 10       | 2          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 16         | 52       | 23      | 6        | 2          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 11         | 36       | 39      | 12       | 2          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 5          | 26       | 40      | 24       | 6          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 9          | 40       | 31      | 14       | 5          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 7          | 41       | 34      | 15       | 3          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 9          | 44       | 37      | 8        | 2          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 16         | 52       | 23      | 6        | 2          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 8          | 51       | 22      | 14       | 4          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 4          | 15       | 48      | 27       | 5          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 5          | 19       | 47      | 20       | 9          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 13         | 41       | 43      | 2        | 1          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 12         | 40       | 45      | 2        | 1          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 6          | 29       | 40      | 22       | 3          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 10         | 35       | 43      | 9        | 3          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 9          | 50       | 33      | 7        | 1          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 3          | 17       | 36      | 32       | 13         |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 10         | 32       | 43      | 13       | 2          |         |
| 2019-05... | ARTICLE...  | POSITIVE  | 4          | 24       | 24      | 40       | 7          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 11         | 57       | 24      | 7        | 2          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 13         | 31       | 32      | 21       | 3          |         |
| 2019-05... | ARTICLE...  | NEGATIVE  | 12         | 37       | 32      | 16       | 3          |         |
| 2019-05... | ARTICLE...  | NEUTRAL   | 8          | 31       | 55      | 5        | 1          |         |

Fig 11.. Sentiment Analysis results.

And the last tab is the generated dataset, which is used for prediction of the price change for the next date.

[illegible]

Fig 12. Dataset.

## Step 5. Viewing prediction results.

In the menu window we can finally click on “Make Prediction” button which brings us to the final window with results.

We have a chart line that contains historical data and the prediction series.

At the top we have a predicted price for the interested stock.

- Change in price shown in the percentage.
- The predicted price of the stock.
- And the third value is the amount by which the price changed.

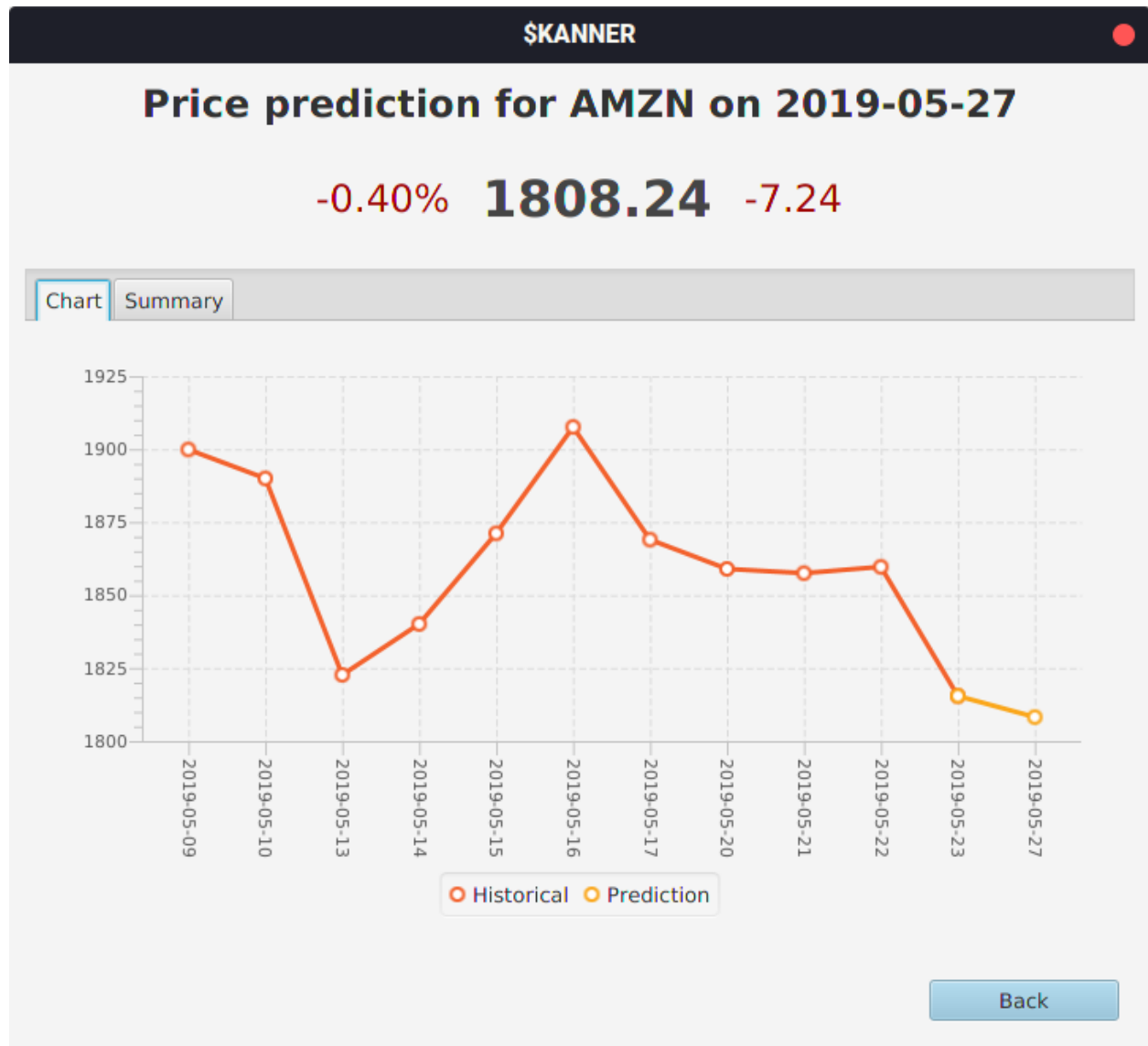


Fig 13. Prediction results with the chart line.

In the summary tab we can see the dump of the Linear Regression classifier and statistics.

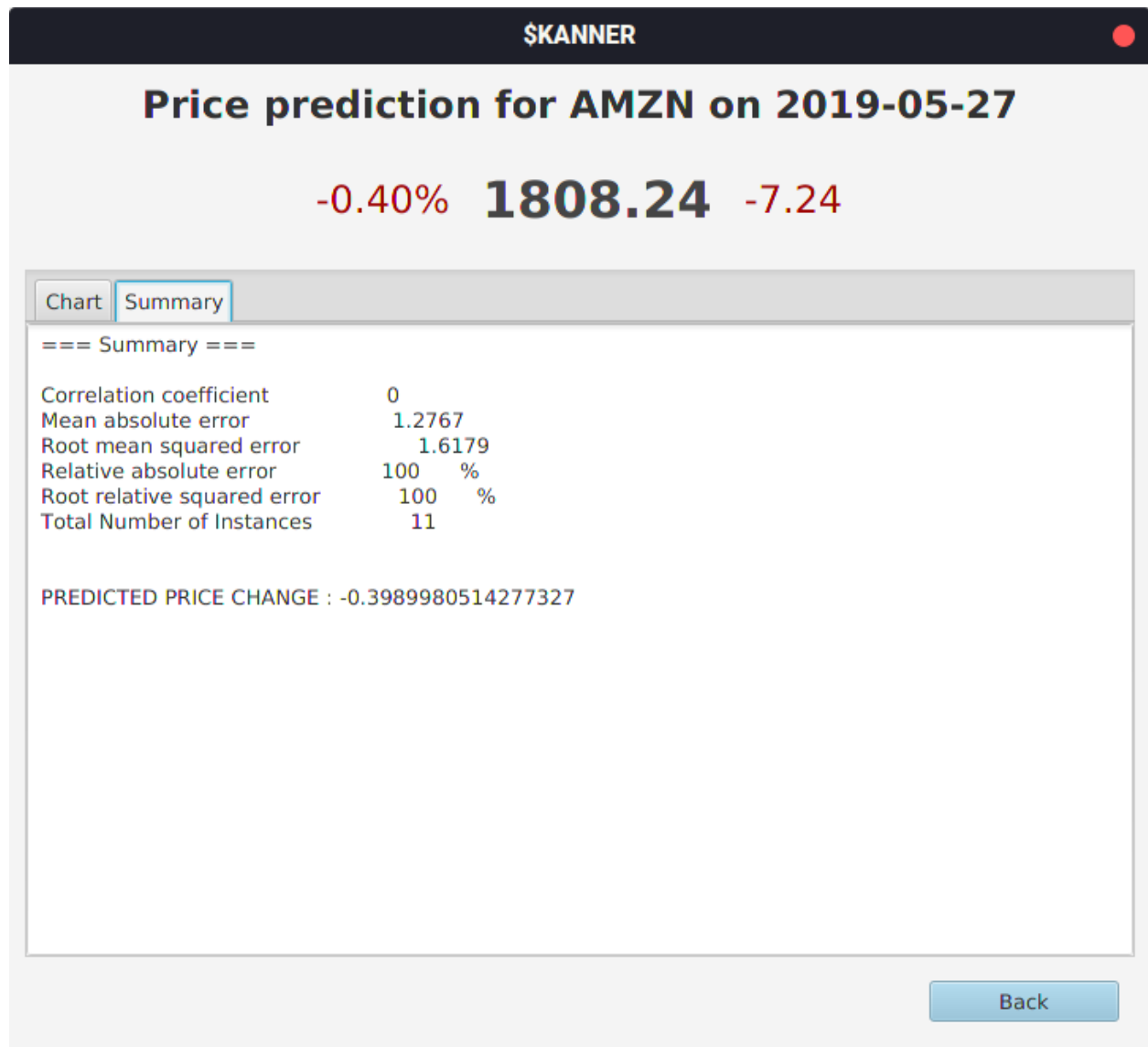


Fig 13. Prediction results with a summary of the Linear Regression.