



SentiTracker

Sentiment Analysis for Grievance Tracking Website

User Manual Version 1.0

Group 14

Emerging Technologies

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1. Introduction

SentiTracker is an AI-powered web platform designed to analyze the emotional sentiment behind grievance submissions. In today's fast-paced world, organizations, institutions, and businesses often receive feedback, complaints, and grievances from their customers, employees, or stakeholders. Manually reviewing each grievance and understanding the sentiment behind it can be time-consuming and prone to human error. SentiTracker provides a scalable solution by utilizing natural language processing (NLP) and machine learning (ML) algorithms to automate this process, offering insights into how users feel when submitting their grievances.

By leveraging sentiment analysis, SentiTracker classifies grievances into categories—positive, negative, or neutral—allowing organizations to prioritize responses and take actionable steps based on data-driven insights. Whether used by HR departments to gauge employee morale, customer service teams to monitor satisfaction, or educational institutions for student feedback, SentiTracker ensures that sentiment is at the forefront of grievance management.

1.1 Purpose of the Website

The primary purpose of the SentiTracker website is to streamline the grievance handling process by enabling users to submit complaints or feedback and receive sentiment analysis reports. The platform empowers organizations to respond quickly and appropriately to issues, identifying whether the grievances reflect positive experiences or areas needing improvement. This allows for efficient handling of user concerns and contributes to better organizational performance, customer retention, and overall satisfaction.

By utilizing machine learning models such as BERT (Bidirectional Encoder Representations from Transformers), SentiTracker provides detailed sentiment analysis of textual inputs, ensuring that organizations can interpret the emotional tone of grievances with high accuracy.

1.2 Overview of Features

SentiTracker offers a wide array of user-centric and administrative features, making it a versatile tool for handling grievance submissions and analysis. The key features of the platform include:

- ❖ **User Authentication:** Users can create accounts and log in securely to access the platform.
- ❖ **Grievance Submission:** Users can submit grievances through a simple, intuitive interface. These submissions are processed and analyzed in real time.
- ❖ **Sentiment Analysis:** Each grievance is passed through a sophisticated NLP algorithm that evaluates the text and categorizes it into positive, negative, or neutral sentiment.

- ❖ **Sentiment Reports:** Users can view and download detailed sentiment analysis reports for each submitted grievance, complete with a sentiment score.
- ❖ **Data Export:** Both users and administrators can export sentiment reports in various formats (PDF, CSV) for further review.
- ❖ **Dashboard Management:** Users and administrators can monitor grievances and their sentiment scores via an organized dashboard.
- ❖ **Admin Controls:** Administrators have enhanced permissions to manage grievances, oversee user accounts, and perform data management tasks.

These features are designed to ensure that both end users and administrators can efficiently interact with the system, enabling seamless grievance handling and insightful decision-making.

1.3 Technology Stack

SentiTracker is built on a robust and flexible technology stack that ensures smooth performance and scalability. The platform incorporates the following technologies:

- ❖ **Frontend:** The user interface is built using HTML5, CSS3, and JavaScript, providing a responsive and interactive user experience. Bootstrap or custom CSS frameworks may be used to enhance the UI design.
- ❖ **Backend:** The platform's backend are implemented using frameworks like Django (Python) for handling requests, data processing, and managing user authentication. Firebase can also be integrated for authentication and real-time data management.
- ❖ **Natural Language Processing (NLP):** Sentiment analysis is powered by the BERT algorithm, a state-of-the-art machine learning model that processes textual data and identifies emotional tones with high precision.
- ❖ **Database:** SQL databases or Firebase databases store user information, grievance data, and sentiment reports. Depending on the chosen setup, administrators can use SQL queries or Firebase's real-time database features.
- ❖ **Hosting and Deployment:** The project is hosted on Firebase Hosting, AWS, or any preferred cloud service for scalability and high availability.

Through this technology stack, SentiTracker offers a seamless, secure, and reliable platform for grievance management, providing both users and organizations with actionable insights into the sentiment behind every grievance submission.

2. Who Should Use This Manual

This manual is designed for various types of users who interact with the SentiTracker platform.

2.1 End Users

End users are those submitting grievances or accessing sentiment analysis reports. They can create accounts, log in, submit grievances, and view the corresponding analysis results.

2.2 Administrators

Administrators manage user accounts and grievance data on the platform. They have the ability to review submissions, generate reports, and handle any system-related configurations.

2.3 Developers

Developers will benefit from this manual to set up, customize, and maintain the project. They can also leverage the backend technologies (Firebase/Django) to make adjustments to the platform's core functionalities.

3. Getting Started

This section will guide you through accessing the SentiTracker platform and ensuring your system is compatible.

3.1 Accessing the Website

To use the SentiTracker platform, you must first ensure that your system and browser meet the necessary requirements.

3.1.1 System Requirements

- ❖ Operating System: Windows, macOS, or Linux.
- ❖ RAM: Minimum 4GB.
- ❖ Processor: Dual-core or higher.

3.1.2 Browser Compatibility

SentiTracker works best on the latest versions of:

- ❖ Google Chrome
- ❖ Mozilla Firefox
- ❖ Microsoft Edge

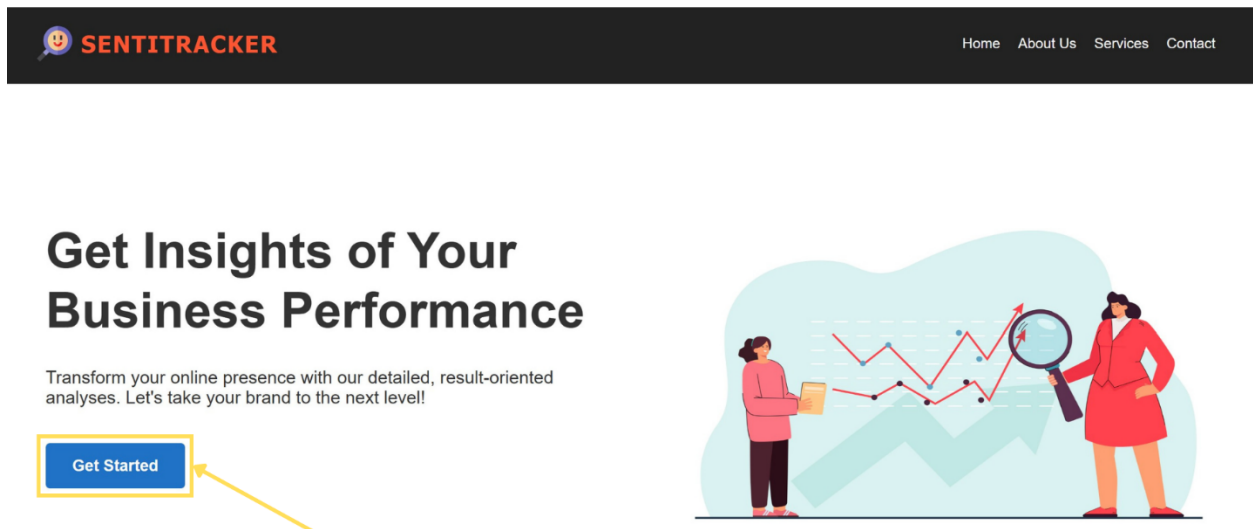
Ensure your browser is updated for the best experience.

4. User Account and Authentication

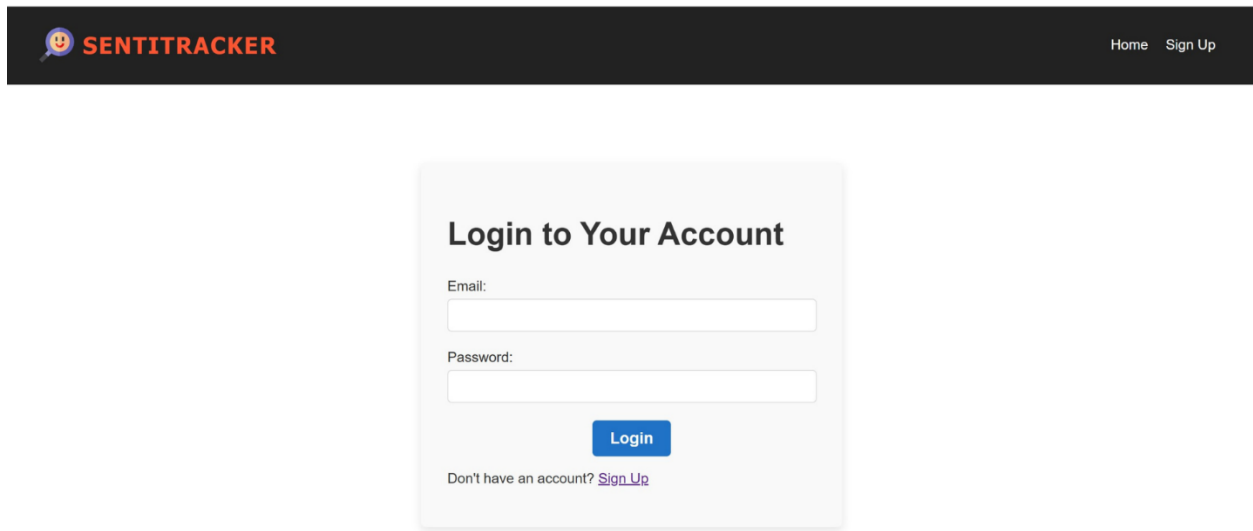
The platform requires users to have an authenticated account to submit grievances and view analysis reports.

4.1 Creating an Account

- ❖ To create an account: Navigate to the Sign Up page by clicking on **Get Started** on the home screen.

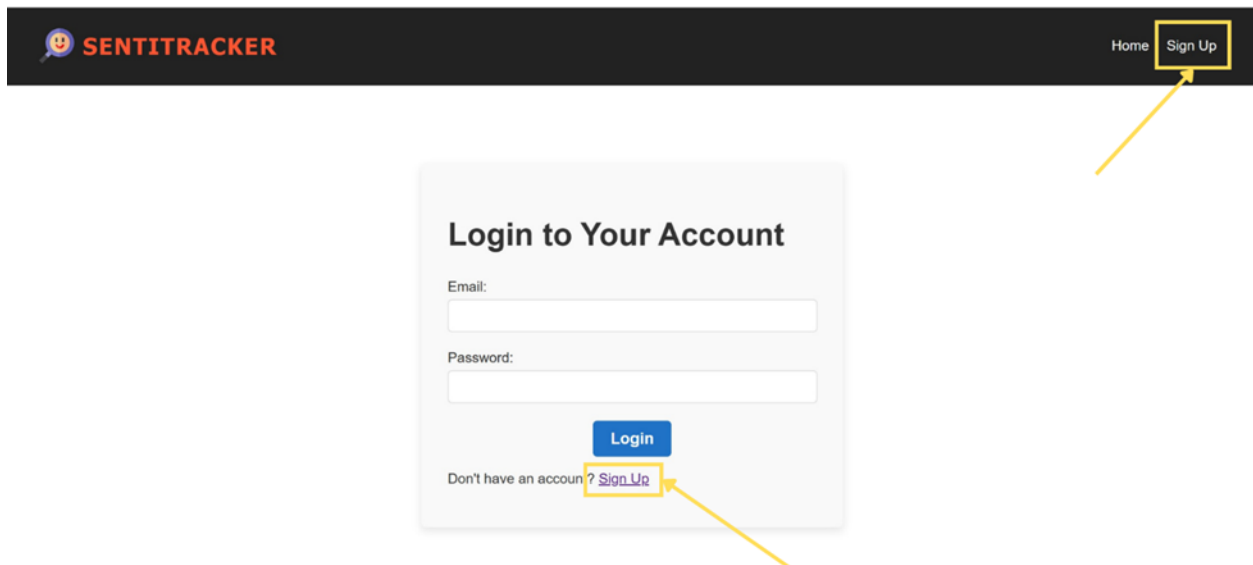


❖ Now a Login screen as such will appear:



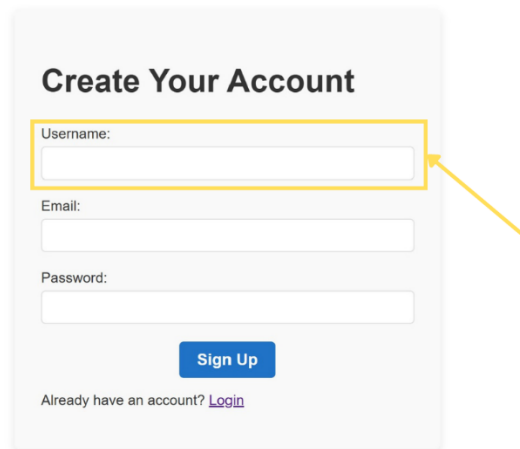
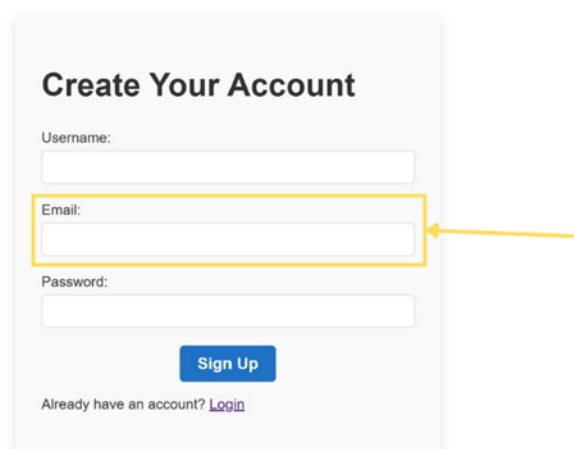
The screenshot shows the SentiTracker login interface. At the top, a dark header bar contains the SentiTracker logo on the left and 'Home' and 'Sign Up' links on the right. The main content area features a light gray box titled 'Login to Your Account'. Inside this box, there are two input fields: 'Email:' and 'Password:'. Below the password field is a blue 'Login' button. At the bottom of the box, it says 'Don't have an account? [Sign Up](#)'.

❖ Click on **Sign Up** either at the bottom or the top-right of the screen.



This screenshot is identical to the previous one but includes yellow annotations. A yellow box highlights the 'Sign Up' link in the top-right header bar, with a yellow arrow pointing to it from the right. Another yellow box highlights the 'Sign Up' link at the bottom of the login form, with a yellow arrow pointing to it from the bottom right.

- ❖ Now a Sign Up screen will appear. Fill in your username, email address, and password.

A "Create Your Account" form with a light grey background. The title "Create Your Account" is at the top in bold black text. Below it are three input fields: "Username:", "Email:", and "Password:". The "Username:" field is highlighted with a yellow border, and a yellow arrow points to it from the right. Below the input fields is a blue "Sign Up" button. At the bottom, there is a link that says "Already have an account? [Login](#)".A "Create Your Account" form with a light grey background. The title "Create Your Account" is at the top in bold black text. Below it are three input fields: "Username:", "Email:", and "Password:". The "Email:" field is highlighted with a yellow border, and a yellow arrow points to it from the right. Below the input fields is a blue "Sign Up" button. At the bottom, there is a link that says "Already have an account? [Login](#)".

The form is titled "Create Your Account" in bold. It has three input fields: "Username:", "Email:", and "Password:". The "Password:" field is highlighted with a yellow rectangular box, and a yellow arrow points from the right towards it. Below the fields is a blue "Sign Up" button. At the bottom, it says "Already have an account? [Login](#)".

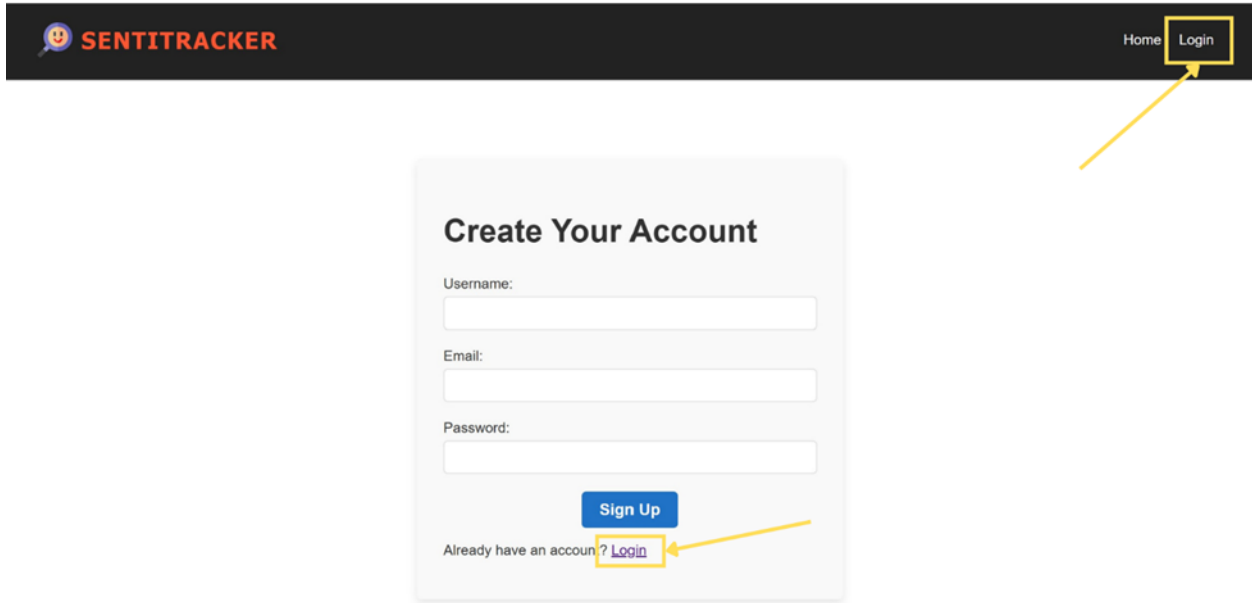
- ❖ Click the **Sign Up** button. You will receive a confirmation message upon successful account creation.

The form is titled "Create Your Account" in bold. It has three input fields: "Username:", "Email:", and "Password:". Below the fields is a blue "Sign Up" button, which is highlighted with a yellow rectangular box. A yellow arrow points from the right towards the button. At the bottom, it says "Already have an account? [Login](#)".

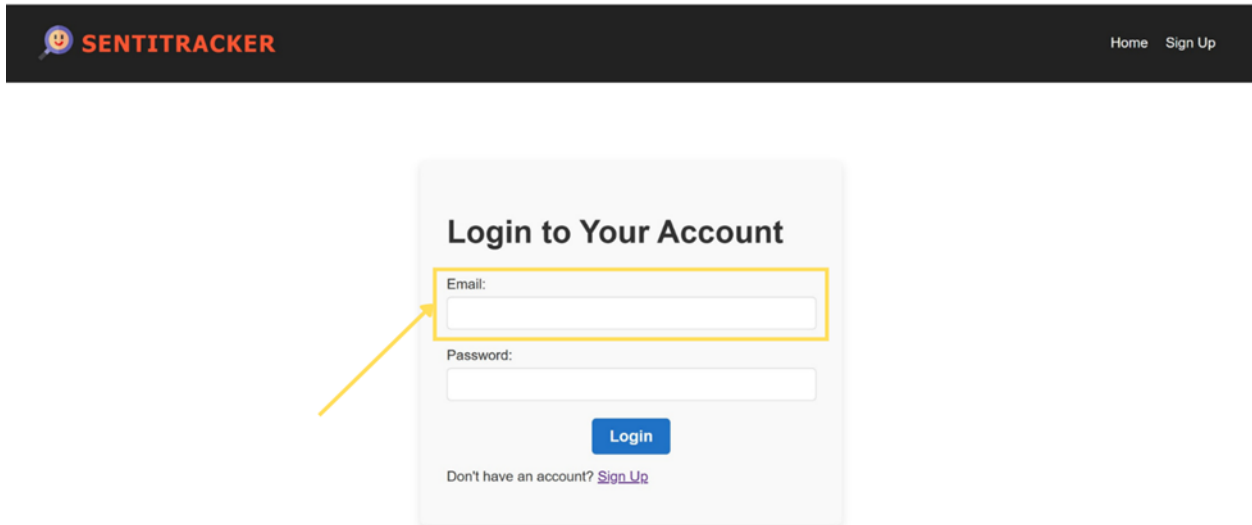
- ❖ After signing up, log in using your credentials.

4.2 Logging into the Website

- ❖ For returning users: Navigate to the Login page either by clicking on **Login** at the bottom or top-right side of the page.



- ❖ Enter your registered email and password.



The form is titled "Login to Your Account". It has two input fields: "Email:" and "Password:". The "Password:" field is highlighted with a yellow rectangular box. A yellow arrow points from the right side of the box to the right. Below the fields is a blue "Login" button. At the bottom, it says "Don't have an account? [Sign Up](#)".

- ❖ Click the **Login** button. If the details are correct, you will be redirected to the dashboard.

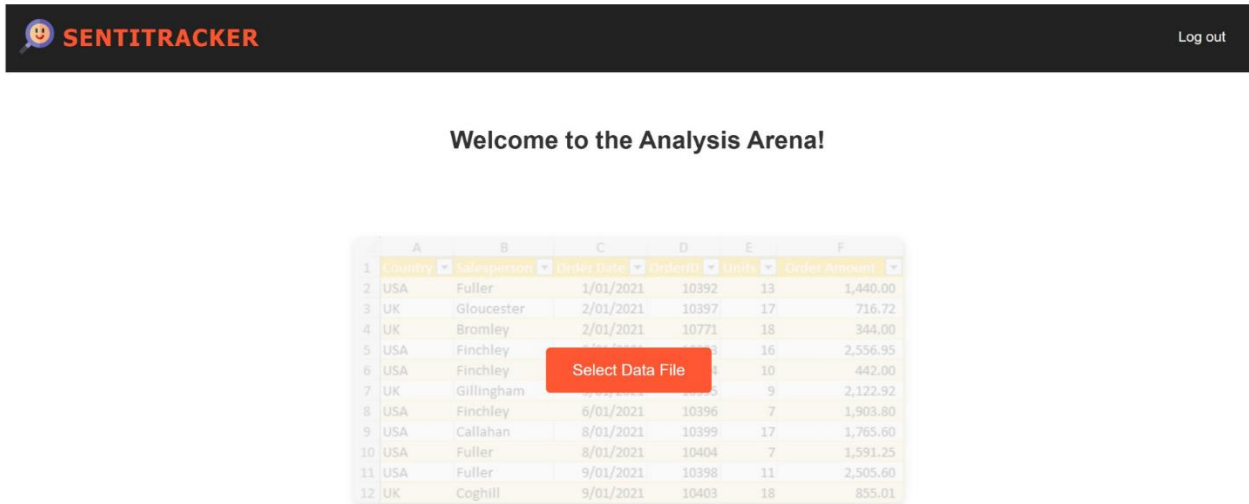
The form is titled "Login to Your Account". It has two input fields: "Email:" and "Password:". Below the fields is a blue "Login" button, which is highlighted with a yellow rectangular box. A yellow arrow points from the right side of the box to the right. At the bottom, it says "Don't have an account? [Sign Up](#)".

5. Using the Sentiment Analysis Tool

SentiTracker's core functionality is to process grievances submitted by users and generate sentiment analysis reports.

5.1 Grievance Data Submission Process

- ❖ To upload grievance data through Excel sheet/Google Sheets format, login to your account. After logging in, this screen will appear. This is the dashboard screen:



The dashboard screen displays a table of grievance data with the following columns: Country, Salesperson, Order Date, Order ID, Units, and Order Amount. A red button labeled "Select Data File" is overlaid on the table.

	A	B	C	D	E	F
	Country	Salesperson	Order Date	Order ID	Units	Order Amount
2	USA	Fuller	1/01/2021	10392	13	1,440.00
3	UK	Gloucester	2/01/2021	10397	17	716.72
4	UK	Bromley	2/01/2021	10771	18	344.00
5	USA	Finchley			16	2,556.95
6	USA	Finchley			10	442.00
7	UK	Gillingham			9	2,122.92
8	USA	Finchley	6/01/2021	10396	7	1,903.80
9	USA	Callahan	8/01/2021	10399	17	1,765.60
10	USA	Fuller	8/01/2021	10404	7	1,591.25
11	USA	Fuller	9/01/2021	10398	11	2,505.60
12	UK	Coghill	9/01/2021	10403	18	855.01

- ❖ Click on **Select Data File** to select only Excel/Google Sheets format files from your device.

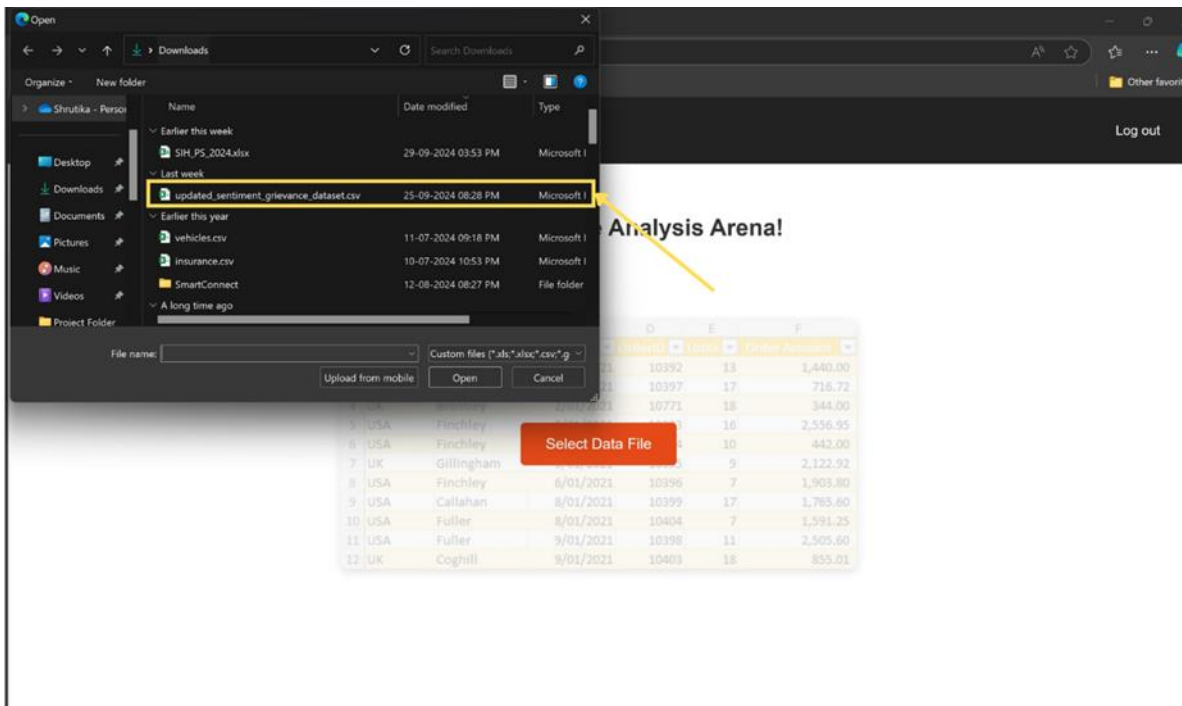


Welcome to the Analysis Arena!

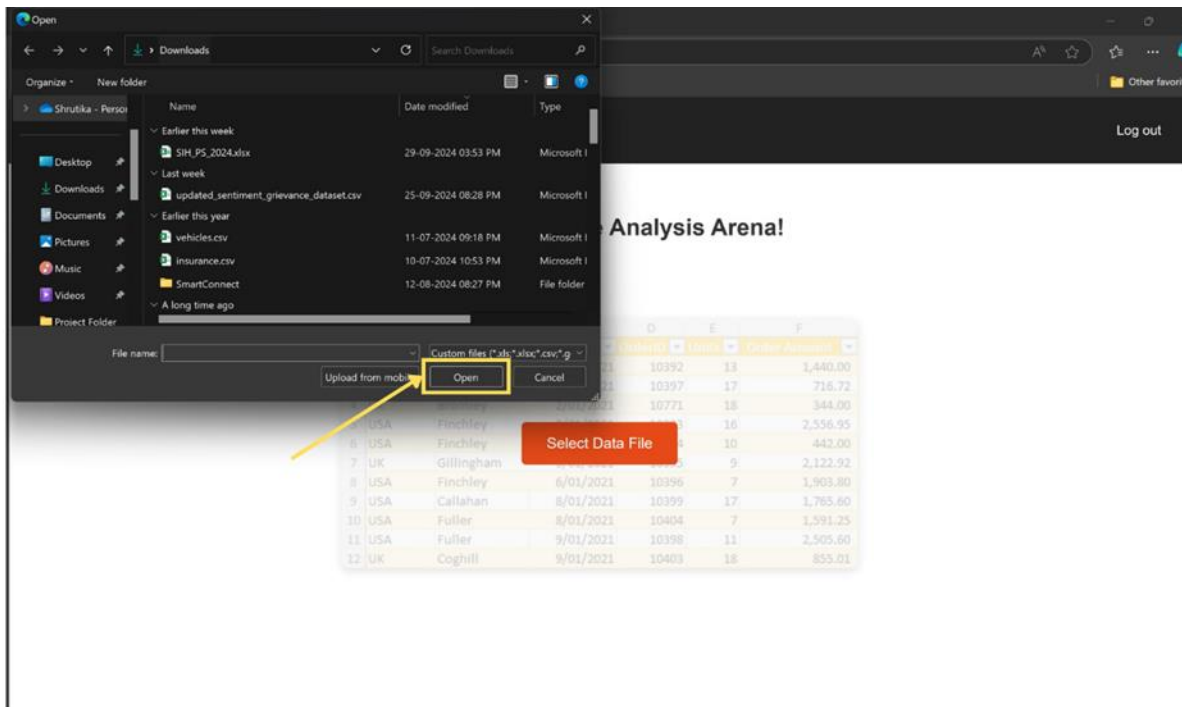
	A	B	C	D	E	F
1	Country	Subregion	Order ID	Order	Order Amount	
2	USA	Fuller	1/01/2021	10392	13	1,440.00
3	UK	Gloucester	2/01/2021	10397	17	716.72
4	UK	Bromley	2/01/2021	10771	18	344.00
5	USA	Finchley			16	2,556.95
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11	USA	Fuller	9/01/2021	10398	11	2,505.60
12	UK	Coghill	9/01/2021	10403	18	855.01

Select Data File

❖ Now select the desired file from your device.



❖ Click **Open**.



5.2 Sentiment Analysis Results

Once you submit the grievance data, the platform processes the text using a sentiment analysis algorithm and returns results.

5.2.1 Viewing Sentiment Reports

❖ After submitting your grievance data, wait for such result link to be displayed on the same screen:

Welcome to the Analysis Arena!

	A	B	C	D	E	F
1	Country	Salesperson	Order Date	Order ID	Units	Order Amount
2	USA	Fuller	1/01/2021	10392	13	1,440.00
3	UK	Gloucester	2/01/2021	10397	17	716.72
4	UK	Bromley	2/01/2021	10771	18	344.00
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11	USA	Fuller	9/01/2021	10398	11	2,556.95
12	UK	Coghill	9/01/2021	10403	18	855.01

Select Data File

View Analysis Report

❖ Now click on **View Analysis Report** to view the generated report.

Welcome to the Analysis Arena!

	A	B	C	D	E	F
1	Country	Salesperson	Order Date	Order ID	Units	Order Amount
2	USA	Fuller	1/01/2021	10392	13	1,440.00
3	UK	Gloucester	2/01/2021	10397	17	716.72
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10	USA	Fuller	8/01/2021	10404	7	1,591.25
11	USA	Fuller	9/01/2021	10398	11	2,556.95
12	UK	Coghill	9/01/2021	10403	18	855.01

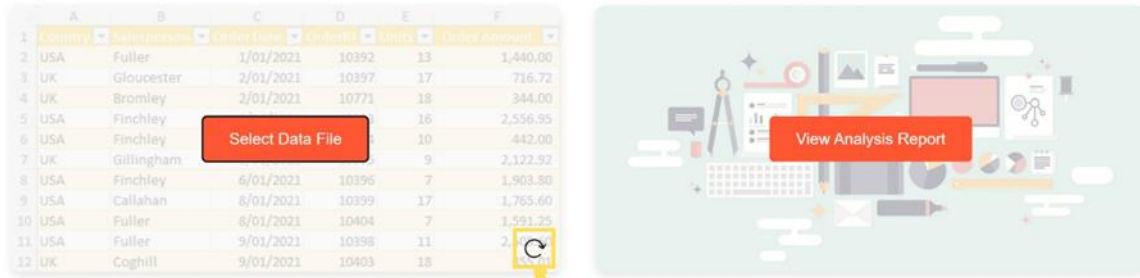
Select Data File

View Analysis Report

❖ If you accidentally selected the incorrect file or wish to select other file, click on the **Retry** icon at the bottom.

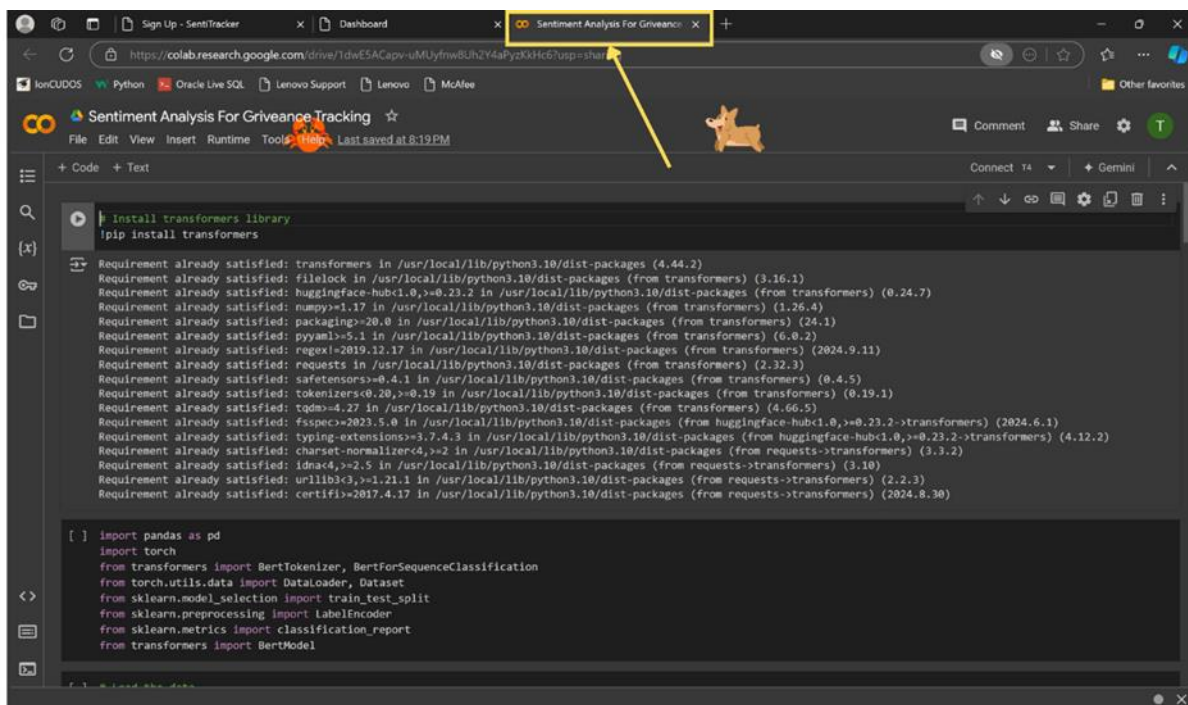


Welcome to the Analysis Arena!



5.2.2 Interpretation of Sentiment Analysis Report

❖ The sentiment analysis report will open in a new tab as shown below:



6. Data Management

Administrators and end users can manage grievances and export sentiment reports for further analysis.

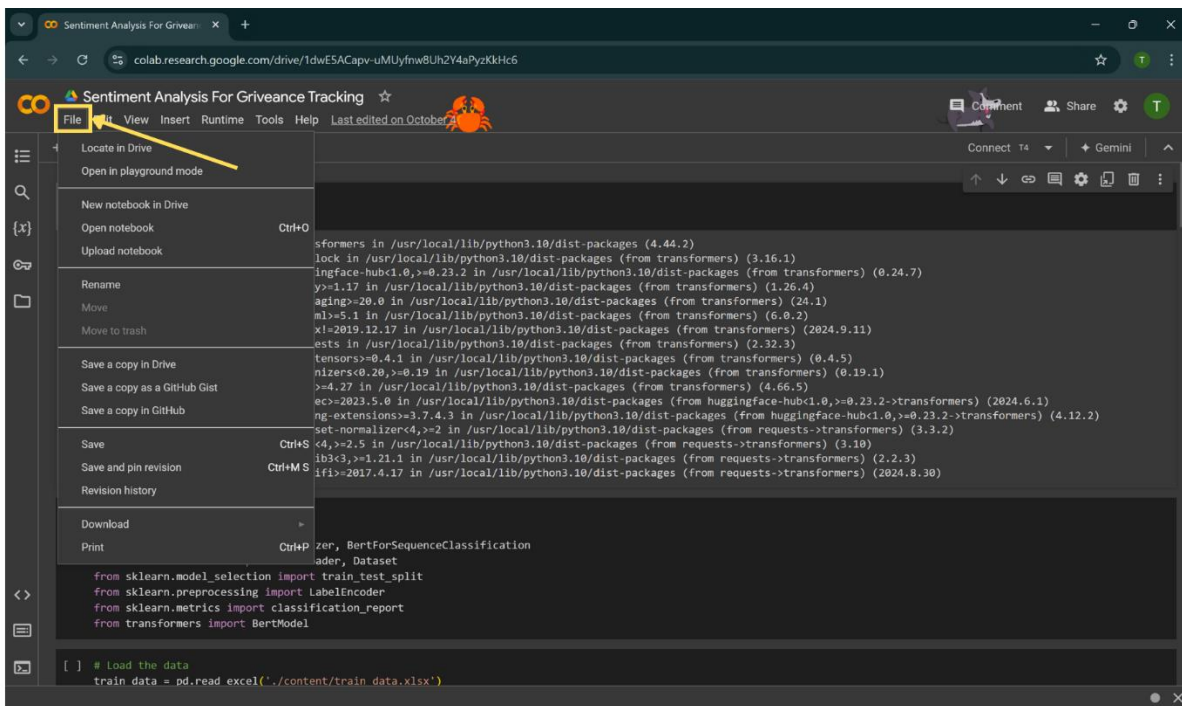
6.1 Managing Grievance Data

Administrators can access all submitted grievances through the dashboard, allowing them to view and categorize grievances.

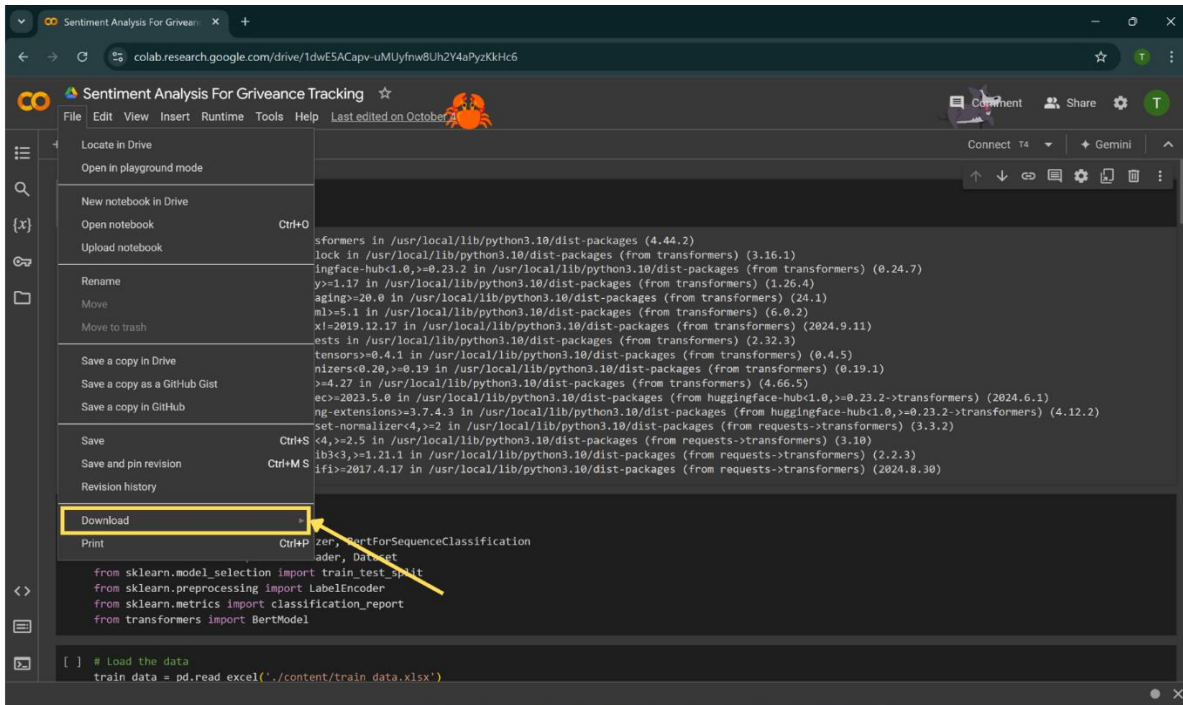
6.2 Exporting Sentiment Reports

Users and administrators can export sentiment reports in multiple formats for record-keeping or further analysis. To export:

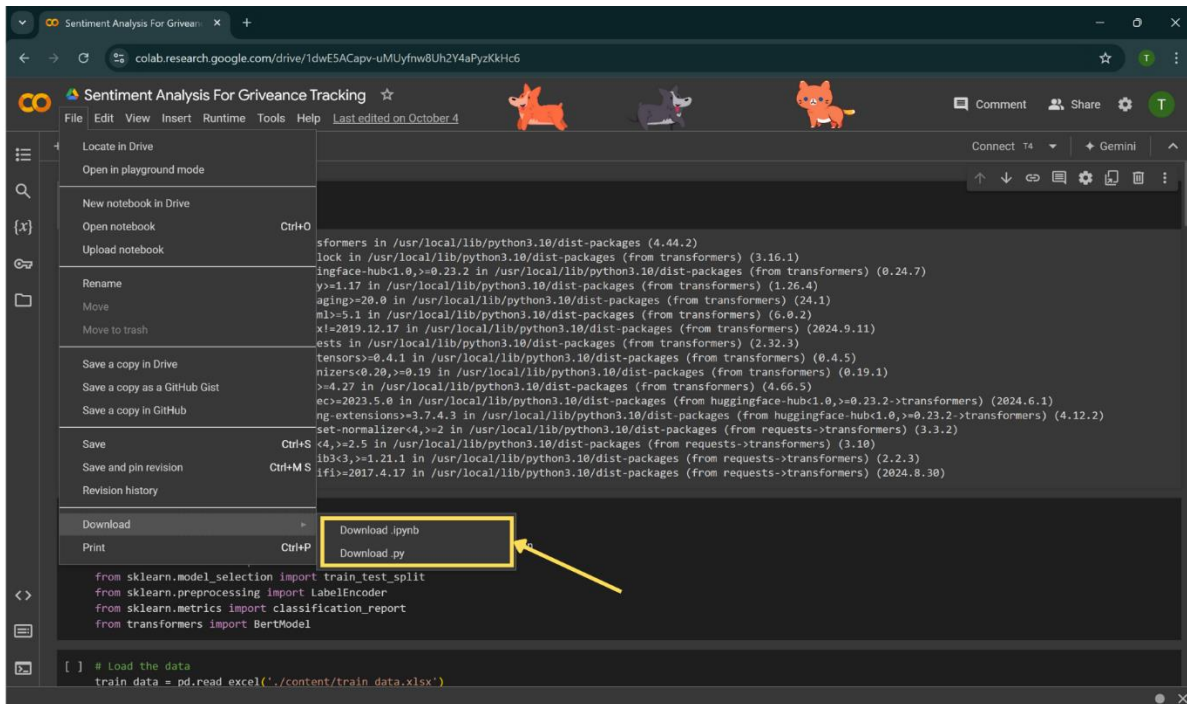
❖ Click on **File**.



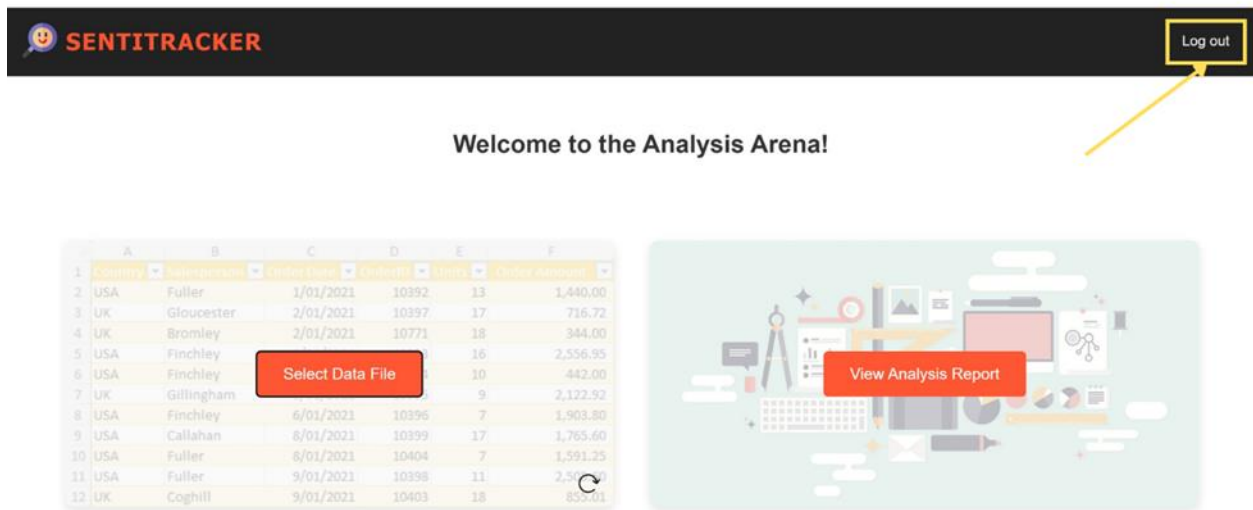
❖ Click on **Download**.



❖ Choose the desired download format (.ipynb, .py).



- ❖ Now Log out of the SentiTrack platform by clicking on **Log out** button on the top-right button once work is done.



7. FAQs and Troubleshooting

This section addresses common issues and provides solutions for troubleshooting.

7.1 Incorrect Sentiment Analysis Results

- ❖ Problem: The sentiment analysis result does not seem accurate.
- ❖ Solution: Ensure the uploaded data is clear and free of ambiguity. Check if the data contains enough context for a proper sentiment analysis. If the issue persists, contact the support team.

7.2 Contacting Support

If you encounter any issues while using the platform:

1. Navigate to the **Contact** section on the website.
2. Submit an email or make a call describing the issue(s).
3. You will receive an email response within 24–48 hours.