Open Source Intelligence Application

Cyber Security Technologies ITMS-548

Department of Information Technology and Management

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Project Plan

Objective:

The objective of this project is to develop a comprehensive open-source intelligence (OSINT) application using Flask that retrieves, visualizes, and displays details from Instagram, Twitter, Reddit, and YouTube profiles. The project will be completed in five phases: Planning, Development, Testing, Documentation, and Deployment.

Project Phases:

1. Planning Phase:
    - Tasks:
        i. Define project scope, objectives, and requirements
        ii. Identify essential project participants and their responsibilities
        iii. Create a detailed project plan outlining tasks, milestones, timelines, roles, and responsibilities
    - Milestones:
        i. Project Kickoff: Define project objectives, roles, and responsibilities. Set up a development environment.
    - Roles and Responsibilities:
        i. Project Manager: Oversees overall project execution, coordinates tasks, and ensures adherence to timelines and quality standards.
2. Development Phase:
    - Tasks:
        i. Set up the development environment
        ii. Implement Flask web application framework
        iii. Develop modules for retrieving data from Instagram, Twitter, Reddit, and YouTube
        iv. Integrate data visualization and display components
        v. Implement user interface for input and output of data
        vi. Ensure proper error handling and security measures
        vii. Review and optimize code for performance
    - Milestones:
        i. Development Complete: Implementation of core functionality for retrieving data from all supported platforms.
    - Roles and Responsibilities:
        i. Developers: Responsible for implementing specific modules, writing code, and conducting testing.
3. Testing Phase:
    - Tasks:
        i. Develop unit tests for individual components

        ii. Perform integration testing to ensure seamless interaction between modules
        iii. Identify and resolve any bugs or issues
    - Milestones:
        i. Testing Complete: Successful completion of unit tests, integration tests, and UAT. All identified bugs resolved.
    - Roles and Responsibilities:
        i. Tester: Conducts various tests including unit tests, integration tests, and user acceptance tests.
4. Documentation Phase:
    - Tasks:
        i. Create comprehensive documentation including setup instructions, usage guidelines, and API references
        ii. Document codebase with inline comments and explanations
        iii. Generate user manuals and tutorials for end-users
        iv. Prepare release notes highlighting new features and changes
    - Milestones:
        i. Documentation Complete: Comprehensive documentation prepared and finalized.
    - Roles and Responsibilities:
        i. Documentation Specialist: Creates and maintains project documentation including user manuals, API references, and release notes.
5. Deployment Phase:
    - Tasks:
        i. Deploy the application to a production environment
        ii. Make the application available for public access
    - Milestones:
        i. Deployment: Application deployed to production environment and made available for public access.
    - Roles and Responsibilities:
        i. Project Manager: Ensures a smooth deployment process and coordinates with the development team and stakeholders.

Milestones:

1. Project Kickoff: Define project objectives, roles, and responsibilities. Set up a development environment.
2. Development Complete: Implementation of core functionality for retrieving data from all supported platforms.
3. Testing Complete: Successful completion of unit tests, integration tests, and UAT. All identified bugs resolved.
4. Documentation Complete: Comprehensive documentation prepared and finalized.

5. Deployment: Application deployed to production environment and made available for public access.

Timelines:

- Planning Phase: 1 week
- Development Phase: 1 week
- Testing Phase: 1 week
- Documentation Phase: 1 week
- Deployment: 1 week

Roles and Responsibilities:

1. Project Manager: Oversees overall project execution, coordinates tasks, and ensures adherence to timelines and quality standards.
2. Developers: Responsible for implementing specific modules, writing code, and conducting testing and deploying the application.
3. Tester: Conducts various tests including unit tests, integration tests, and user acceptance tests.
4. Documentation Specialist: Creates and maintains project documentation including user manuals, API references, and release notes.

Project Management Tools:

- Task Tracking: Jira, Trello
- Version Control: Git, GitHub
- Communication: Teams, WhatsApp

Risk Management Plan

Earned Value Sheet

Project Management Plan OSINT

Testcases

Intelligent Application with User Interface

Github Link

Objective: Developed a fully functional open-source intelligent application with a user-friendly GUI. The application can retrieve and process data from at least four different data sources or APIs, providing users with valuable insights and functionalities.

Key Features:

1. Instagram Details: Users can input an Instagram username to retrieve details such as username, full name, biography, follower count, following count, total posts, etc. The application also fetches and displays details of the user's recent posts including captions, likes, comments, and post URLs.

2. Twitter Details: Similar to Instagram, users can input a Twitter username to fetch details such as screen name, real name, follower count, following count, and total tweets.

3. Reddit Details: Users can input a Reddit username to retrieve details such as username, post karma, comment karma, total posts, total comments, and the list of recent posts and comments.

4. YouTube Details: Users can input a YouTube username to retrieve details such as channel name, description, country, subscriber count, view count, video count, and the list of recent videos including titles, descriptions, published dates, thumbnails, and video IDs.

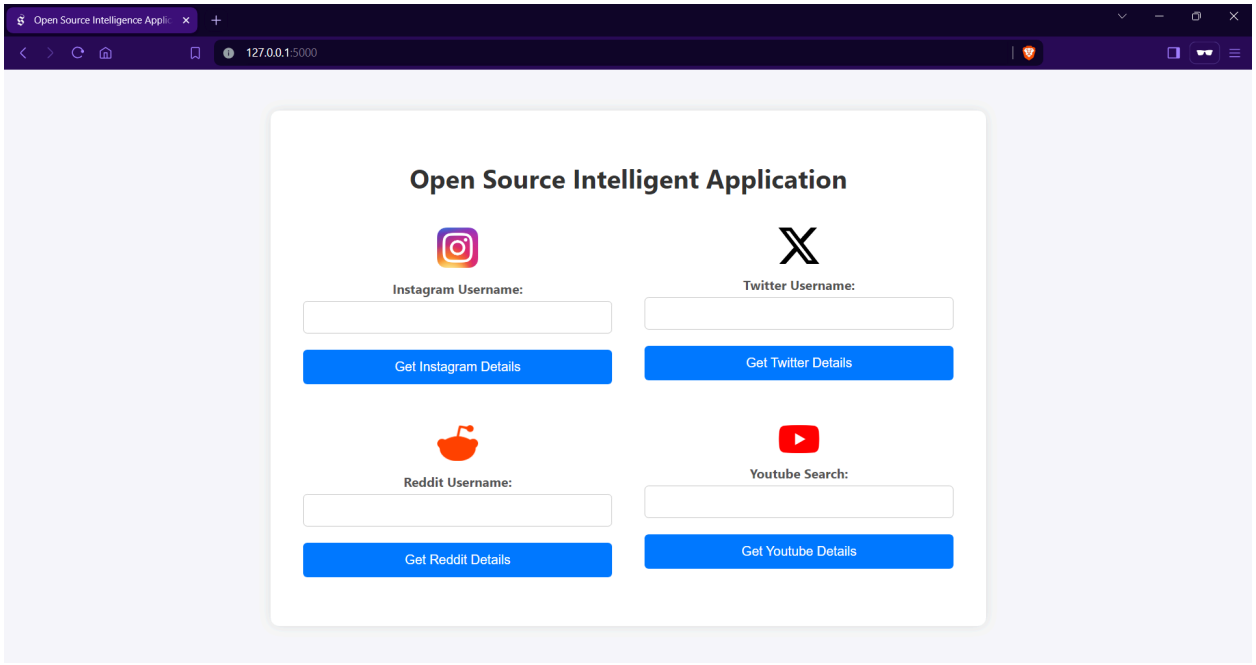
Development Phases:

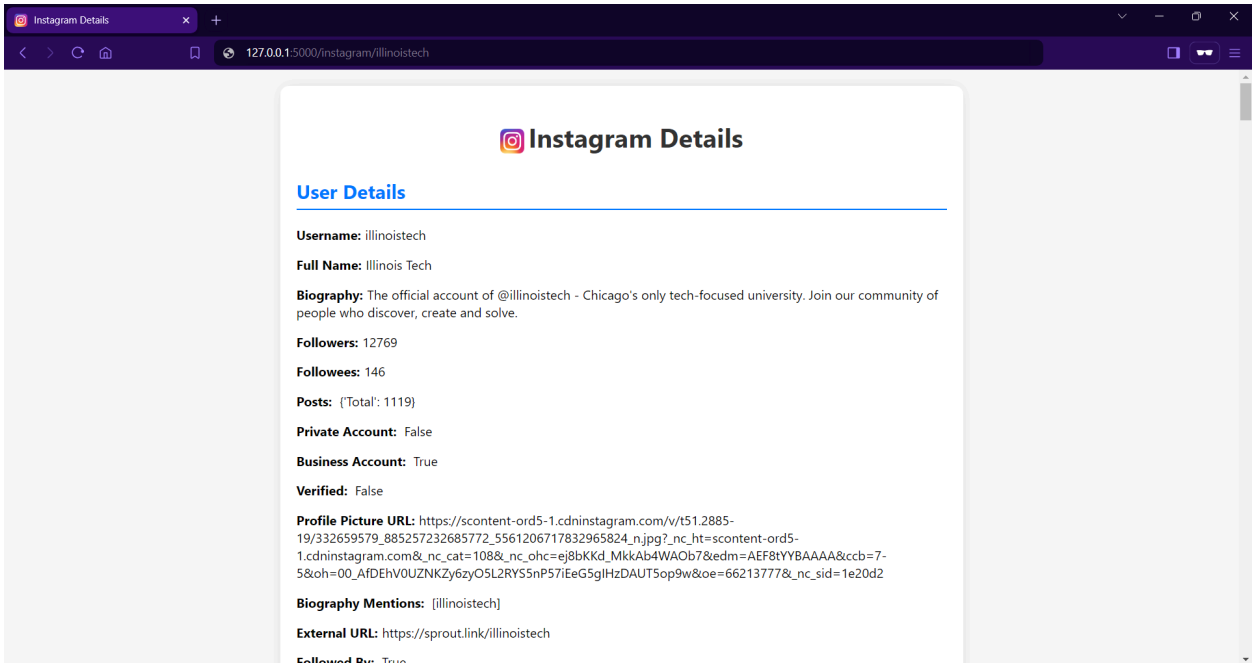
1. Planning and Requirements Gathering: Defined project scope, objectives, and requirements. Identified data sources and APIs to integrate.
2. GUI Design and Prototyping: Designed the user interface layout, navigation flow, and visual elements. Created prototypes to visualize the application's look and feel.
3. Backend Development: Implemented backend functionality to retrieve data from selected APIs, process data, and perform analysis.
4. Frontend Development: Developed the frontend components using HTML, CSS, and JavaScript to create an interactive web application.
5. Integration and Testing: Integrated backend and frontend components. Conducted thorough testing to ensure functionality, usability, and reliability.
6. Refinement and Optimization: Fine-tuned the application, optimized performance, and addressed any identified issues or feedback.
7. Documentation and Release: Prepared comprehensive documentation including user manuals, API references, and release notes. Released the application to the open-source community.

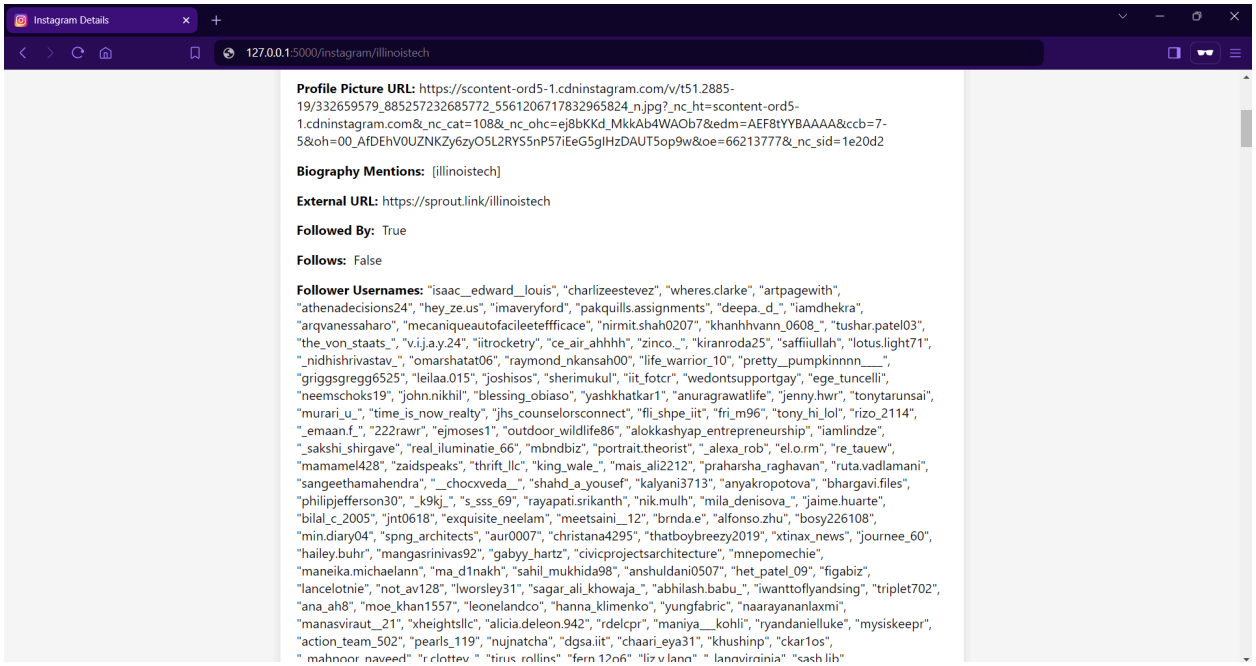
Tools and Technologies:

- Programming Languages: Python (for backend development), JavaScript (for frontend development), HTML, CSS
- Frameworks and Libraries: Flask (for backend web development), Requests (for API integration), Pandas (for data processing), Matplotlib and Plotly (for data visualization)
- Version Control: Git, GitHub
- Development Environment: IDEs (Visual Studio Code), Virtual Environments (virtualenv)
- Collaboration Tools: WhatsApp, Teams, GitHub

Screenshots of the Application:



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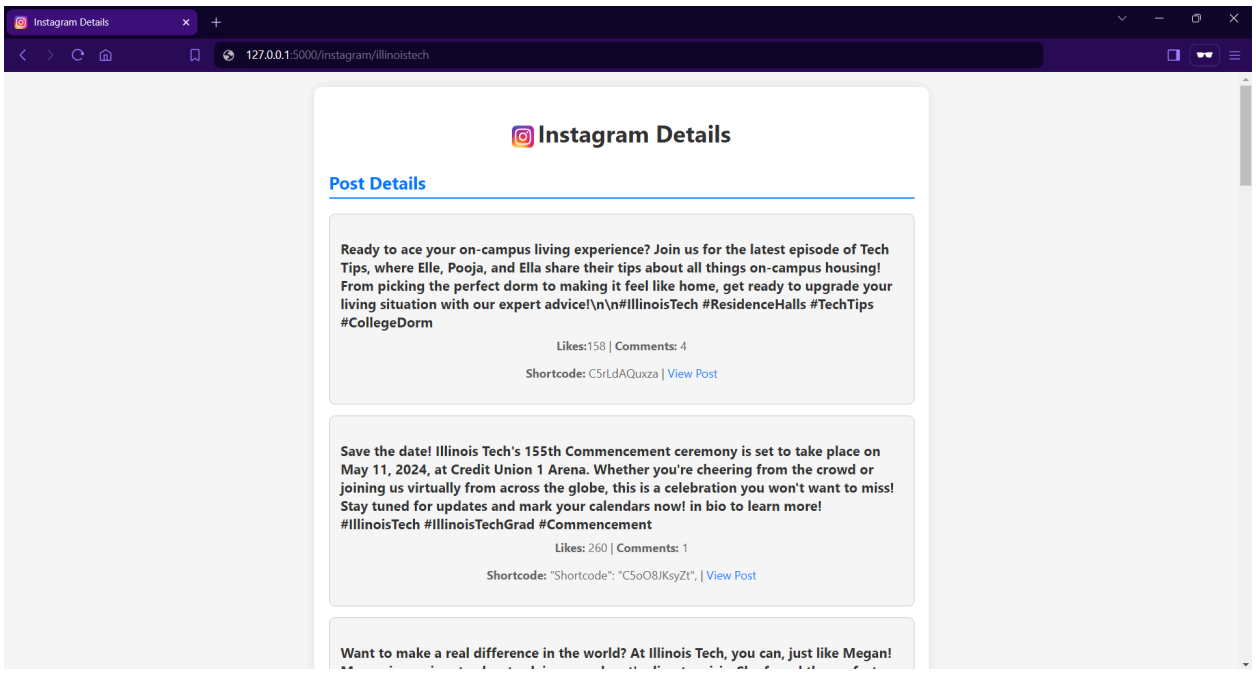
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Ready to ace your on-campus living experience? Join us for the latest episode of Tech Tips, where Elle, Pooja, and Ella share their tips about all things on-campus housing! From picking the perfect dorm to making it feel like home, get ready to upgrade your living situation with our expert advice!\n\n#IllinoisTech #ResidenceHalls #TechTips #CollegeDorm
Likes:158 | **Comments:** 4
Shortcode: C5rLdAQuxza | View Post
Save the date! Illinois Tech's 155th Commencement ceremony is set to take place on May 11, 2024, at Credit Union 1 Arena. Whether you're cheering from the crowd or joining us virtually from across the globe, this is a celebration you won't want to miss! Stay tuned for updates and mark your calendars now! in bio to learn more! #IllinoisTech #IllinoisTechGrad #Commencement
Likes: 260 | **Comments:** 1
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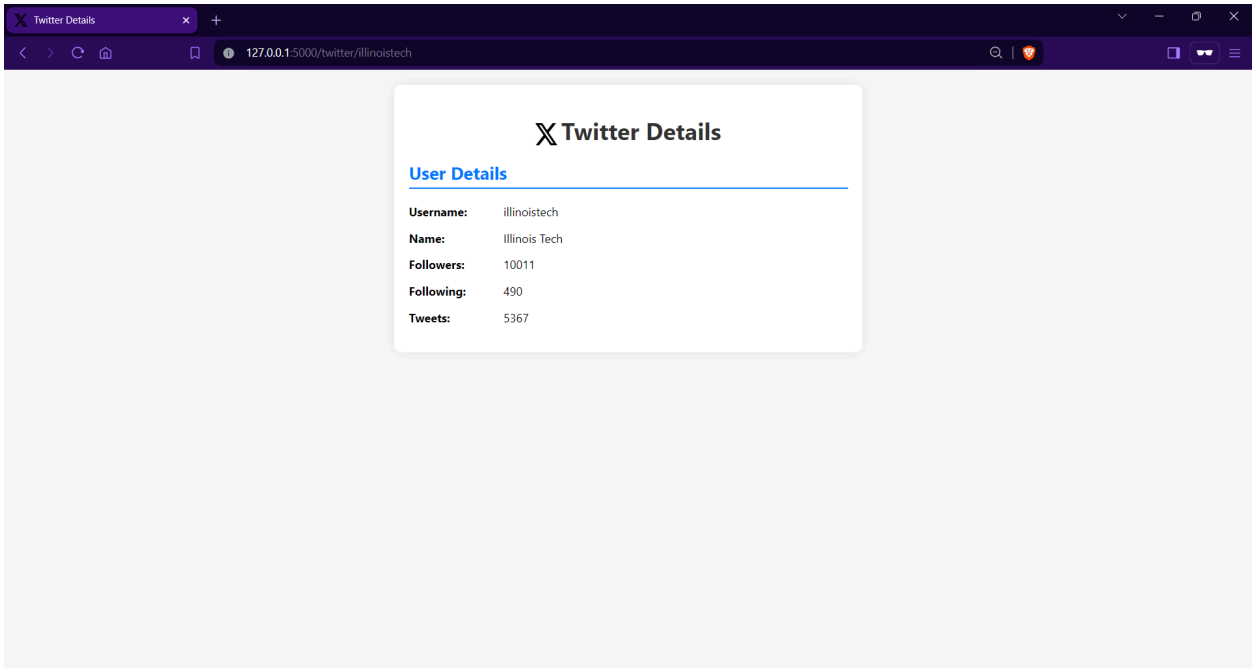
Want to make a real difference in the world? At Illinois Tech, you can, just like Megan!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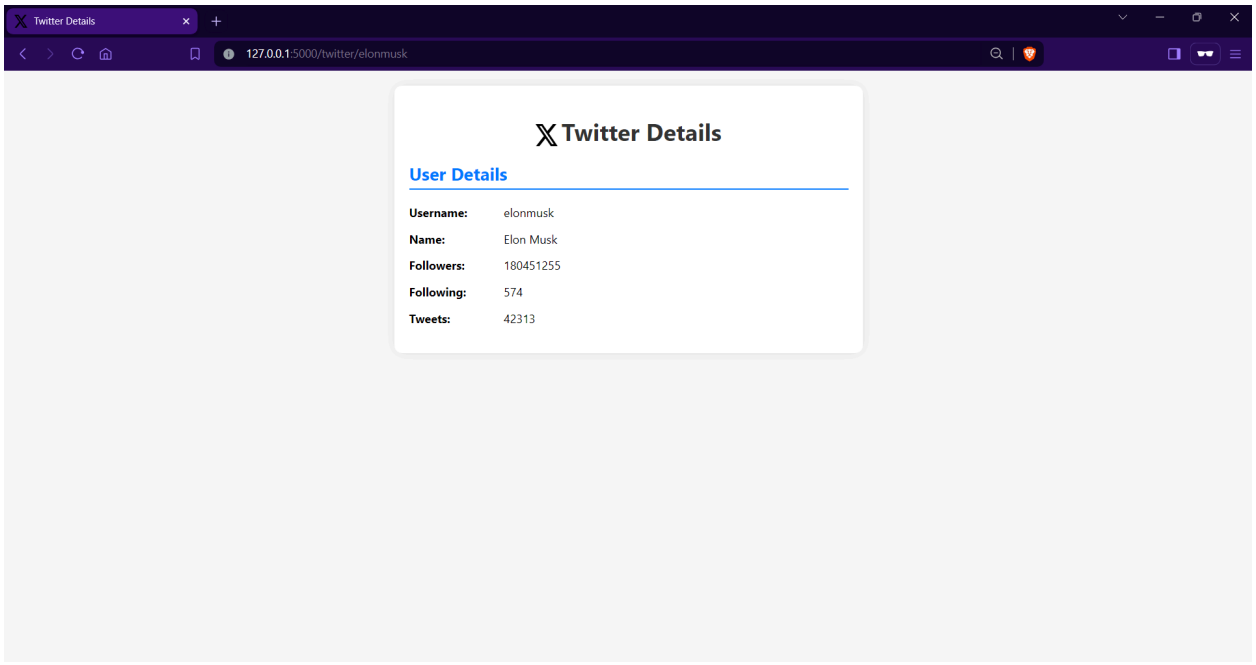
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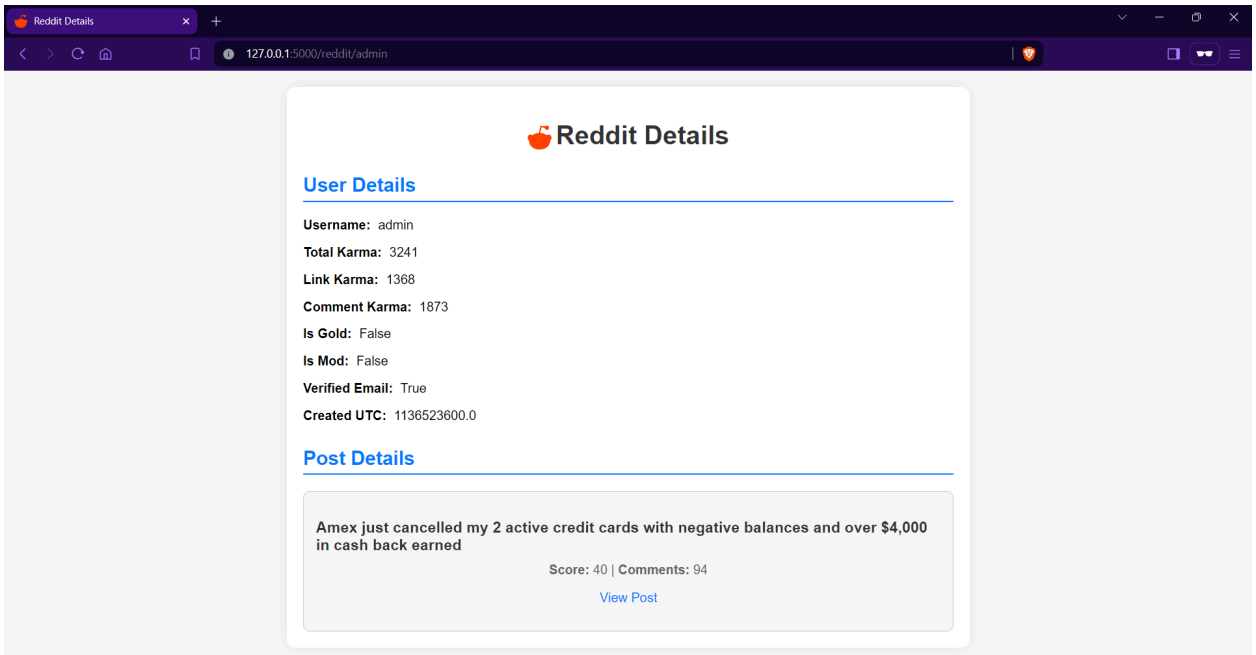
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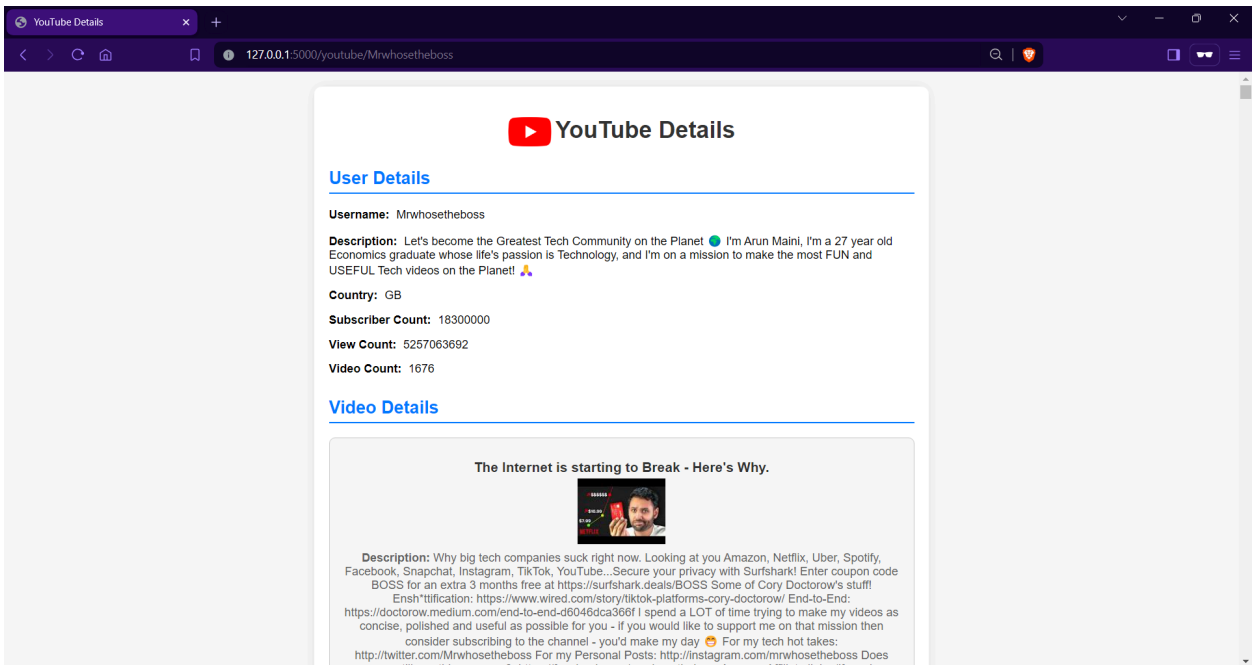
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Video Count: 1676
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The Internet is starting to Break - Here's Why.
Description: Why big tech companies suck right now. Looking at you Amazon, Netflix, Uber, Spotify, Facebook, Snapchat, Instagram, TikTok, YouTube...Secure your privacy with Surfshark! Enter coupon code BOSS for an extra 3 months free at https://surfshark.deals/BOSS Some of Cory Doctorow's stuff! Ensh*ttification: https://www.wired.com/story/tiktok-platforms-cory-doctorow/ End-to-End: https://doctorow.medium.com/end-to-end-d6046dca366f I spend a LOT of time trying to make my videos as concise, polished and useful as possible for you - if you would like to support me on that mission then consider subscribing to the channel - you'd make my day 😁 For my tech hot takes: http://twitter.com/Mrwhosetheboss For my Personal Posts: http://instagram.com/mrwhosetheboss Does

YouTube Details

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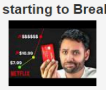
Video Details

The Internet is starting to Break - Here's Why.



Description: Why big tech companies suck right now. Looking at you Amazon, Netflix, Uber, Spotify, Facebook, Snapchat, Instagram, TikTok, YouTube...Secure your privacy with Surfshark! Enter coupon code BOSS for an extra 3 months free at https://surfshark.deals/BOSS Some of Cory Doctorow's stuff! Ensh*ttification: https://www.wired.com/story/tiktok-platforms-cory-doctorow/ End-to-End: https://doctorow.medium.com/end-to-end-d6046dca366f I spend a LOT of time trying to make my videos as concise, polished and useful as possible for you - If you would like to support me on that mission then consider subscribing to the channel - you'd make my day 😍 For my tech hot takes: http://twitter.com/Mrwhosetheboss For my Personal Posts: http://instagram.com/mrwhosetheboss Does anyone still use this anymore?: https://facebook.com/mrwhosetheboss Amazon Affiliate links (if you buy anything through these it will support the channel and allow us to buy better gear!): Amazon US: https://amzn.to/3mFix9d Amazon UK: https://amzn.to/3GMPPtM My Filming Gear: https://bit.ly/35Cuxwl Music is from Epidemic sound: http://share.epidemicsound.com/pHDFT

Published At: 2024-04-13T11:07:21Z

Video ID: wVYG1mu8Lg8

Video URL: Watch Video

I tested the viral Humane AI Pin - it's not good.

Description: I spend a LOT of time trying to make my videos as concise, polished and useful as possible for you - If you would like to support me on that mission then consider subscribing to the channel - you'd make my day 😍 For my tech hot takes: http://twitter.com/Mrwhosetheboss For my Personal Posts:

YouTube Details

127.0.0.1:5000/youtube/Mrwhosetheboss

Olympus SZ-10 Camera/ Hama Star 61 Tripod Review

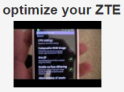
Description: A quick review of the Olympus SZ10 digital camera with 18X optical zoom, and the Hama Star 61 Tripod which I bought with it (I Thoroughly recommend both).

Published At: 2011-08-09T22:18:17Z

Video ID: 9G3r2UuKj3Q

Video URL: Watch Video

How to optimize your ZTE Blade



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Published At: 2011-04-22T12:36:35Z

Video ID: M_QU_Y93eLc

Video URL: Watch Video

Data Analysis Report

Introduction: In this data analysis report, we present the findings obtained from capturing and processing data using our Open Source Intelligence Application. The application retrieves data from various sources, including Instagram, Twitter, Reddit, and YouTube, and performs comprehensive analysis to derive meaningful insights.

Data Sources:

1. Instagram: Captures user profiles, follower counts, post details, and engagement metrics.
2. Twitter: Retrieves user profiles, follower counts, tweet details, and engagement statistics.
3. Reddit: Gathers user profiles, karma scores, post details, and comment metrics.
4. YouTube: Fetches channel details, subscriber counts, video information, and view statistics.

Analysis Approach:

1. Data Retrieval: Data is captured from each source using API requests and stored in a structured format.
2. Data Processing: The captured data is processed to extract relevant information, calculate metrics, and perform analysis.
3. Data Visualization: Visualizations such as charts, graphs, and tables are created to present the analyzed data in a clear and insightful manner.
4. Insights Generation: Based on the analyzed data, key insights and trends are identified to provide valuable information to users.

Findings:

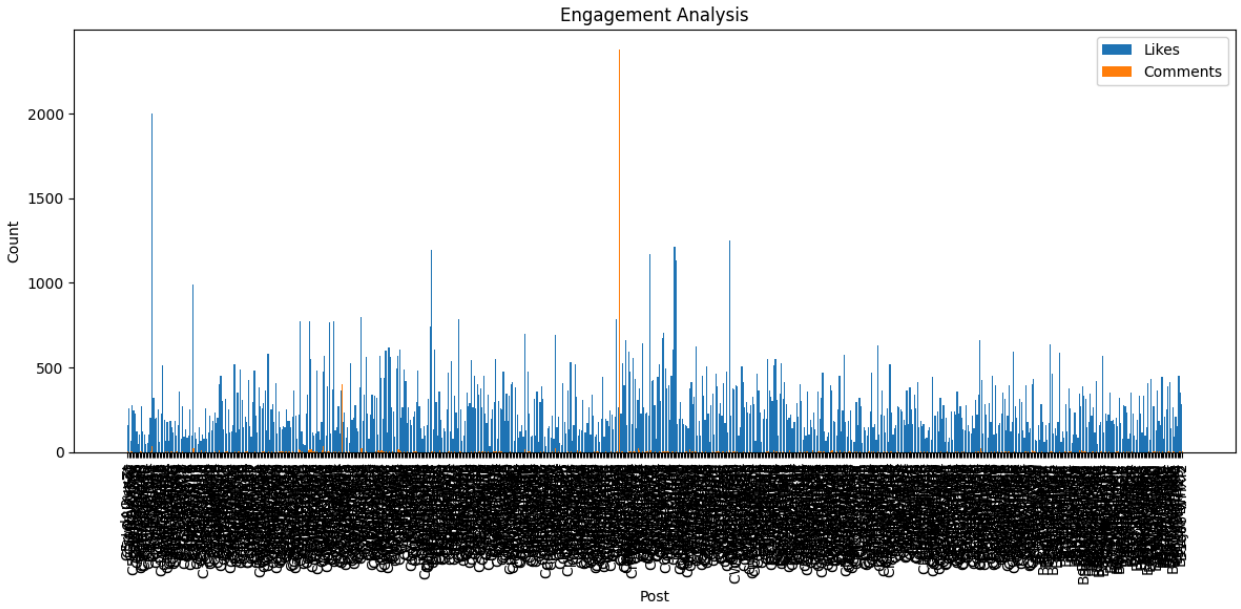
1. Instagram Analysis:
    - User Engagement: Analysis of likes, comments, and post frequency reveals user engagement patterns.
    - Popular Content: Identification of top-performing posts based on likes and comments.
    - Follower Growth: Tracking follower count over time to assess growth trends.
2. Twitter Analysis:
    - Tweet Engagement: Analysis of retweets, likes, and replies to measure tweet engagement.
    - Influencer Identification: Identifying influential users based on follower count and engagement metrics.
    - Trending Topics: Monitoring trending topics and hashtags to identify popular discussions.

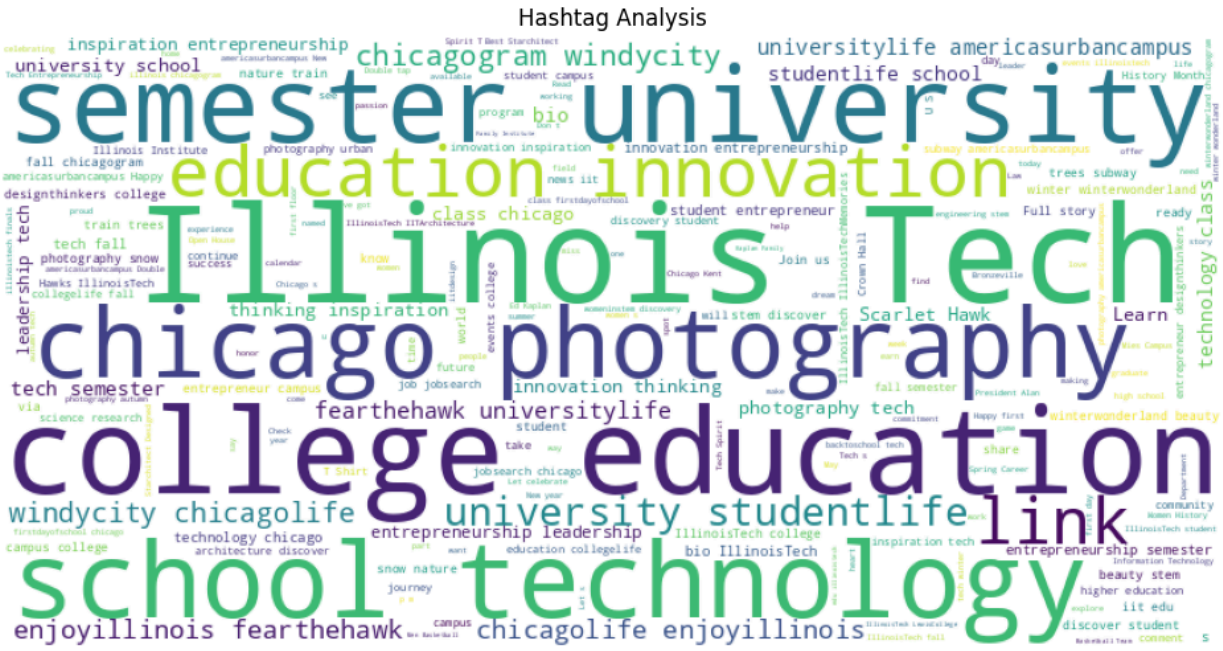
3. Reddit Analysis:
    - Community Engagement: Analysis of post karma, comment karma, and participation levels within communities.
    - Content Analysis: Identification of popular topics, subreddits, and user-generated content.
    - User Influence: Assessing user influence based on karma scores and contributions.
4. YouTube Analysis:
    - Channel Performance: Analysis of subscriber growth, view counts, and video engagement metrics.
    - Content Analysis: Identification of popular video topics, trends, and viewer demographics.
    - Viewer Engagement: Tracking viewer interaction through likes, dislikes, and comments.

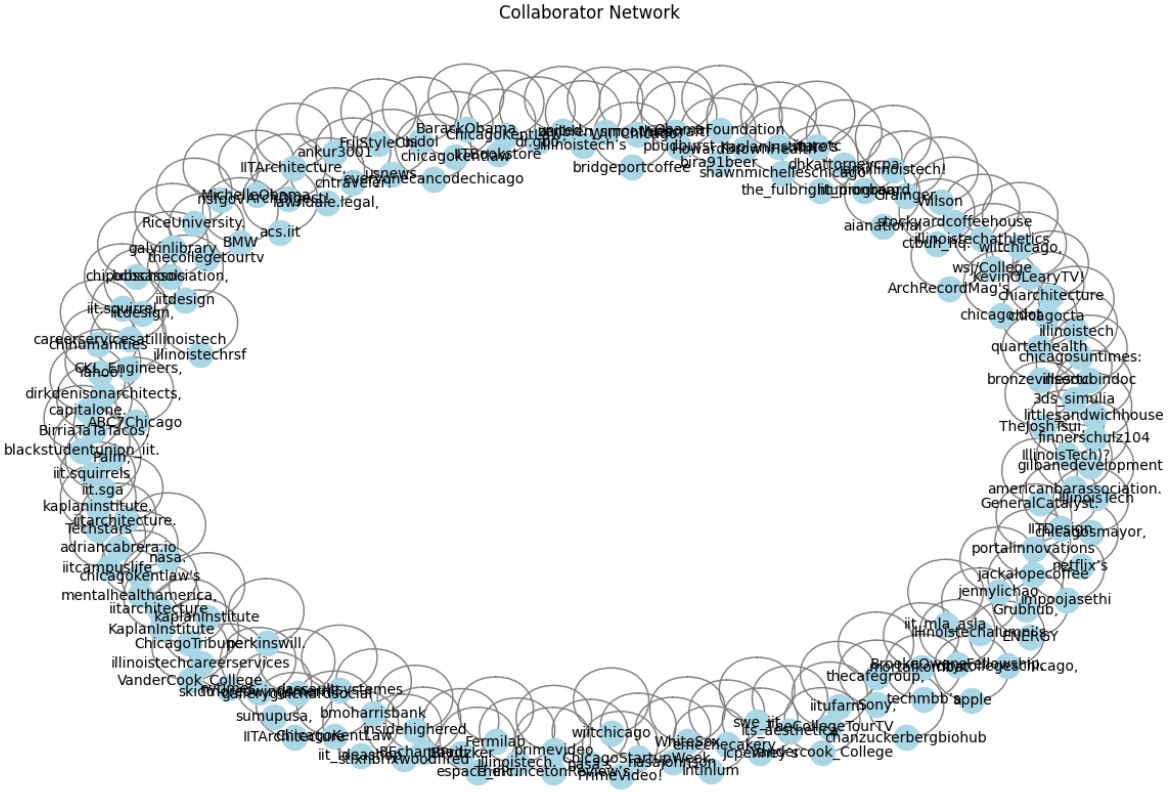
Insights:

1. User engagement on Instagram tends to peak during certain times of the day, indicating optimal posting times.
2. Influential Twitter users with a large follower base can significantly impact the reach and visibility of content.
3. Reddit communities with high levels of engagement and active participation foster vibrant discussions and content creation.
4. YouTube channels that consistently produce high-quality content experience steady growth in subscribers and viewership.

Screenshots:



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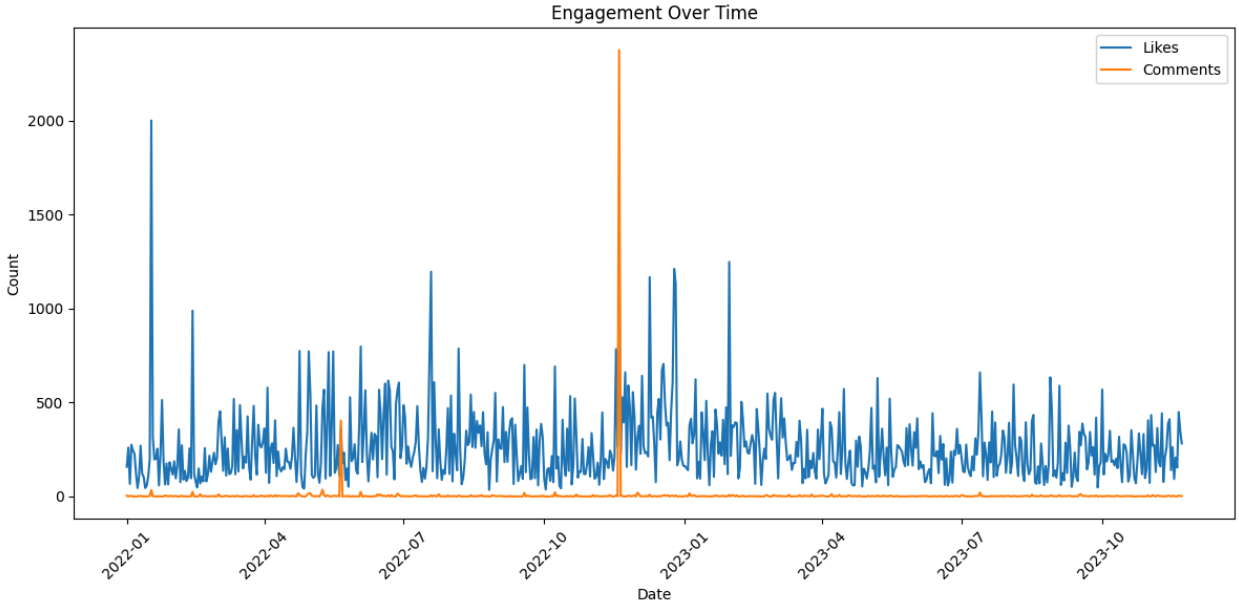
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Comments
Count
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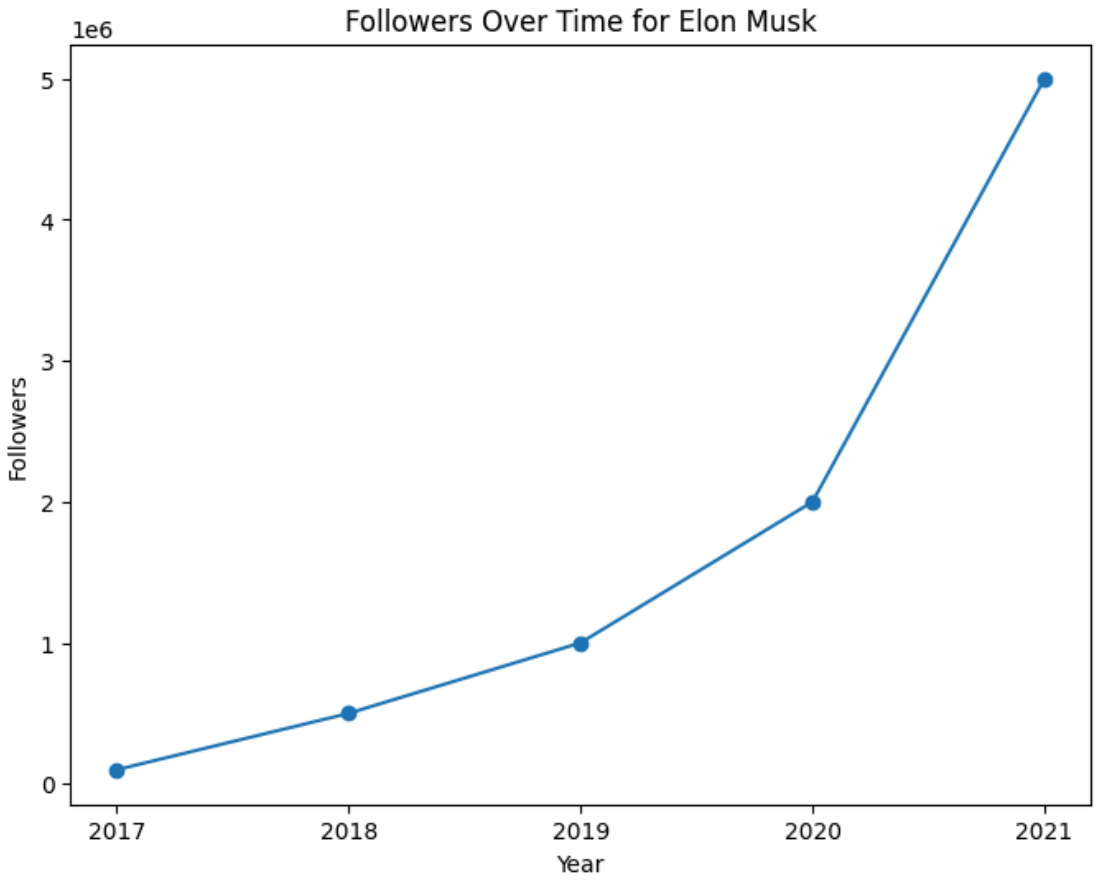
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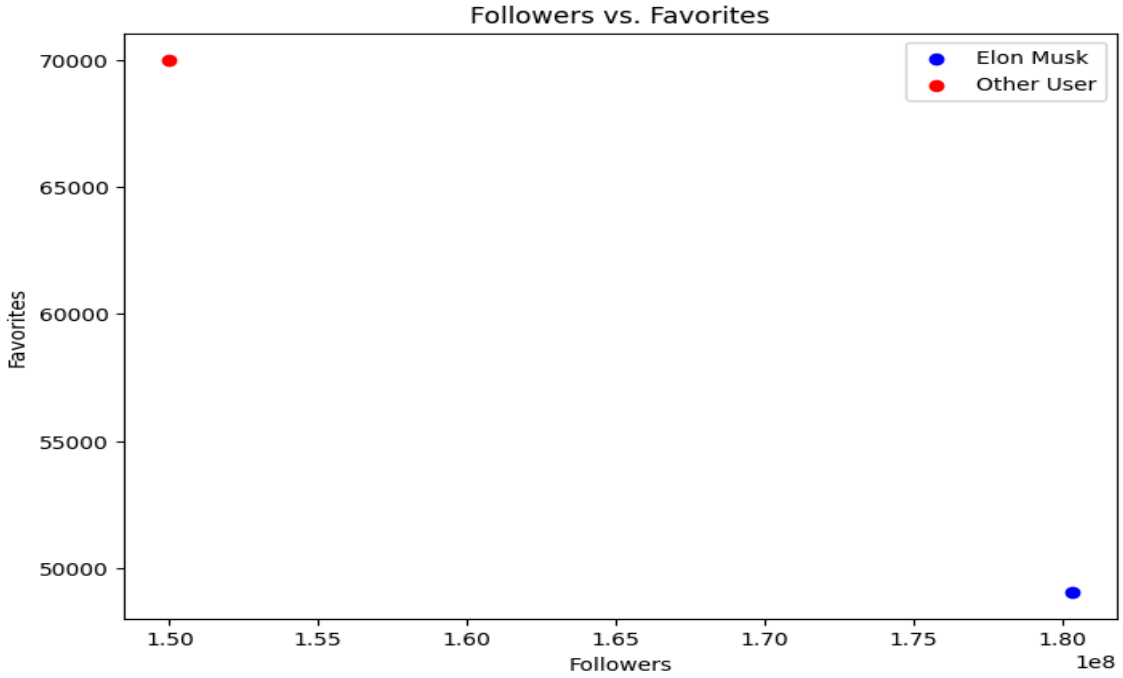
Followers
2017
2018
2019
2020
2021
Year


Followers vs. Favorites
Elon Musk
Other User
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65000
60000
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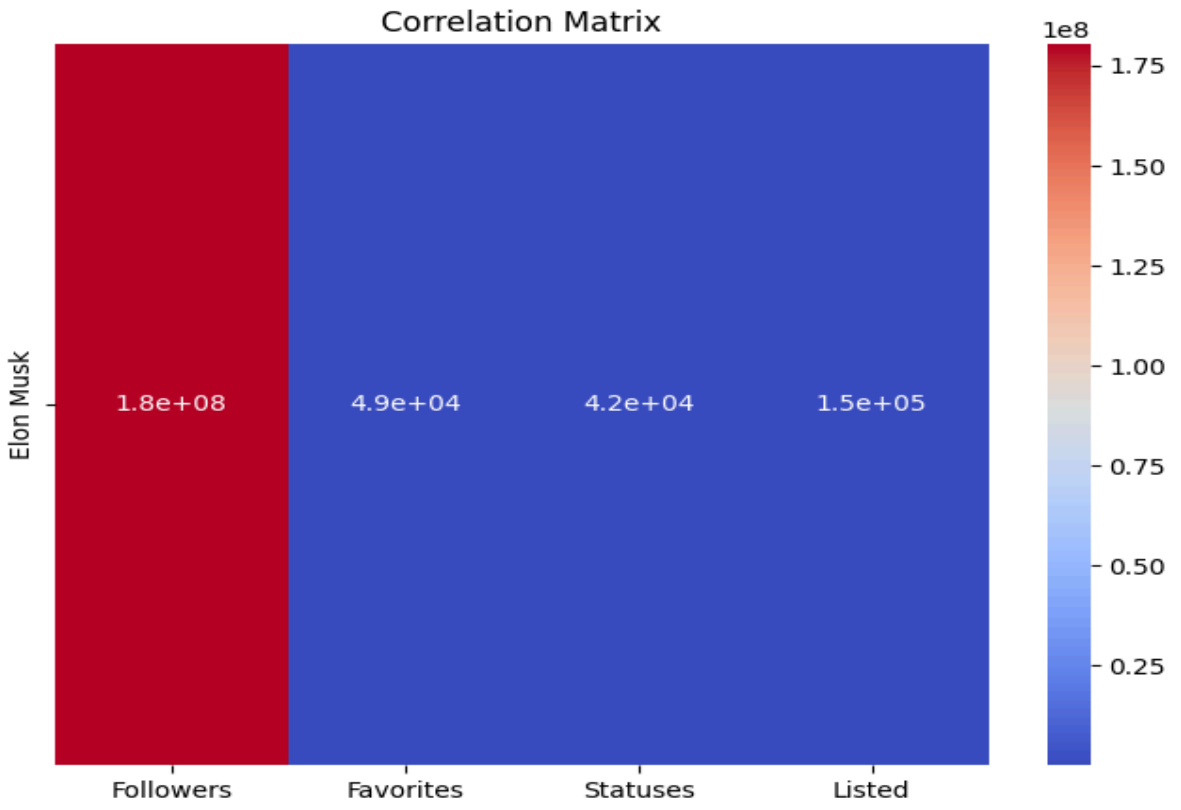
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Elon Musk
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4.2e+04
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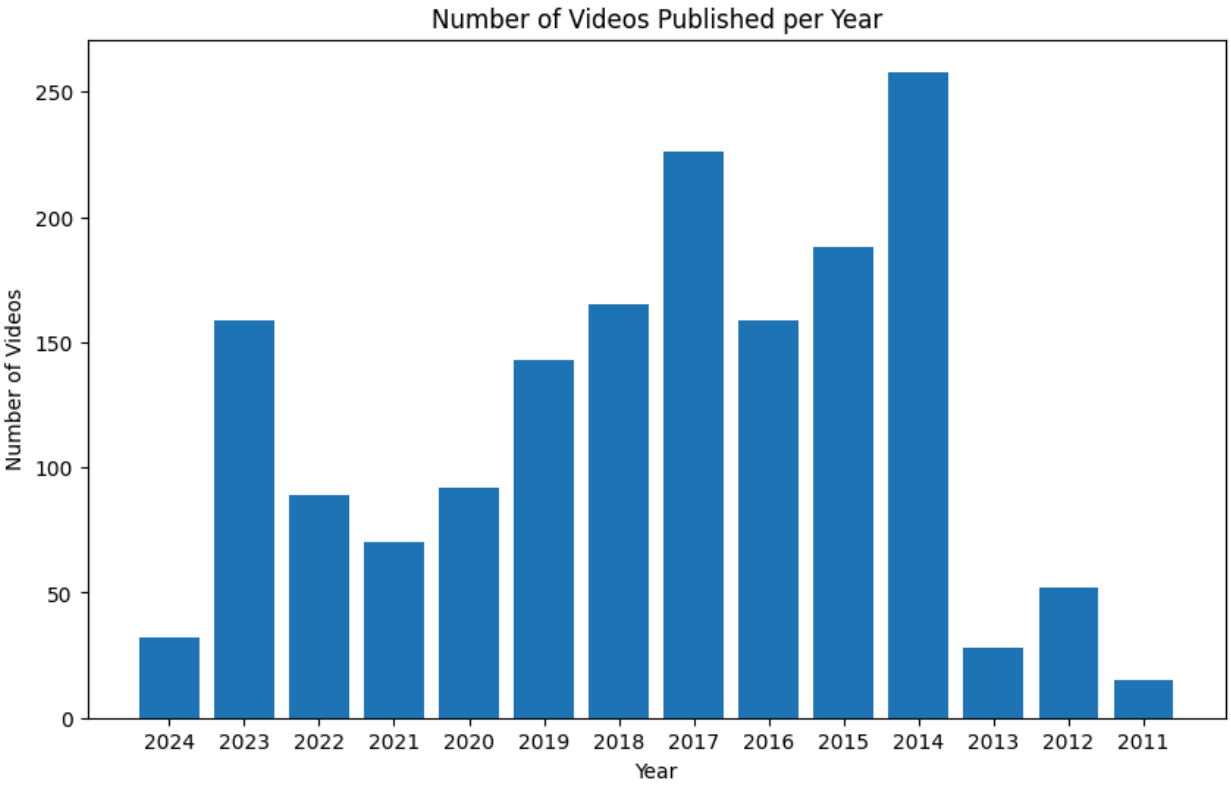
Followers
Favorites
Statuses
Listed


Number of Videos Published per Year
Number of Videos
250
200
150
100
50
0
2024
2023
2022
2021
2020
2019
2018
2017
2016
2015
2014
2013
2012
2011
Year

GitHub Repository

Repository Name: Open Source Intelligence Application

Repository Link: https://github.com/sree-charan/osint

Documentation: https://github.com/sree-charan/osint/blob/main/README.md

Description: The GitHub repository for the Open Source Intelligence Application contains all code, documentation, and resources related to the project. It serves as a centralized hub for collaboration, version control, and project management.

Key Components:

1. Code: Contains the source code for the application, organized into separate directories for backend, frontend, and any additional modules or scripts.
2. Documentation: Includes comprehensive documentation such as project plan, user manuals, API references, and release notes.
3. Resources: Contains any additional resources, assets, or datasets used in the project.
4. Issues: Tracks project tasks, bugs, and feature requests using GitHub Issues, allowing for easy tracking and assignment.
5. Pull Requests: Facilitates code review and collaboration through pull requests, enabling contributors to propose changes and improvements to the codebase.

Usage:

1. Clone the repository to your local machine using the following command:
   git clone https://github.com/sree-charan/osint.git
2. Navigate to the cloned repository directory:
   cd osint
3. Explore the code, documentation, and resources within the repository.
4. Make changes or contributions as needed, following the project's contribution guidelines.
5. Push changes to your forked repository and create pull requests to propose changes to the main repository.

Collaboration:

1. Fork the repository to your GitHub account to create your own copy of the project.
2. Make changes, enhancements, or bug fixes in your forked repository.
3. Submit pull requests to the main repository to propose your changes for review and integration.
4. Collaborate with other contributors through GitHub Issues, pull request comments, and discussions.