# Chinese Debt Trap: Insights on money lending patterns

China is a super power in the world and has a well-established economy. China is trying to increase its dependency in the world by lending money all over the world. First they lend money and then if the borrower is no able to pay back the borrowed amount of money, they put clauses in the contract which forces the borrower to allow China to establish their military troops in their country. This pattern of China setting troops over the world is a threat to all other countries in the world. In this project we are trying to analysis the lending data of China and extract some insights from the data using Business Intelligence tools. To Extract the Insights from the data and put the data in the form of visualizations, Dashboards and Story we employed Tableau tool.

Technical Architecture:
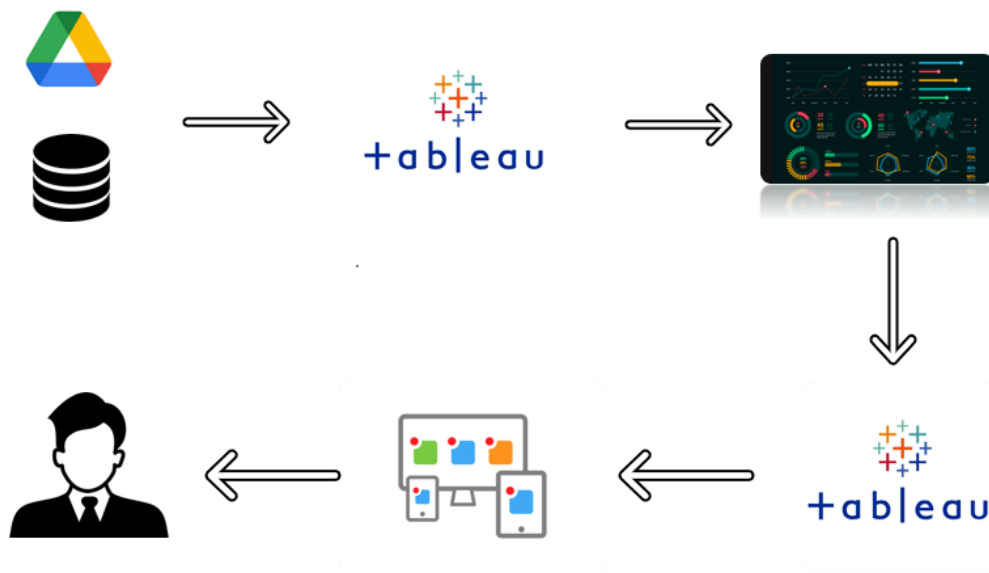
Project Flow

To accomplish this, we have to complete all the activities listed below,

- Define Problem / Problem Understanding
  - o Specify the business problem
  - o Business requirements
  - o Literature Survey
  - o Social or Business Impact.
- Data Collection & Extraction from Database
  - o Collect the dataset,
  - o Storing Data in DB
  - o Perform SQL Operations
  - o Connect DB with Tableau
- Data Preparation
  - o Prepare the Data for Visualization
- Data Visualizations
  - o No of Unique Visualizations
- Dashboard
  - o Responsive and Design of Dashboard
- Story
  - o No of Scenes of Story
- Performance Testing
  - o Amount of Data Rendered to DB '
  - o No of Calculation Fields
  - o No of Visualizations/ Graphs
- Web Integration
  - o Dashboard and Story embed with UI With Flask

Milestone 1: Define Problem / Problem Understanding

Activity 1: Specify the business problem

Refer Project Description

Activity 2: Business requirements

This project is useful from the perspective of countries who are in debt. They tend to borrow money from China which in turn results in their downfall. When China sets up their troops in various countries, it poses a threat to their neighboring countries. The ultimate goal is to gain insights and improve performance through data visualization techniques.

Activity 3: Literature Survey

A literature survey for the money lending analysis of China would involve researching and reviewing previous studies, articles, and reports on the topic. This could include information on the methods and techniques used for financial analysis of banks, as well as the results and conclusions of these studies. Some potential areas of focus for a literature survey on lending analysis of China could include:

Risk management, which involves identifying, assessing, and mitigating the various risks facing a country, such as defense risk, market risk, and operational risk.

The peace treaties signed by China with various countries and the organizations China is a part of.

Activity 4: Social or Business Impact.

Social Impact: This project throws light on the lending patterns of China, how they are targeting countries in Africa where they lend money and then eventually set up their troops over there. China tries to lend money to countries that have a coast line where they can build a port. China is currently trying to lend money to countries that surround India.

Business Model/Impact: The business impact of this project is to the countries that are in debt or are planning to take loans in huge amounts. The reasons are stated in the projects as how China gives loans and what happens thereafter.

Milestone 2: Data Collection & Extraction from Database

Data collection is the process of gathering and measuring information on variables of interest, in

an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

Activity 1: Downloading the dataset

Please use the link to download the dataset: Link

Activity 1.1: Understand the data

Data contains all the meta information regarding the columns described in the CSV files

Column Description of the Dataset:

1. Expand All | Collapse All: Name of the borrower

2. YEAR: Year of giving loan

3. AMOUNT: Total loan given in Million dollars

4. LENDER: Name of the bank giving loan

5. BORROWER: department of the borrower

6. SECTOR: Sector of the borrower

7. SENSITIVE TERRITORY OVERLAP: Territory Overlap

8. Country: Country of the borrower

Activity 2: Storing Data in DB & Perform SQL Operations

Explanation video link:

https://drive.google.com/file/d/1t4WxAOmg5bFCGYhcr8_4aF-AllOZcKfR/view?usp=sharing

Activity 3: Connect DB with Tableau

Explanation video link:

Milestone 3: Data Preparation

Activity 1: Prepare the Data for Visualization

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

Milestone 4: Data Visualization

Data visualization is the process of creating graphical representations of data to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

Activity 1: No of Unique Visualizations

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of banks include bar charts, line charts, heat maps, scatter plots, pie charts,Maps etc. These visualizations can be used to compare performance, track changes over time, show distribution, and relationships between variables, breakdown of revenue and customer demographics, workload, resource allocation and location of banks.

Activity 1.1 : Distribution of loans using map

Explanation video link:

https://drive.google.com/file/d/1MHHgk6widYZZgULo76RXGsVJGrlfW8A1/view?usp=drive_link

Activity 1.2: Number of loans given according to year

Explanation video link:
https://drive.google.com/file/d/1eiP_W38tZL46g0ohm6DdVsUd63kYo5u3/view?usp=drive_link

Activity 1.3: Sum of loans given according to year

Explanation video link:
https://drive.google.com/file/d/1eiP_W38tZL46g0ohm6DdVsUd63kYo5u3/view?usp=drive_link

Activity 1.4: Number of loans given according to sector

Explanation video link:
https://drive.google.com/file/d/1Fp6L7IzYD9hDYQIuH94pGIvw6nikaFll/view?usp=sharing

Activity 1.5: Sum of loans given according to sector

Explanation video link:

https://drive.google.com/file/d/1Fp6L7IzYD9hDYQIuH94pGIvw6nikaFll/view?usp=sharing

Activity 1.6: Number of loans taken by country

Explanation video link:

https://drive.google.com/file/d/1yqUF36Fq9kvR1293PhCR9lDC5_zfyLo2/view?usp=drive_link

Activity 1.7: Sum of amount of loans taken by country

Explanation video link:

https://drive.google.com/file/d/1yqUF36Fq9kvR1293PhCR9lDC5_zfyLo2/view?usp=drive_link

Activity 1.8: Number of loans given according to the territory overlap

Explanation video link:

https://drive.google.com/file/d/1B2wGdodM_klmy_v-SRGJBG3vnfMyWNZz/view?usp=drive_link

Activity 1.9: Sum of loans given according to the territory overlap

Explanation video link:

https://drive.google.com/file/d/1B2wGdodM_klmy_v-SRGJBG3vnfMyWNZz/view?usp=drive_link

Activity 1.10: Number of loans given according to banks

Explanation video link:

https://drive.google.com/file/d/1VJkOnFUvccXnuuQ1g0Su6zJJvDQFH6rc/view?usp=drive_link

Activity 1.11: Sum of loans given according to banks

Explanation video link:

https://drive.google.com/file/d/1VJkOnFUvccXnuuQ1g0Su6zJJvDQFH6rc/view?usp=drive_link

Activity 1.12: Sum of loans given according to the department of borrower

Explanation video link:

https://drive.google.com/file/d/1Ryu45oLHnU05N87mqU1rn2TgklgbLN0A/view?usp=drive_link

Milestone 5: Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

Activity 1- Responsive Design of Dashboard 1

Once you have created views on different sheets in Tableau, you can pull them into a dashboard.

Explanation video link:

https://drive.google.com/file/d/1qJQuhCd2SpSWsYzxjqSnCszuimJaMLDX/view?usp=drive_link
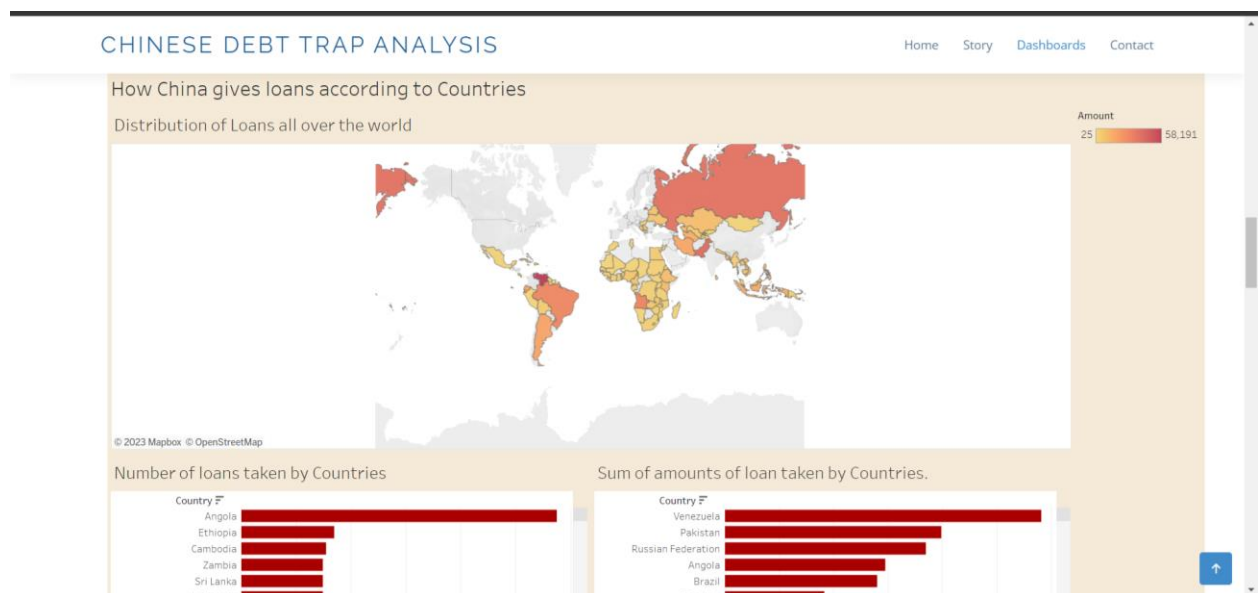
Activity 2- Responsive Design of Dashboard 2

Once you have created views on different sheets in Tableau, you can pull them into a dashboard.

Explanation video link:

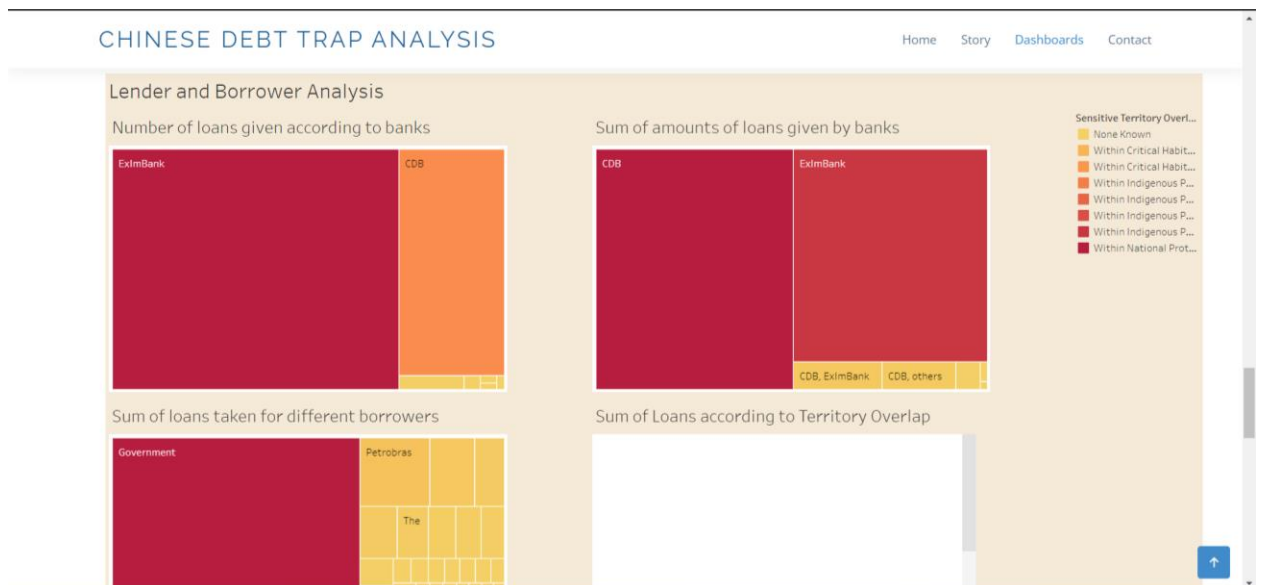https://drive.google.com/file/d/1q4vN66VpwbyFpcfDD92wjBc_54YZ1ghr/view?usp=drive_link
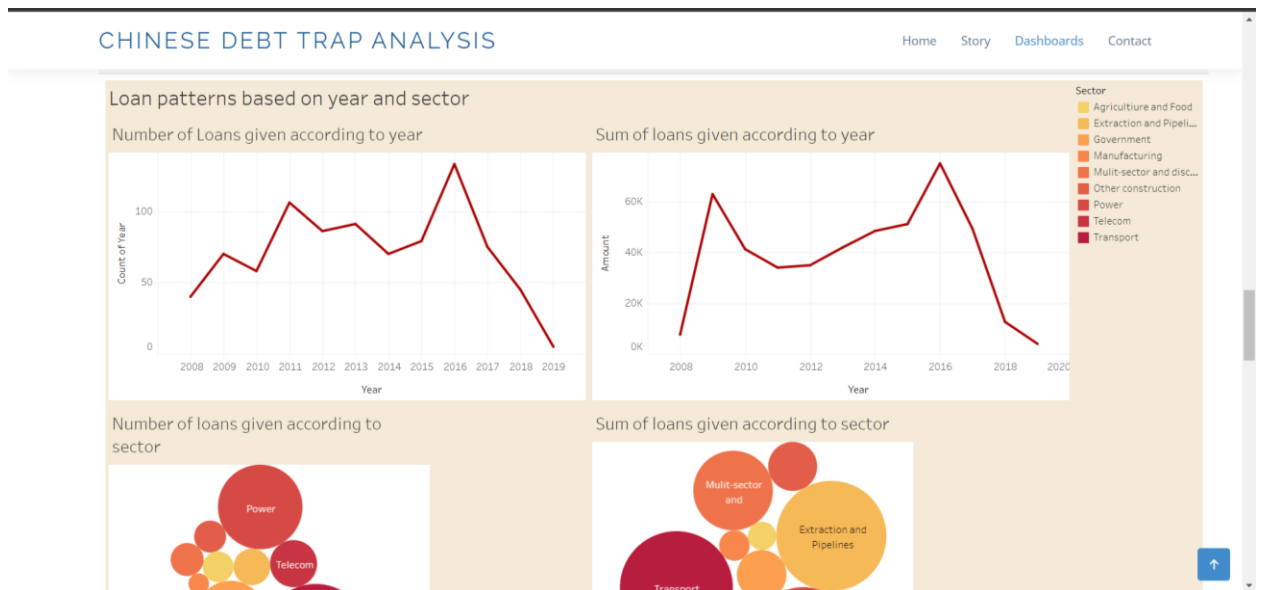
Activity 3- Responsive Design of Dashboard 3

Once you have created views on different sheets in Tableau, you can pull them into a dashboard.

Explanation video link:

https://drive.google.com/file/d/17WLz3ClrmHSKzSbF1lBivpOeAWFC7NHi/view?usp=drive_link

Milestone 6: Story

A data story is a way of presenting data and analysis in a narrative format, intending to make the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis logically and systematically, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

Activity 1- No of Scenes of Story

The number of scenes in a storyboard for a data visualization analysis of the performance of banks will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.

Explanation video link:

https://drive.google.com/file/d/1aJM8iCOqGVKN_oaz8PkaozIiIsR2vyFE/view?usp=drive_link
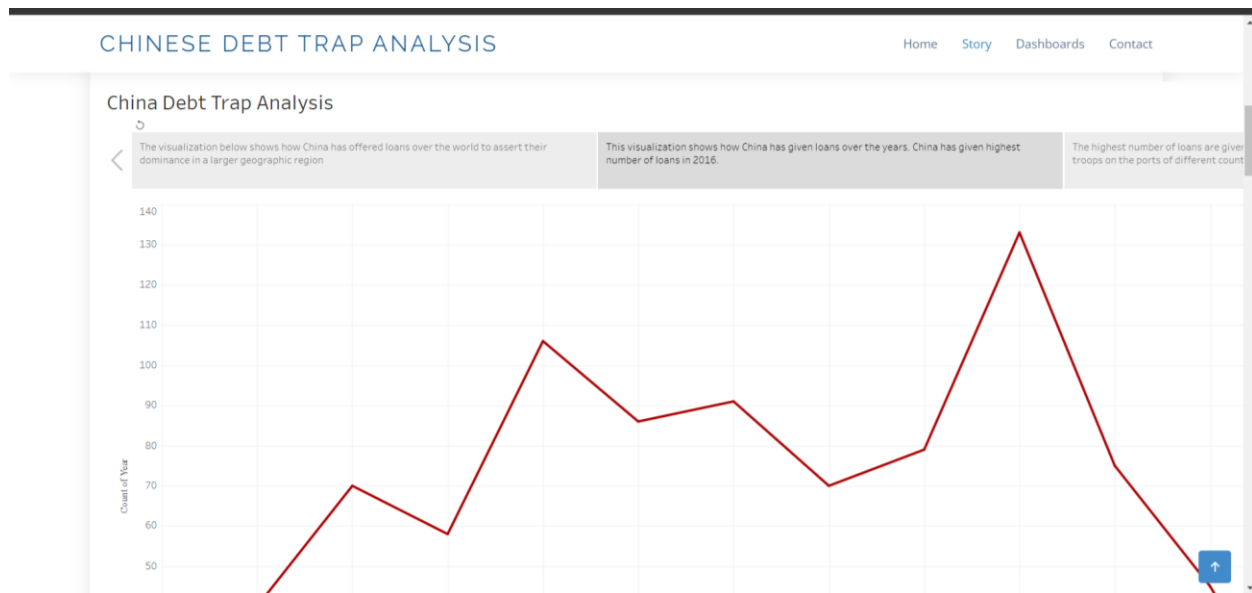
Milestone 7: Performance Testing

Activity 1: Amount of Data Rendered to DB

- The amount of data that is rendered to a database depends on the size of the dataset and the capacity of the database to store and retrieve data.

- Open the MySQL Workbench, go to the database then click to expand the tables,select the table and click on (i) button to get the information related to table such as column count,table rows etc.
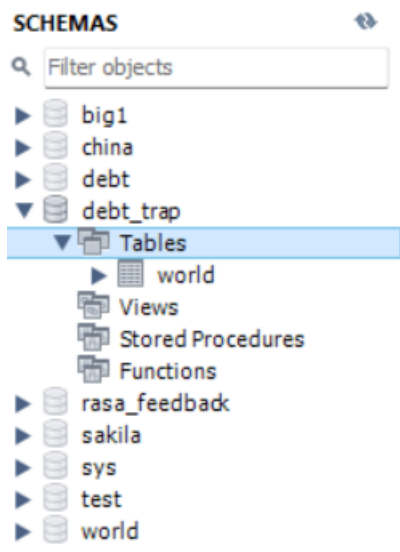
Activity 2: No of Calculation Fields

Tables

Abc Borrower
⊕ Country
Abc Expand All | Collapse All
Abc Lender
Abc Sector
Abc Sensitive Territory Overlap
Year
Abc *Measure Names*

Amount
⊕ *Latitude (generated)*
⊕ *Longitude (generated)*
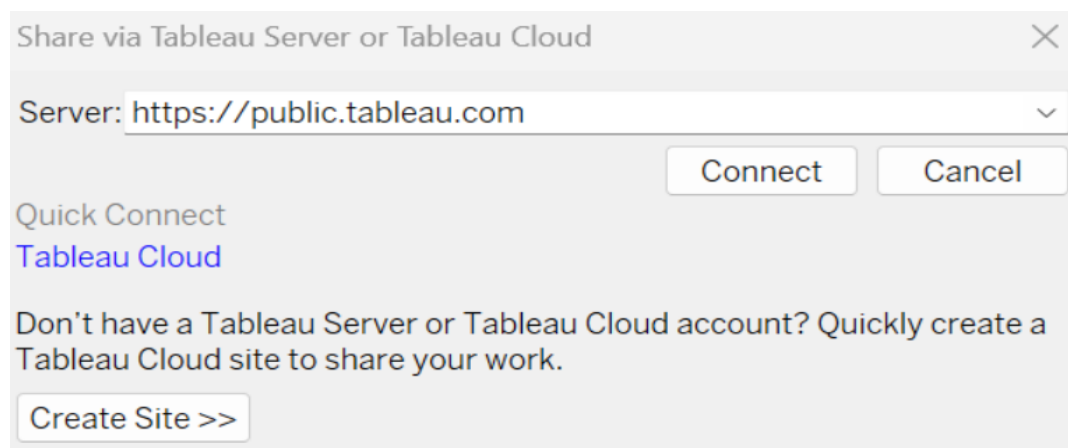# *world (Count)*
Measure Values

Activity 3: No of Visualizations/ Graphs

1. Distribution of loans all over the world
2. Number of loans given according to year
3. Sum of loans given according to year
4. Number of loans given according to sector
5. Sum of loans given according to sector
6. Number of loans given according to countries

7. Sum of loans given according to countries

8. Number of loans given according to territory overlap

9. Sum of loans given according to territory overlap

10. Number of loans given according to banks

11. Sum of loans given according to banks

12. Sum of loans given according to borrower

Milestone 8: Web integration

Publishing helps us to track and monitor key performance metrics and to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others.

Publishing dashboard and reports to tableau public

Step 1: Go to Dashboard/story, click on the share button on the top ribbon

 Give the server address of your tableau public account and click on connect.

Explanation Video:-

https://drive.google.com/file/d/1VgmybYFssABhFZx1ux4zmKynE6otgM8q/view?usp=drive_link

Step 2: Once you click on connect it will ask you for the tableau public username and password

Once you login into your tableau public using the credentials, the particular visualization will be published into the tableau public

Note: While publishing the visualization to the public, the respective sheet will get published when you click on the share option.

Activity 1: Embed Dashboard & Story with Web Bootstrap

Explanation video link:

https://drive.google.com/file/d/1kvB51SdrCR5gZrOhVO20fn16jUYOT_JQ/view?usp=drive_link
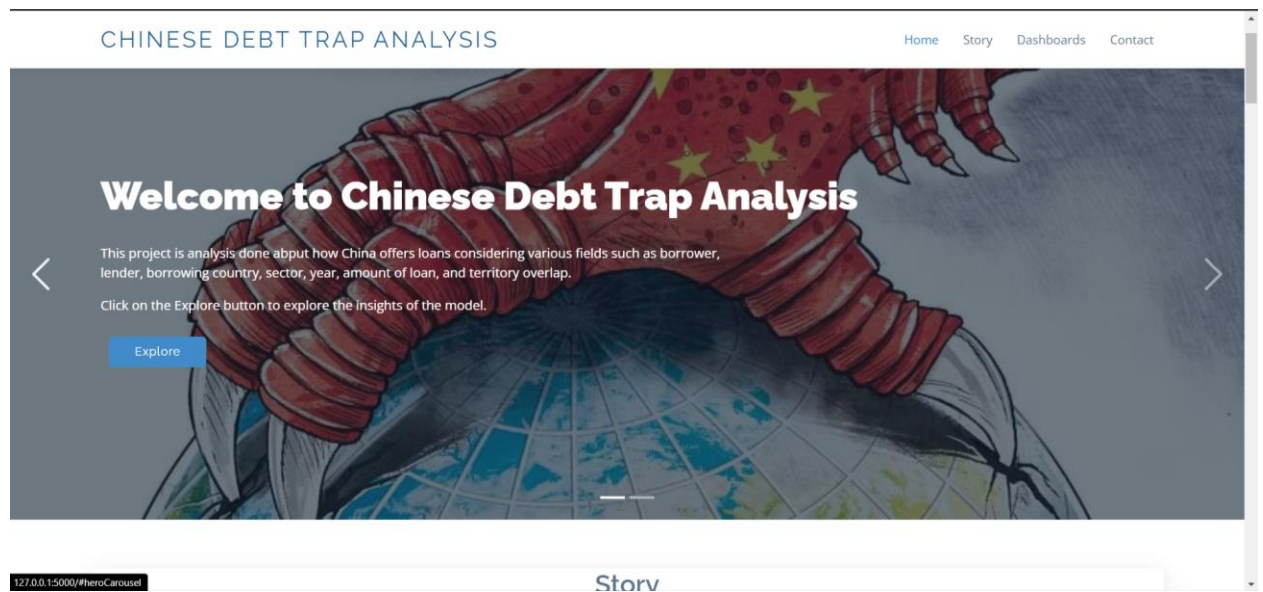
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Message

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