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TWEET TO EMOJI
tweettoemoji.net

FINAL DELIVERABLE

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Software Development Practice

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User Manual

Tweettoemoji.net is a web application which allows users to convert tweets into emoji representations by the contributions of its users. It is a crowd-based platform which collects emoji and phrase pairs from the users and uses these pairs for converting.

This is a single page web application, which consists of only a homepage to cover its whole functionality. The user interface is designed in a responsive way, which is suitable for both mobile and desktop web browsers.

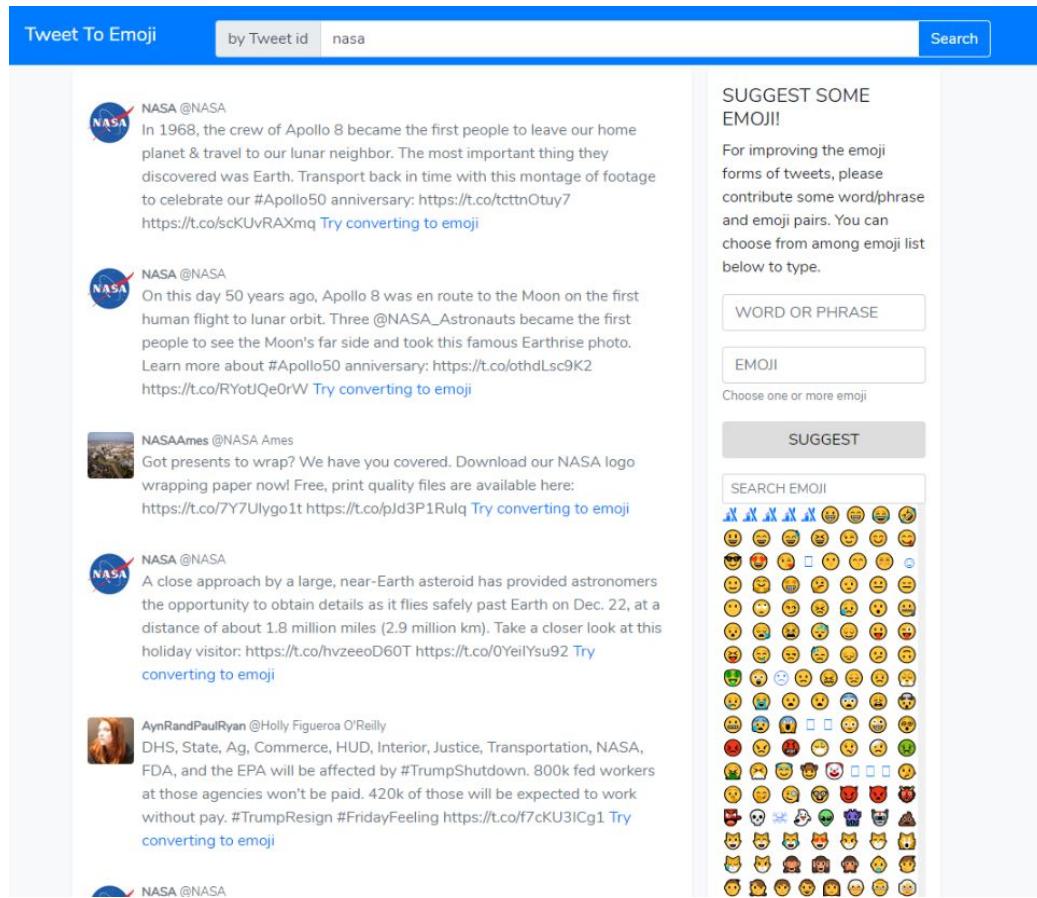


Figure 1 - A screenshot from the homepage from a desktop web browser

Our homepage consists of three main parts which are search area, tweet feed, and suggestion area. The search area is placed at the top of the page, which allows users to find tweets by searching. The tweet feed is placed on the left-hand side of the page and covers the major part of it, which lists the search result and shows conversions. The suggestion area is placed on the right-hand side of the page, which allows users to suggest emoji and phrase pairs to the system.

The Search Area



Figure 2 - A close-up view of the search area

The search area consists of three main parts which are “by Tweet id” button (left), search box (middle), and “Search” button (right).

The “by Tweet id” button allows users to get a specific tweet by its id.

The search box is a text input field which allows users to type desired keywords and queries. It uses the Twitter API’s original search query format.

The “Search” button lists the tweets according to the search box content. Alternatively, the “Enter” key on the keyboard can be used instead of clicking this button.

The Tweet Feed

NASA @NASA
In 1968, the crew of Apollo 8 became the first people to leave our home planet & travel to our lunar neighbor. The most important thing they discovered was Earth. Transport back in time with this montage of footage to celebrate our #Apollo50 anniversary: <https://t.co/tcttnOtuy7> <https://t.co/scKUvRAXmq> Try converting to emoji

NASA @NASA
On this day 50 years ago, Apollo 8 was en route to the Moon on the first human flight to lunar orbit. Three @NASA_Astronauts became the first people to see the Moon's far side and took this famous Earthrise photo. Learn more about #Apollo50 anniversary: <https://t.co/othdLsc9K2> <https://t.co/RYotJQe0rW> Try converting to emoji

Figure 3 - A close-up view of the tweet feed

The tweet feed shows related tweets according to search. Each list item displays the profile picture, name and Twitter name of the user and the full content of a tweet as well as a “Try converting to emoji” button. This button converts the related tweet into emoji form. When clicked it disappears and converted tweet is shown.

NASA @NASA
On 50 Apollo 8 was en route to on the to

- this ✓ ✗
- day ✓ ✗
- years ✓ ✗
- ago, ✓ ✗ Show alternatives
- Moon ✓ ✗
- first ✓ ✗
- human ✓ ✗
- flight ✓ ✗
- lunar ✓ ✗
- orbit. ✓ ✗
- the Moon ✓ ✗

Three @NASA_Astronauts became the people to see the Moon's far side and took famous Earthrise

- first ✓ ✗
- this ✓ ✗
- photo. ✓ ✗

Learn more about #Apollo50 anniversary: <https://t.co/othdLsc9K2>
<https://t.co/RYotJQe0rW>

[Show the original tweet](#)

Figure 4 - A converted tweet example

A converted tweet lists each sentence in the tweet in converted form. Each sentence lists their emoji phrase pairs inside. The most voted pairs emerge in the list if there is an alternative. At the bottom of it, there is a “Show the original tweet” button which reverts conversion and shows the original tweet.

Each pair comes with three actions which are ✓ (Like), ✗ (Wrong) and “Show alternatives” buttons. The like and wrong buttons vote the pair up or down. When one

of them is clicked, both disappear and vote is saved. The show alternatives button emerges if there is one or more alternative to the phrase. When clicked, it disappears and lists the alternatives with voting actions.

The Suggestion Area

SUGGEST SOME EMOJI!

For improving the emoji forms of tweets, please contribute some word/phrase and emoji pairs. You can choose from among emoji list below to type.

WORD OR PHRASE

EMOJI

Choose one or more emoji

SUGGEST

SEARCH EMOJI



The suggestion area is a form which allows users to suggest alternatives to phrases. Use fills the “WORD OR PHRASE” and “EMOJI” input fields then clicks to “SUGGEST” button to contribute emoji conversion of the system.

The suggestion area offers an emoji list below to show users the emoji options. Users may use “SEARCH EMOJI” input field to filter emoji list to simplify. Each emoji is a button and when clicked, it is appended to the “EMOJI” input field.

When the form is submitted a status message is displayed under the “SUGGEST” button and the form inputs are cleared.

Figure 5 - A close-up view of the suggestion area

System Manual

Description

Emoji icons are popular nowadays and people use them to express something instead of typing words or sentences. This is a web application project which aims to convert the textual content into full emoji representation. We can see how this approach can be used more to express the entire context like full sentences or paragraphs. Some basic example inputs and outputs of the project as a starting point;

- Going home under rain is terrible. → 
- Thank you all for your support. → 

Twitter is an exactly suitable platform to obtain content for this purpose. It contains short but meaningful contents. That's why this project is designed based on Twitter contents.

You can access the Tweet to Emoji website by following the tweettoemoji.net link anytime.

Requirement Specifications

1. The system shall convert tweet contents to emoji list.
2. The system shall display a greeting page which contains the best-converted (most voted up) tweets.
3. Users shall be able to see converted tweets from their accounts.
4. Users shall be able to convert a tweet with a tweet-id.
5. Users shall rate conversion of each tweet to emoji list.
6. Users shall suggest emoji-keyword pairs to help the improvement of the conversion.
7. The local database shall store keyword representations of emojis.

Project Design Diagrams

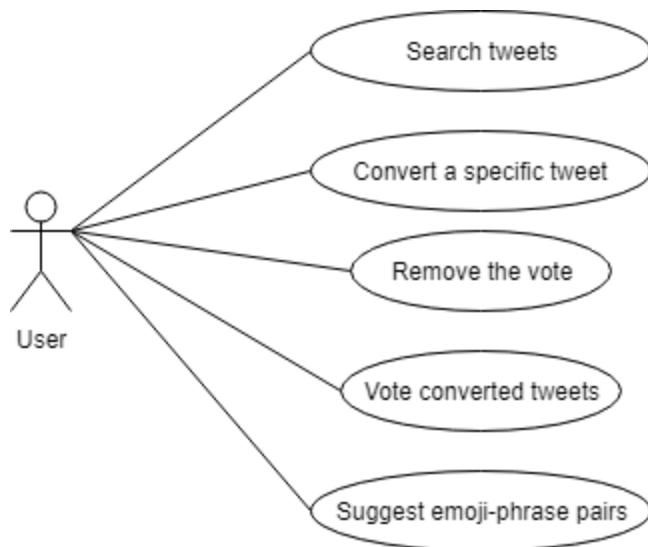


Figure 6 - The use-case diagram of the project

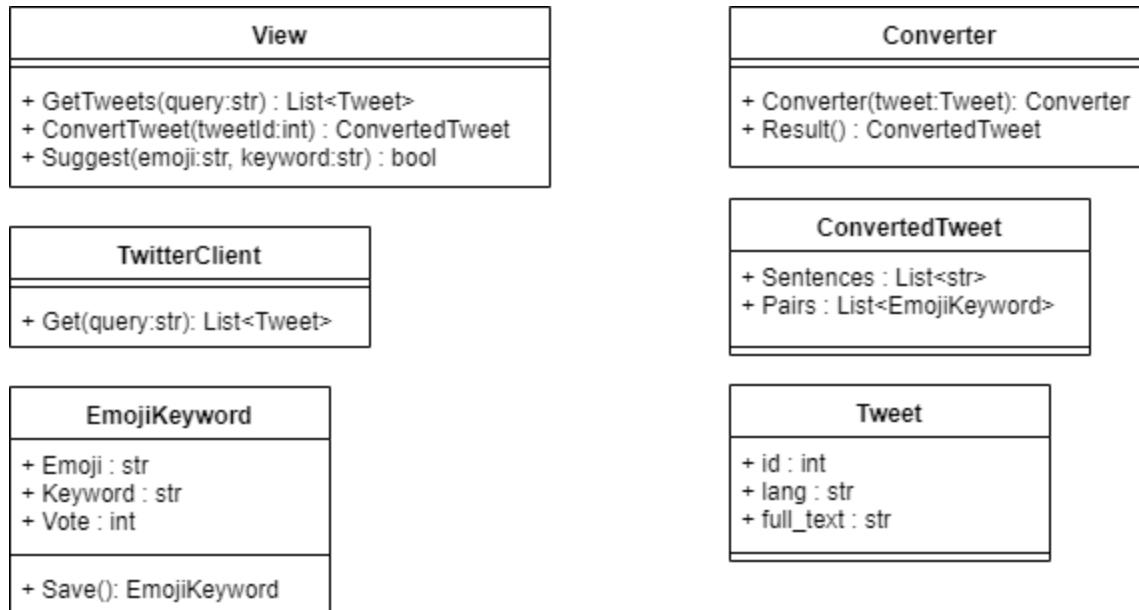


Figure 7 - The class diagrams of the project

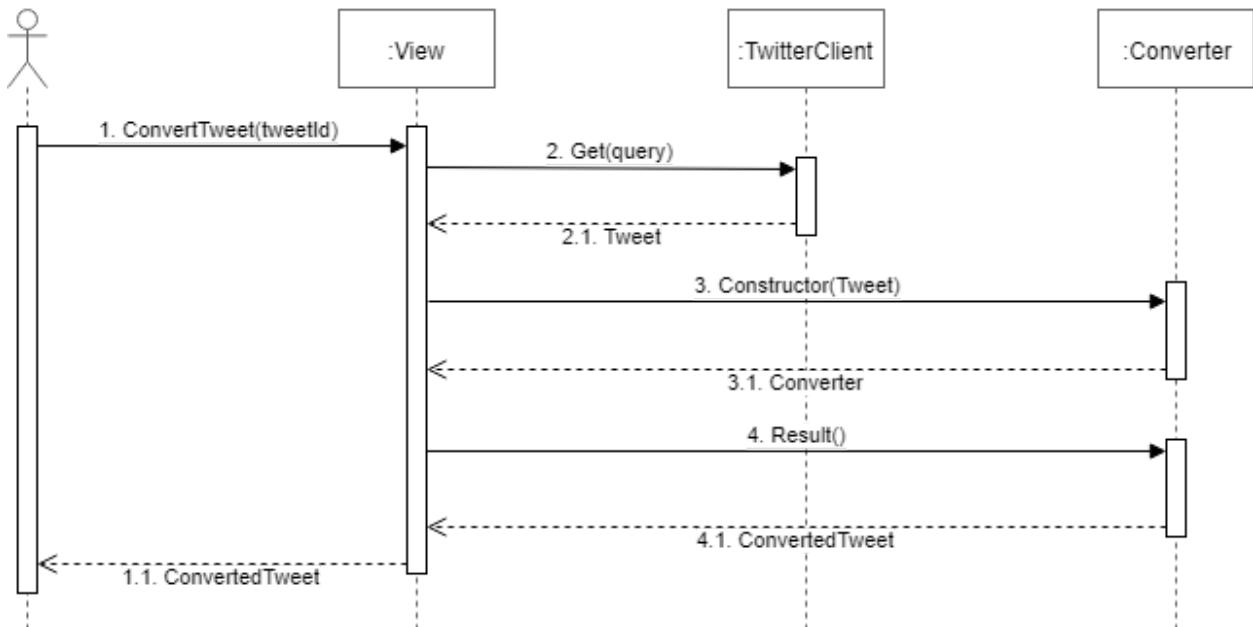
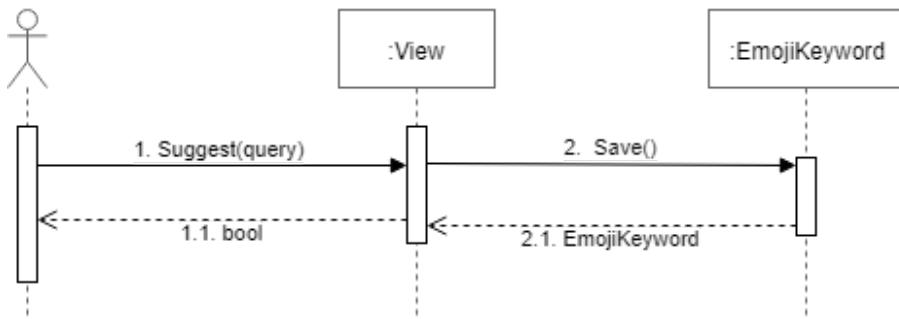
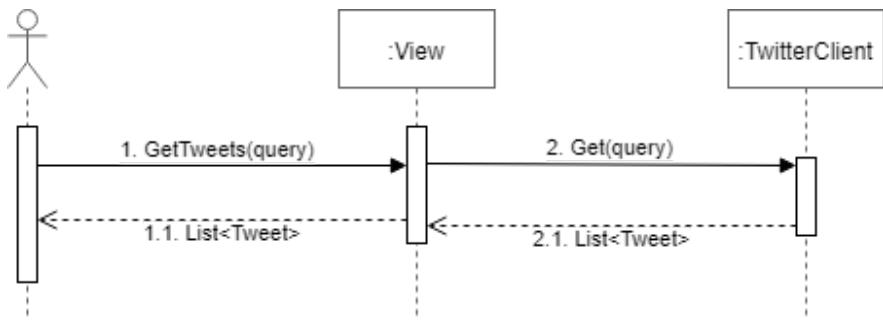


Figure 8 - The sequence diagrams of the project

Initial Mock-Up

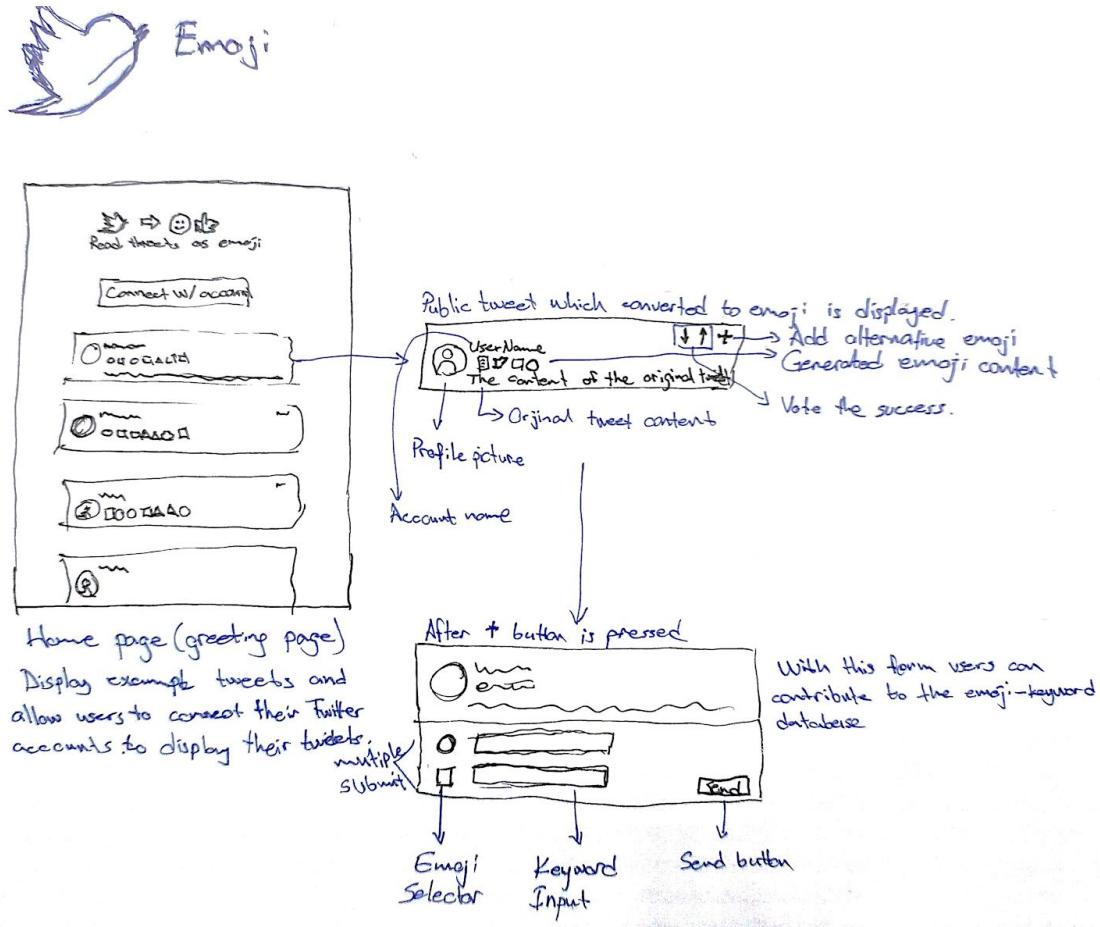


Figure 9 - The mock-up design of the project

Technologies

This project is coded by using Python v3.7 and it uses the Django v2.1 framework. To obtain tweets from Twitter, the Twitter API is used. The content converter uses the advantages of the nltk (Natural Language Toolkit) library. The user interface design is developed on Bootstrap, and the dynamic client-side content rendering is implemented thanks to jQuery and underscore.js JavaScript libraries. The project is deployed on Amazon Web Services and the source code is available on GitHub. The brief description and the reason to choose these technologies for this project are specified in the following.

The Python is one of the most capable programming languages, it is easy to learn, implement and the sources are pretty abundant. It is easy to find a library which is

suitable for any project. It can be executed in any platform. That's why this project uses Python. —python.org

The Django is the most popular and capable as well web framework library. It provides to this project; server-side page rendering, fast request handling, and database design & access with the code-first approach. —djangoproject.com

Twitter API allows developers to control and observe Twitter programmatically. By using the API, search Tweets, filter real-time Tweets, manage an account, manage direct messages, embed Tweets to a website, and manage the ads. These sub-APIs are free to use at a certain point. For larger operations, Twitter charges money to use the APIs for more. —developer.twitter.com

The nltk library provides human language processing functions. It is used for word tagging, whether it is a noun or not, if so is it plural. Splitting contents into sentences and finding the root of the words to search in a different way. —nltk.org

The front-end design is build based on the Bootstrap which allows responsive web application components in HTML, CSS, and JavaScript. —getbootstrap.com

Asynchronous data transfer between server and user-interface is established with JQuery's ajax methods. JQuery shortens the JavaScripts functionalities with its custom functions and allows reshape the HTML of a page. With the help of it, we can cover whole UI functions without refreshing the page. So, it is a single-page web application. —jquery.com

The underscore.js allows us dynamically content rendering based on the templates. It moves page rendering work from back-and to the front-end and speeds up the server responses. —underscorejs.org

The project is deployed on an Amazon Web Services (AWS) cloud, t2-micro instance. AWS provides free cloud server for limited time and resources, but it is very useful for initial project deployment. Later it is possible to move the system to better resources thanks to cloud platform benefits. —aws.amazon.com

GitHub is a version management control system which keeps the code by changes over time and provides a wiki for the description of the project. It is an open-source platform, everyone can access the repositories anytime. The project repository link, github.com/lkiran/TweetToEmoji.

Effort Tracking

From the starting of the project, 74 hours of work time is spent in total on every aspect. The following table lists the tasks, its estimated time & completed time, and the completed date as well.

Date	Description	Estimated Time	Time Spent (so far)
30,Sep,18	Creating the Repo	2 hour(s)	2 hour(s)
07,Oct,18	Improving the repo	3 hour(s)	3 hour(s)
10,Oct,18	Twitter Developer Account application	1 hour(s)	2 hour(s)
12,Oct,18	Specify requirements and design mockup	7 hour(s)	4 hour(s)
20,Oct,18	Create Django Project	1 hour(s)	2 hour(s)
20,Oct,18	Implement Twitter Authentication	2 hour(s)	2 hour(s)
20,Oct,18	Create Local Database	1 hour(s)	2 hour(s)
20,Oct,18	Download emoji list	3 hour(s)	2 hour(s)
21,Oct,18	Download emoji list	3 hour(s)	3 hour(s)
04,Nov,18	Try Twitter Search on API	2 hour(s)	3 hour(s)
04,Nov,18	Try converting an example tweet to emoji	2 hour(s)	2 hour(s)
10,Nov,18	Try converting some words with synonyms to emoji	4 hour(s)	4 hour(s)
10,Nov,18	Preparing sequence and Use-case diagrams	4 hour(s)	5 hour(s)
24,Nov,18	User-interface implementation	6 hour(s)	6 hour(s)
01,Dec,18	Website Deployment on an AWS EC2 cloud	4 hour(s)	8 hour(s)
08,Dec,18	Unit Testing	4 hour(s)	4 hour(s)
15,Dec,18	Issue & Milestone review	1 hour(s)	1 hour(s)
15,Dec,18	Tweet converter improvements	3 hour(s)	3 hour(s)
16,Dec,18	Diagram Review	3 hour(s)	3 hour(s)
22,Dec,18	Pair Voting Implementation	3 hour(s)	3 hour(s)
23,Dec,18	Bug Fixes	2 hour(s)	2 hour(s)
23,Dec,18	Documentation	3 hour(s)	3 hour(s)
24,Dec,18	Documentation	6 hour(s)	6 hour(s)
TOTAL		70 hour(s)	74 hour(s)

Table 1 - The project tasks and their completion period

Acceptance Tests

Action	Expected	Result	Pass (YES / NO)
Convert tweet to emoji	Converted content	Converted content	YES
Display tweets	List of tweets	List of tweets	YES
Search tweet by id	The tweet with the specified id	The tweet with the specified id	YES
Login with the Twitter account	Logged int to the system	No login functionality is found	NO
Vote conversion of a tweet	Vote is saved	Vote is saved	YES
Suggest emoji and phrase pair	Suggestion is saved	Suggestion is saved	YES
Display suggested pairs	Pairs in a converted tweet	Pairs in a converted tweet	YES