BizViz User Guide

Sentiment Analyzer

Release :   2.0

Date :   Feb. 25, 2016

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1. About this Guide

1.1. Document History

Product Version	Date (Release date)	Description
BizViz Sentiment Analyzer 1.0	July 15th, 2015	First release of the document
BizViz Sentiment Analyzer 2.0	April 4th, 2016	Updated document

1.2. Overview

This guide covers**:**
- Introduction and steps to access the BizViz Senitment Analyzer App
- Data processing for the BizViz Sentiment Analyzer
- Depiction of sentiments through various charts

1.3. Target Audience

This document is aimed at business professionals who use BizViz Sentiment Analyzer to extract sentiment out of their business data.

2. Getting Started with the BizViz Sentiment Analyzer

2.1. Introduction to the BizViz Sentiment Analyzer

BizViz Sentiment Analyzer provides easy-to-use mechanism to identify positive or negative sentiment within any document or webpage. It looks for words that carry a positive or negative connotation. It then applies Natural Language Processing, machine learning algorithms, and emotion based algorithms to determine the exact correlation between expressive scripts and their social implementation. It is equipped with the ANEW ("**Affective Norms for English Words**"), proving a set of normative emotional ratings for a large number of words in the English language. These word-sets have been rated in terms of pleasure, activation, and dominance in order to create a standard for use in studies of emotion and attention.

The BizViz Sentiment Analyzer is capable of extracting sentiment for a user-specified target and keyword-level sentiment. These modes of sentiment analysis provide for a variety of use cases ranging from social media monitoring to trend analysis. Hence, the analyzer takes in verbal data from news articles, blog posts, product reviews, Facebook comments, and Tweets. It can also analyze sentiments out of the manually entered text.
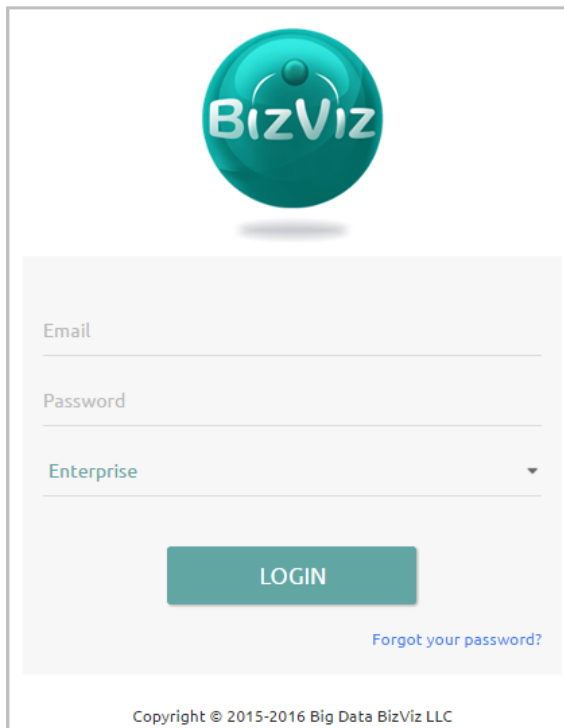
2.2. Installation Prerequisites and Supported Devices

- **Prerequisites for Deployment of the BizViz Sentiment Analyzer**
  - o Software that supports HTML5
  - o Operating System: Windows 7
  - o Basic understanding of the BizViz Server

- **Supported Devices**
  - o Web/ Tablet Browser

## 3. Getting Started with the BizViz Sentiment Analyzer App

Sentiment Analyzer is one of the many plugin applications provided under the BizViz Platform. It can be accessed from the platfom home screen.

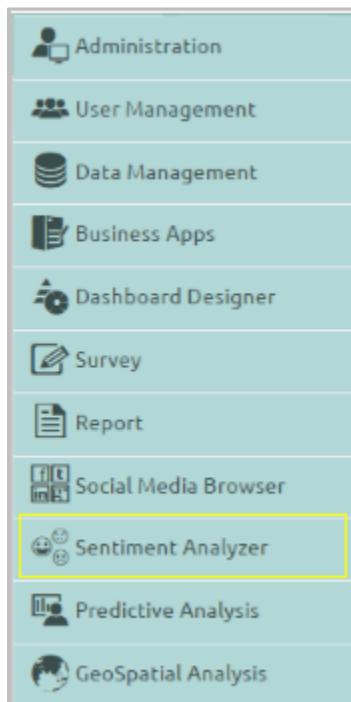User can follow the below given step by step process to access the BizViz Sentiment Analyzer:

i) URL: **http://www.bdibizviz.com/app/**
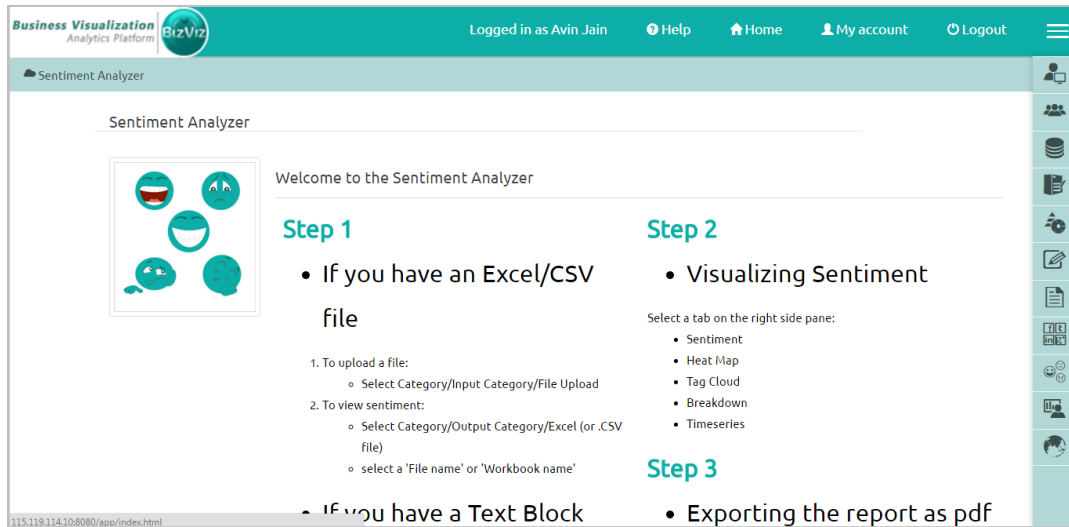
ii) Enter your credentials to Login

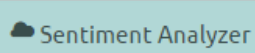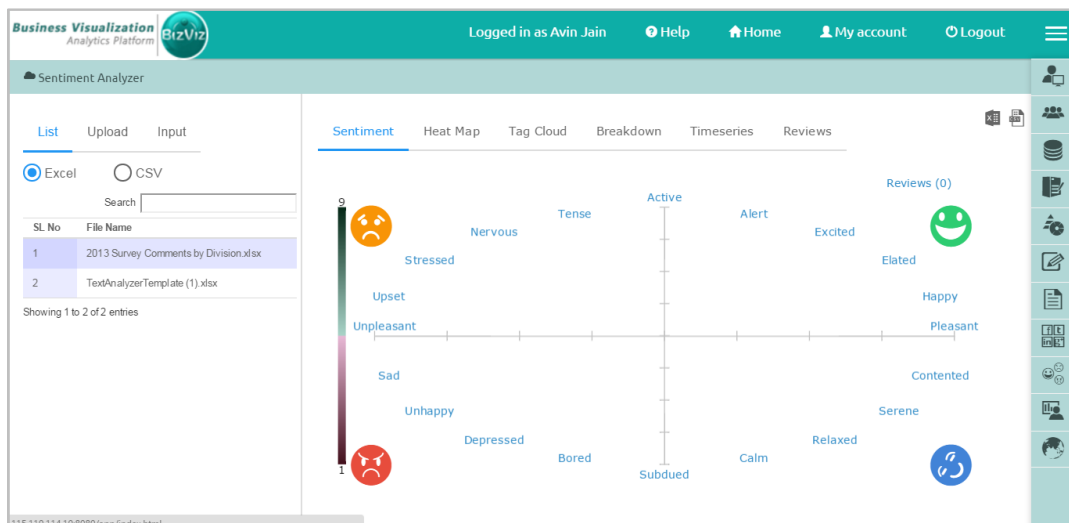iii) Click on '**LOGIN**' to access the BizViz Platform Home Screen
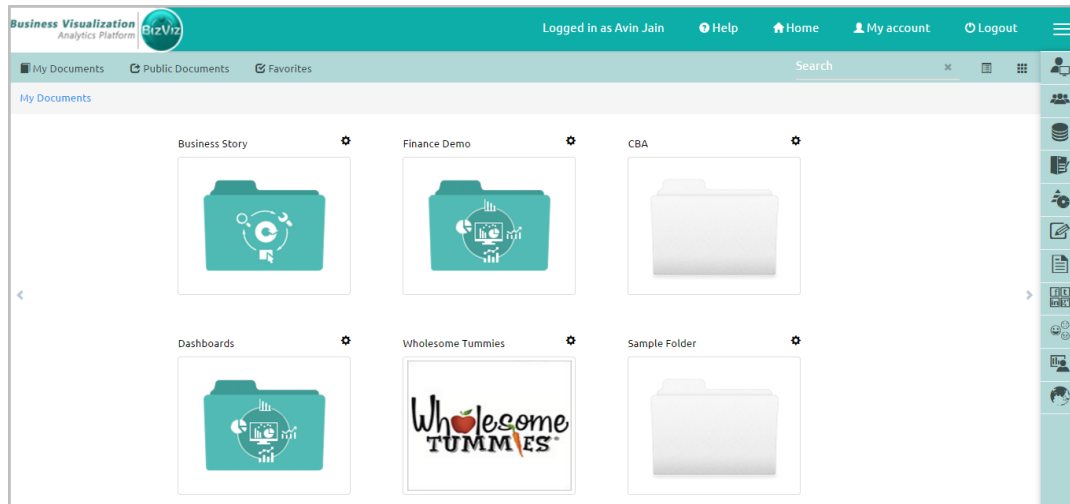
iv) Click on '**Menu**' button [icon] to open list of apps installed

v) Select '**Sentiment Analyzer**' Plugin from the list

vi) It will launch Sentiment Analyzer Home Screen

vii) Click on ☁ Sentiment Analyzer option located on the left side of the screen

viii) It will launch the Sentiment Analyzer App Screen

4. Processing Data

4.1. List

This option displays list of all the existing Microsoft Excel or CSV files. A list of Microsoft

Excel files is displayed by default. User can use ⊙ button to open a list of CSV files.
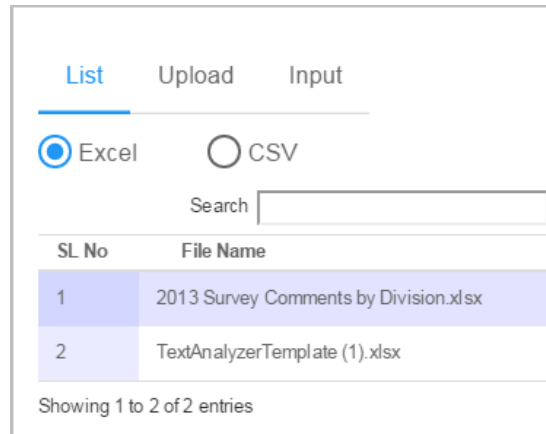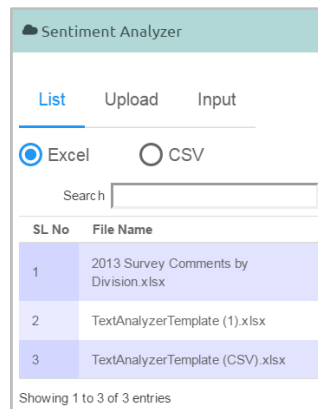
Note: Use 'Search' field to search a specific file from the given list.

4.1.1. Opening an Excel File

Follow the below given steps to open an Excel File:

i) Go to Sentiment Analyzer app screen

ii) Click on '**List**'

iii) It will display a list of all the existing Microsoft Excel files (by default)

iv) Select an Excel file from the list

v) It will launch a list of available sub-files

vi) Select a sub-file from the list

vii) It will display graphical representation for the file content (on the right side of the screen)

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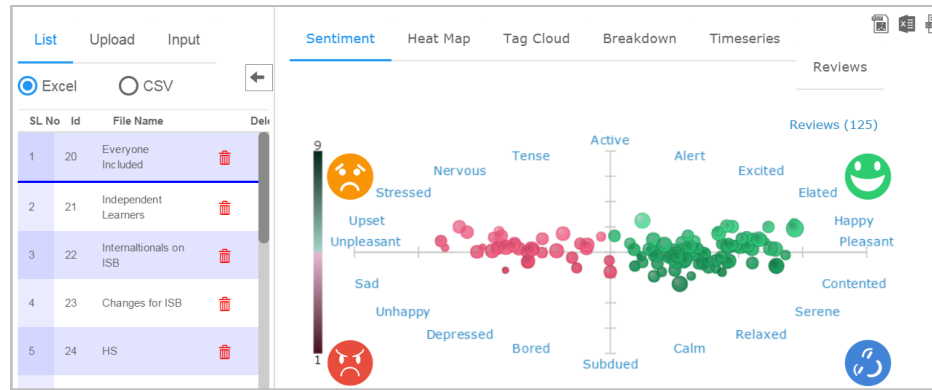
4.1.2. Export Options for an Excel File

This section explains steps for the below given options to export a Microsoft Excel file:

1. Export a Report as PDF

i) Select an Excel File

ii) It will launch a list of available sub-files

iii) Click on '**Export report as pdf**' option

iv) It will export visual data of all the sub-files into a PDF report

v) The PDF report gets downloaded under '**Downloads**' option (in the System)
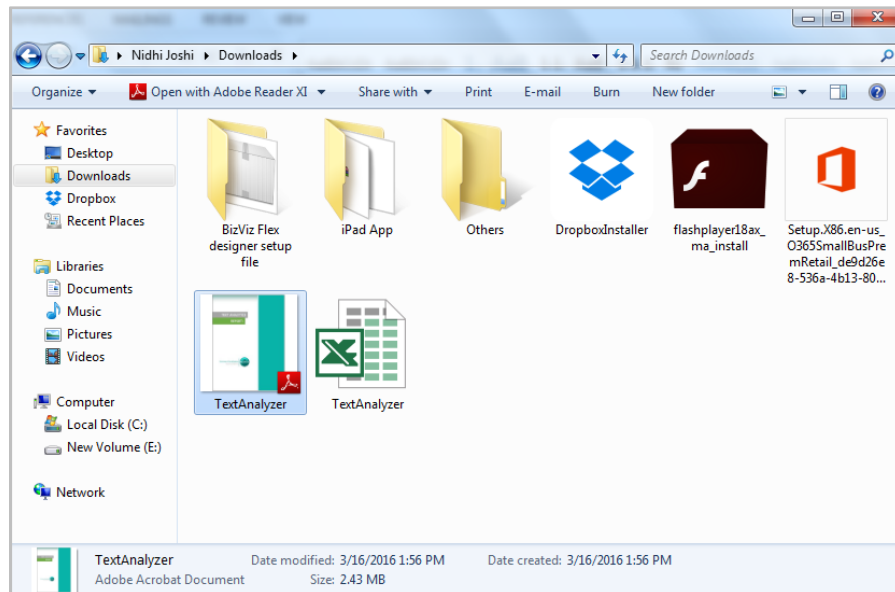
vi) Double Click on the exported PDF file to open it

2. **Export Data in Excel**

    i) Select an Excel File

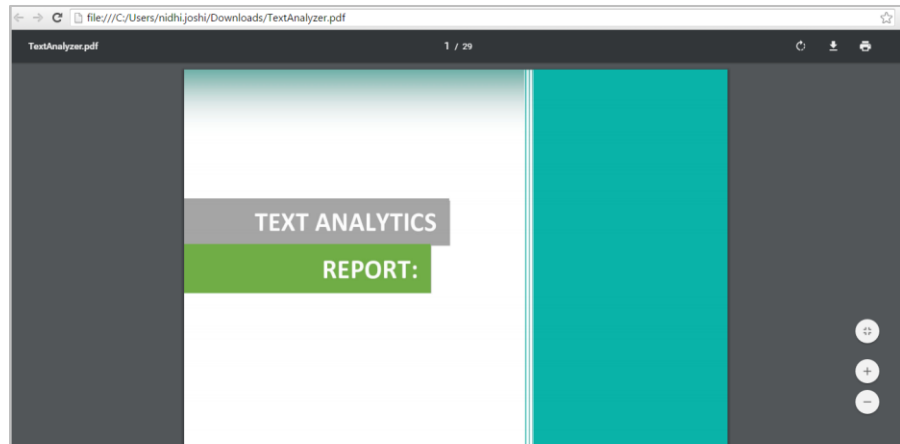   ii) It will launch a list of available sub-files

    iii)Select a sub-file

    iv)Click on [icon] '**Export data in excel**' option

    v) It will export data of the selected sub-file into an Excel file

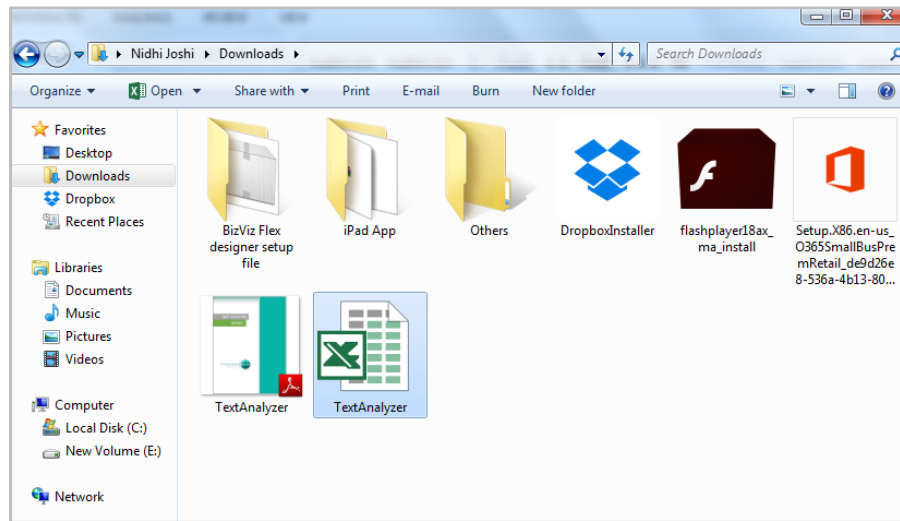   vi)The Excel file gets downloaded under '**Downloads**' option (in the System)

    vii) Double click on the exported excel file to open it
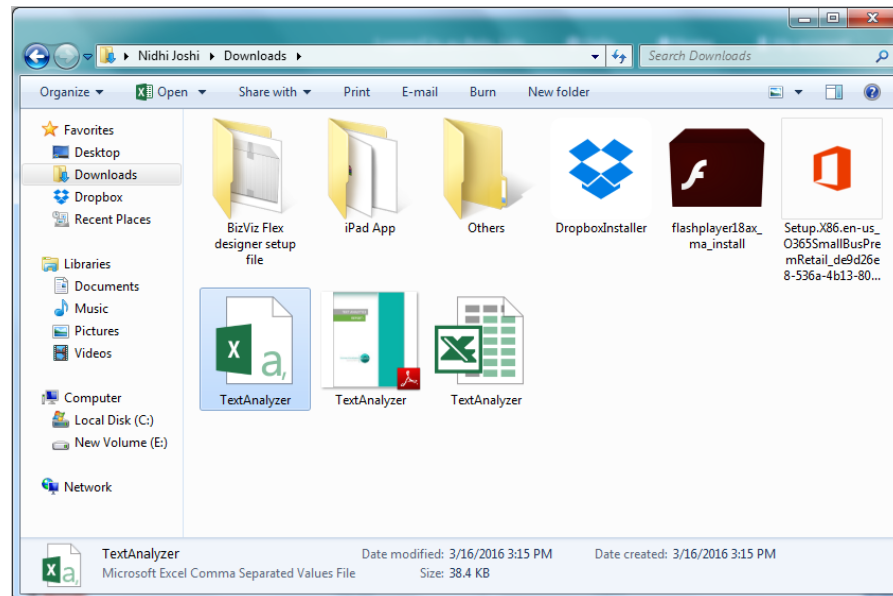
3. **Export Data in CSV**

    i) Select an Excel File

    ii) It will launch a list of available sub-files

iii) Select a sub-file

iv) Click on '**Export data in CSV**' option

v) It will export data of the selected sub-file into a CSV file

vi) The CSV file gets downloaded under '**Downloads**' option (in the System)

vii) Double click on the exported CSV file to open it

4.1.3. Opening a CSV File

Follow the below given steps to open an Excel File:

i) Go to Sentiment Analyzer app screen

ii) Click on '**List**'

iii) It will display a list of all the existing Microsoft Excel files (by default)

iv) Select '**CSV**' option

v) It will display a list of existing CSV file

vi) Select a CSV File from the list

vii) It will display graphical representation of the file content (on the right side of the screen)

Note: Sentiment chart is selected by default to display visuals for the selected CSV file.

4.1.4. Export Options for a CSV File

This section explains steps for the below given options to export a CSV file:

1. Export Data in Excel

i) Select a CSV file

ii) Click on [icon] '**Export data in excel**' option

iii) It will export data of the selected file into an Excel file

iv) The Excel file gets downloaded under '**Downloads**' option (in the System)
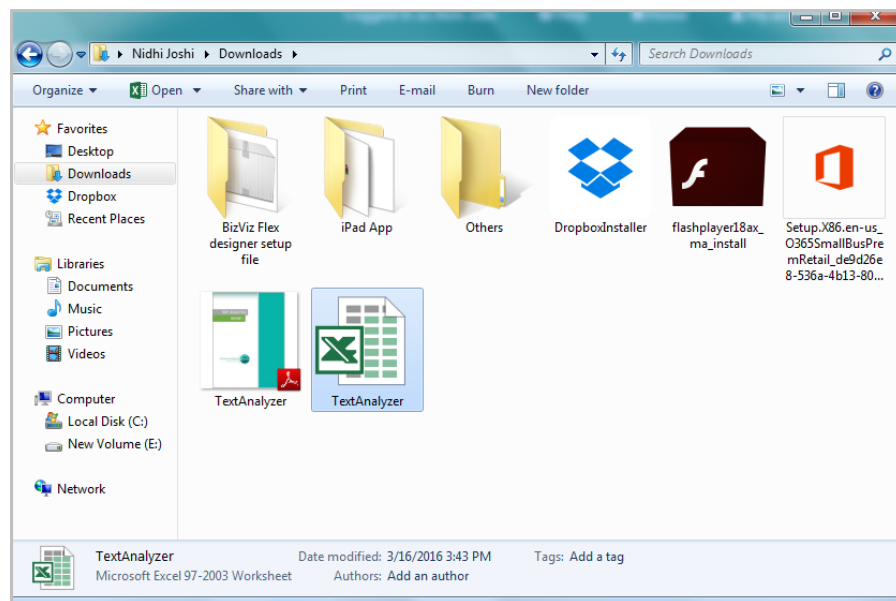
v) Double click on the exported excel file to open it

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2. Export Data in CSV

i) Select a CSV file

ii) Click on ☐ '**Export data in CSV**' option

iii) It will export data of the selected file into a CSV file

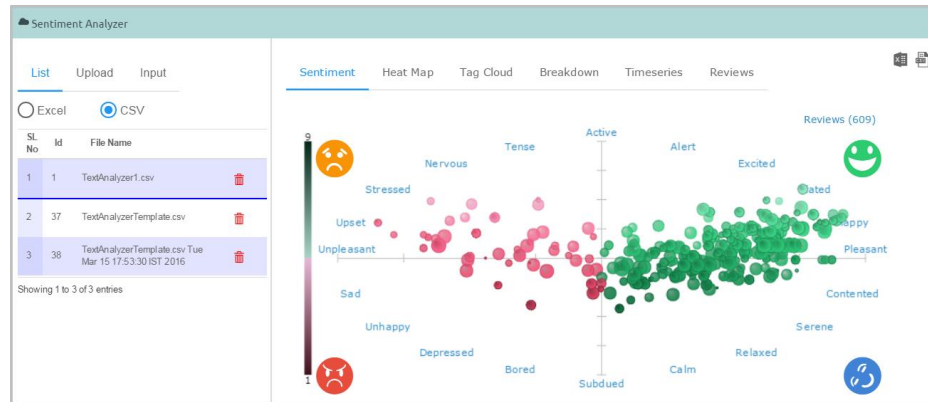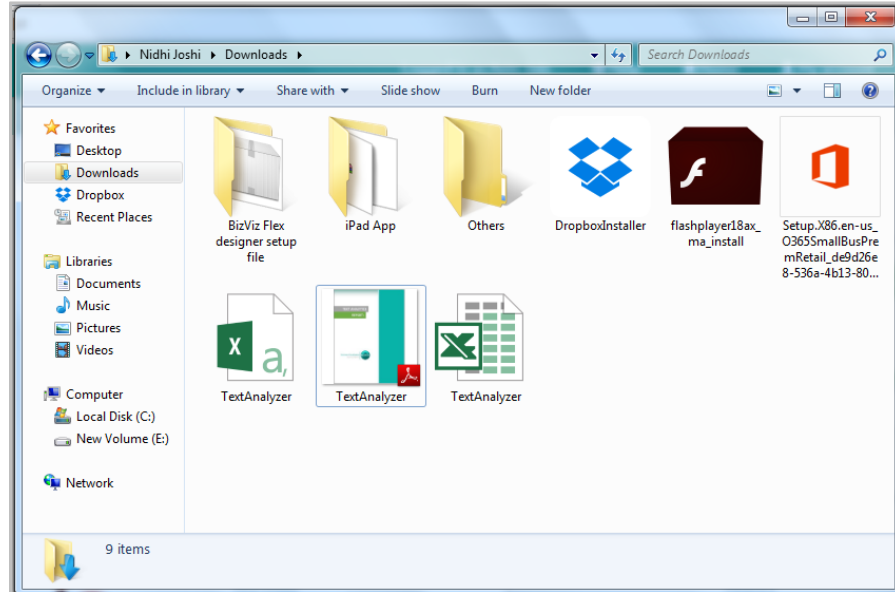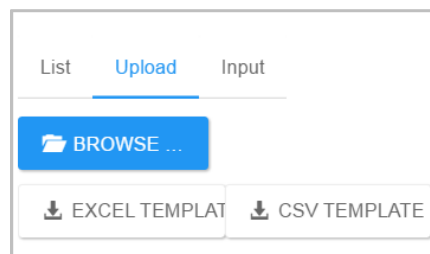iv) The CSV file gets downloaded under '**Downloads**' option (in the System)
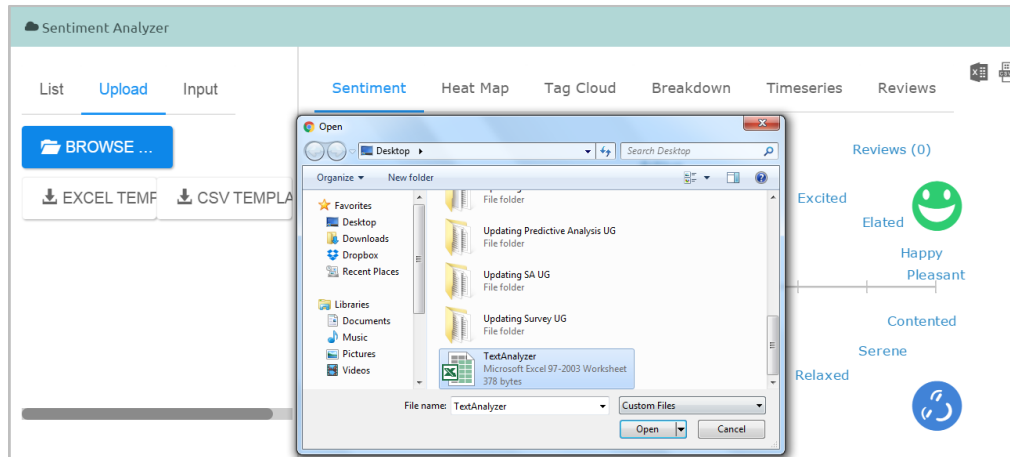

v) Double click on the exported CSV file to open it

4.2. Uploading a File

This option is provided to upload any Microsoft Excel or CSV file.

i) Go to BizViz Sentiment Analyzer App Screen

ii) Click on '**Upload**'

iii) It will launch '**Browse**' option

iv) Browse a file from the system

v) Click on '**Open**' to upload the file

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vi) A Pop-up message will appear to assure that the selected file has been uploaded

Successfully Uploaded...!
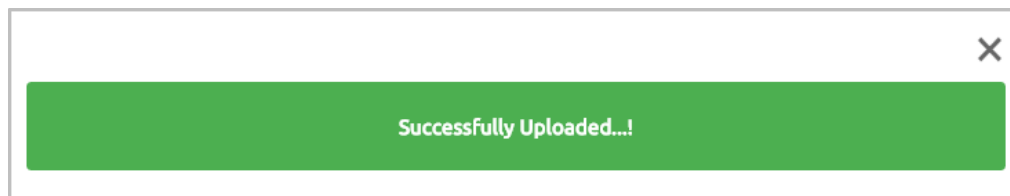
Note: Use option to download model templates for Mirosoft Excel and CSV.

4.3. Input: Inserting a Text Block

i) Go to BizViz Sentiment Analyzer App Screen

ii) Click on '**Input**'

iii) It will display a space to enter text comments for Sentiment Analysis

iv) Enter text commnet in the given space

v) Click on '**SHOW ALL TEXT**'

vi) It will display graphical chart(s) for the inserted text comment (on the right side of the screen)
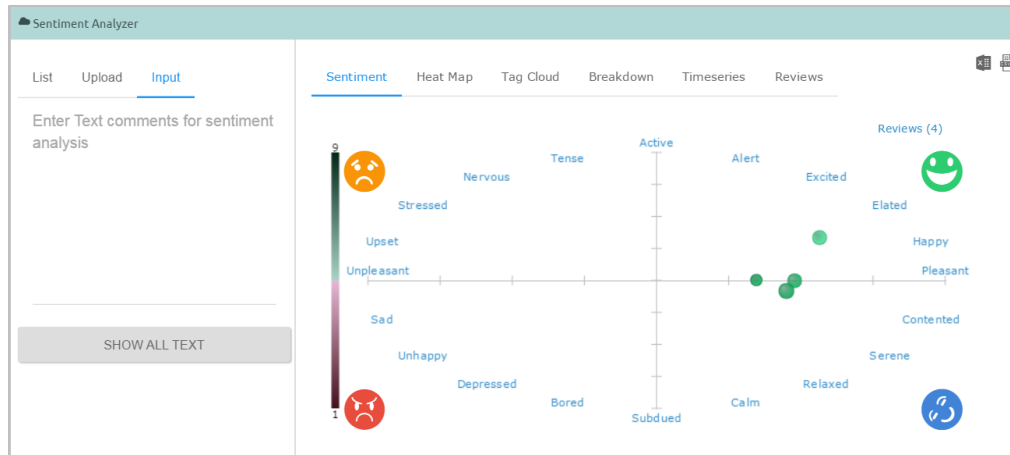
Note: Sentiment Chart opens by default while clicking on '**SHOW ALL TEXT**'.

5. Displaying Sentiments: Visualizing Reviews

This section explains various charts displaying the extracted sentiments:

5.1. Sentiment Chart

The Sentiment Chart uses multidimensional scaling to position 20 emotional states, with '**pleasure**' plotted along the horizontal axis and '**activation**' along the vertical axis. It displays all the individual reviews in the form of circles. Colour, brightness, size, and transparency of each circle reveals different information about the review sentiment.

- **Colour:** Overall valence or pleasure of the review is presented through the colour. All the pleasant reviews are in green colour, and unpleasant in red.
- **Brightness**: Overall arousal of the review is displayed through brightness of the circle. Active reviews are brighter, and subdued reviews are darker.
- **Size and Transparency:** These two measures are to assure assessment of individual review sentiment. More confident sentiment estimations are presented through the bigger size and less transparency of the circles.
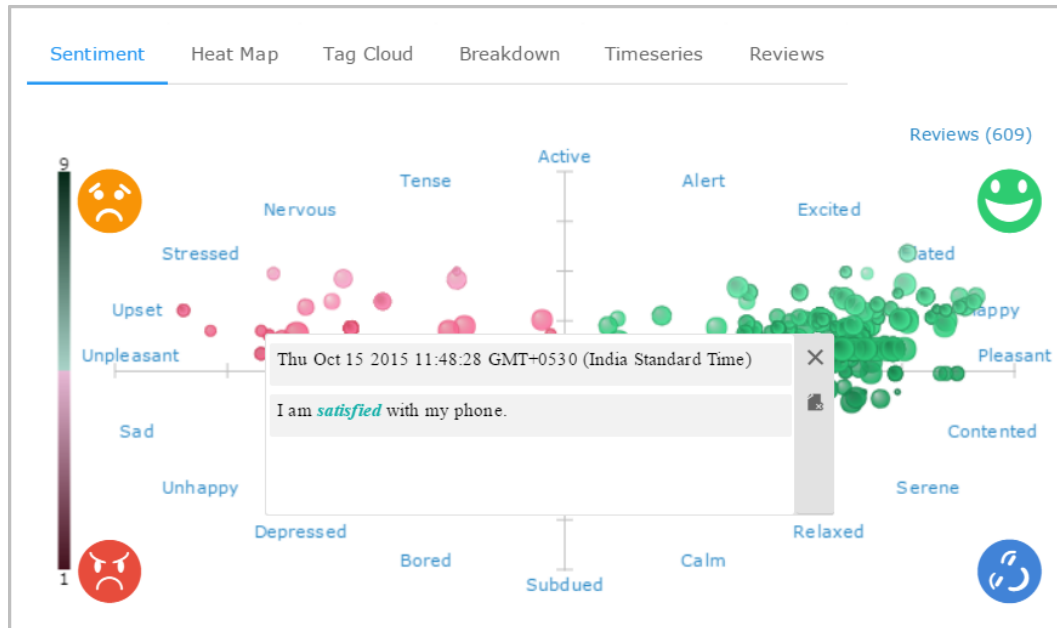
Hover the mouse over a review circle to reveal its body. Click on a review to generate a dialog box displaying the review details with day, date, and time. ANEW dictionary terms in a review will be highlighted in Italics. It may open more than one dialog box while clicking on the dense areas (with more circles). Opening of more dialog boxes indicate that all the opened reviews carry either similar words or sentiments.

5.2. Heat Map Chart

The heatmap visualizes the number of reviews within different sentiment regions. It highlights dark red regions with many reviews, and light blue regions with only a few reviews.

The emotional scatter-plot is subdivided into an 8 × 8 grid of bins representing one-unit step in pleasure and arousal. The number of reviews falling within each bin is calculated and displayed using a specific colour:

• **Red** coloured bins contain more reviews than average

• **Blue** coloured bins contain less reviews than average

• **White** coloured bins contain no reviews.

Stronger, more saturated colours lie farther from the average. Hovering the mouse over a bin, it reveals the number of reviews included in the bin.

5.3. Tag Cloud

The tag cloud displays frequently occurred terms. It uses the following parameters to reveal sentiments out of each term:

Size: A term's size indicates how often it occurs over all the reviews. Terms mentioned in large size occur more frequently compared to the terms that are small in size.

Colour: Each term is coloured based on indicate the sentiment that it reveals. Four shades of colours are used to indicate below mentioned sentiments:

- Relaxed terms in dark green colour
- Happy terms in lighter shade of green colour
- Unhappy terms in dark red colour
- Upset terms in lighter shade of red colour

Hover the mouse over a term to reveal '**Lift**' and '**Confidence**' (frequency) count.

5.4. Breakdown Chart

The Breakdown chart displays total number of reviews through different categories of a pie chart. Pleasant reviews are mentioned in green colour, and unpleasant reviews in red. All the reviews are split into four parts as per the revealed sentiments, each part is indicated through a different shade of colour:

- Relaxed reviews in dark green colour
- Happy reviews in lighter shade of green colour
- Unhappy reviews in dark red colour
- Upset reviews in lighter shade of red colour
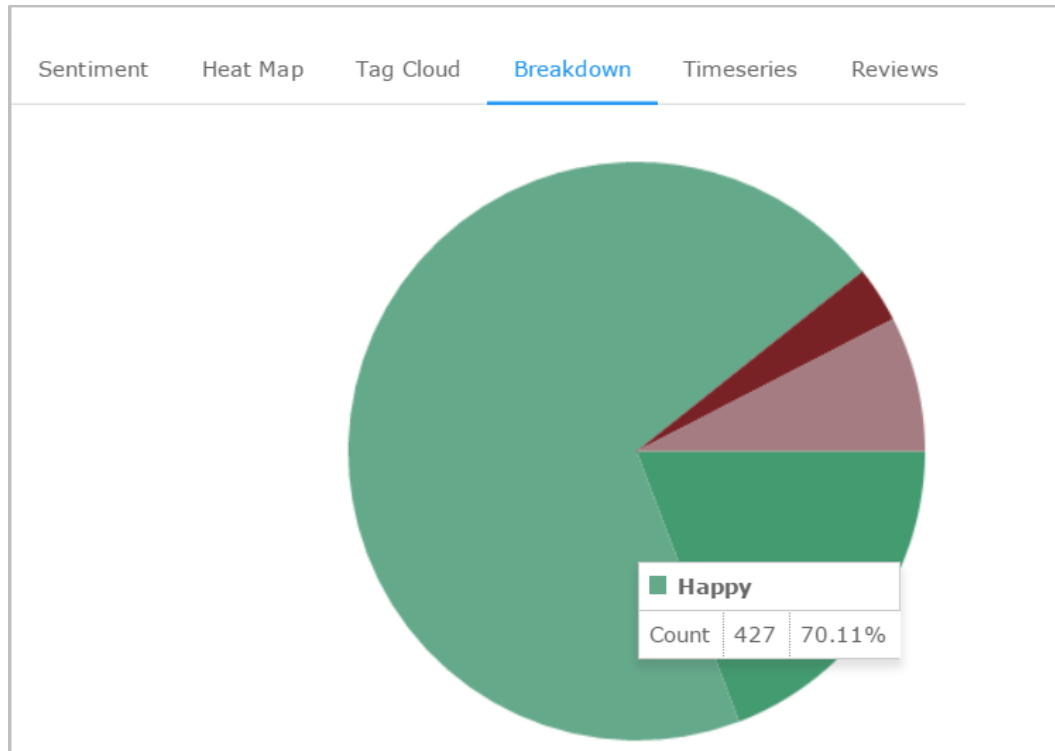
Hover the mouse over a pie to see the total number of reviews in that section.

5.5. Time Series Chart

The Time Series Chart uses column chart with slicer to display different reviews within the chosen range of time. User can select the required range of time by using a menu that is provided at the top. A dragger is provided below the chart to drag deep into the time slots when a wider range of time is chosen. X axis in the chart shows date and time for the collected reviews while Y axis indicates total review counts.

Column slicer reveals sentiments by using a different shade of colour as described below:
- Relaxed reviews in dark green colour
- Happy reviews in lighter shade of green colour
- Unhappy reviews in dark red colour
- Upset reviews in lighter shade of red colour

Hover the mouse over a column to see review details.

5.6. Review List

It displays all the available reviews in the form of a list. The review list contains body of a reivew, day-date-time for a review, user name, overall valence '**v**', overall arousal '**a**', and '**delete**' option. ANEW terms are highlighted in bold and coloured either in green or red as per the suggested sentiments. The review list can be arranged in ascending or descending order by clicking on the column header. Insert any term into the search field to get the term specific review list.

6. Logging Out

Click on '**Logout**' option provided in the Header Panel of the BizViz Platform. You will be successfully logged out from the **BizViz Sentiment Analyzer**.

Note: Clicking on '**Logout**' redirects the user back to the '**LOGIN**' page of the BizViz Platform.