

Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau

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INTRODUCTION

Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau

"Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites (2019)" is a comprehensive project aimed at exploring the rich dataset of UNESCO World Heritage Sites using Tableau. This project focuses on visualizing the distribution, trends, and key attributes of these sites to provide valuable insights. By leveraging the power of data visualization, stakeholders can gain a deeper understanding of the global heritage landscape, identify patterns, and make informed decisions to enhance the preservation and promotion of these sites.

Scenarios:

Scenario 1: Heritage Sites by Country

This visual will represent each country as a block, with the size of each block proportional to the number of heritage sites it contains. This visualization will quickly identify which countries have the most UNESCO World Heritage Sites, offering a clear and comprehensive view of heritage site distribution. The key columns used for this visualization are Country and Name_en.

Scenario 2: Heritage Sites at risk

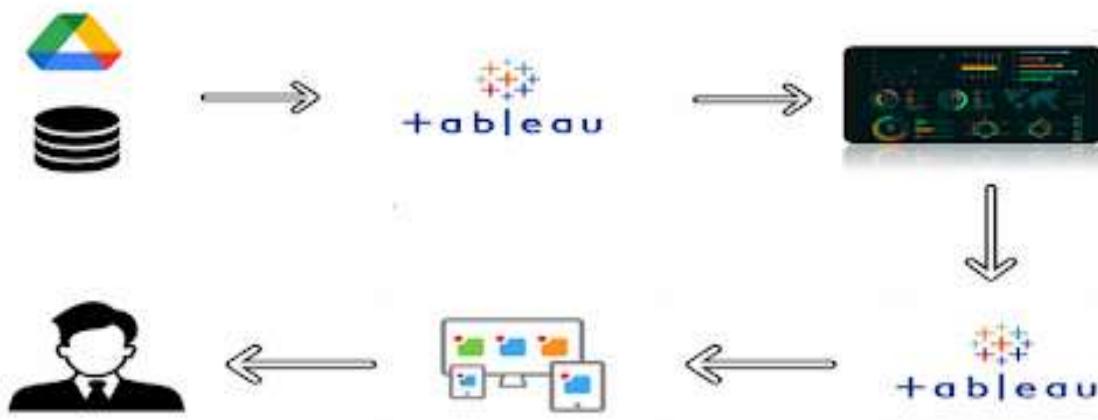
This pie chart will display the proportion of UNESCO World Heritage Sites listed as being in danger, segmenting the sites into 'In Danger' and 'Not in Danger' categories. This visual aids in understanding the severity of threats to world heritage sites, allowing stakeholders to focus their preservation efforts on the most vulnerable sites. The columns Danger and Name_en will be used for this visualization.

Scenario 3: Regional Inscription Trends

"Regional Inscription Trends" will be included using a Line Chart. This chart will show the trend of new site inscriptions over the years, segmented by region, providing insights into which regions have seen the most growth in terms of heritage site inscriptions. By visualizing the columns Date_inscribed and Region, this chart will help identify regions with increasing heritage conservation efforts and highlight historical trends.

Technical Architecture

Technical Architecture:



Project Flow

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

- ? Data Collection & Extraction from Database
 - o Collect the dataset,
 - o Connect data 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 Loaded
- o Utilization of Data Filters
- o No of Calculation Fields
- o No of Visualizations/ Graphs
- ? Web Integration
 - o Dashboard and Story embed with UI With Flask
- ? Project Demonstration & Documentation

- o Record explanation Video for project end to end solution
- o Project Documentation-Step by step project development procedure

MILESTONE 1 :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.

MILESTONE 2: Downloading the dataset

Dataset : <https://www.kaggle.com/datasets/ujwalkandi/unesco-world-heritage-sites/data?select=whc-sites-2019.csv>

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

Column Description of the Dataset:

1. ID No.: Unique identifier for each UNESCO World Heritage Site.
2. Name_en: English name of the World Heritage Site.
3. Region: Geographical region where the site is located.
4. Country: Country in which the site is situated.
5. Location: Specific location of the site within the country.
6. Date_inscribed: Year the site was added to the UNESCO list.
7. Danger: Indicator of whether the site is listed as being in danger.
8. Endangered Year: Year in which the site was listed endangered
9. Date_end: The end date for the site's status as a World Heritage.
10. Category: Type of site (Cultural, Natural, Mixed).
11. Criterion 1-10: Specific criteria under which the site qualifies World Heritage status.

MILESTONE 3 :Data Preparation

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. Since the data is already cleaned, we can move to visualization.

Explanation video links

Explanation video link 1: Data Loading:

[https://drive.google.com/file/d/1Y941JkukrTiOOAJS4WohiqTVDcMSP29v/view?
usp=sharing](https://drive.google.com/file/d/1Y941JkukrTiOOAJS4WohiqTVDcMSP29v/view?usp=sharing)

Explanation video link 2: Data Cleaning:

[https://drive.google.com/file/d/16Cx2C1XpatahNAHbNNVQ-
4l3NgKJxJBv/view?usp=sharing](https://drive.google.com/file/d/16Cx2C1XpatahNAHbNNVQ-4l3NgKJxJBv/view?usp=sharing)

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.

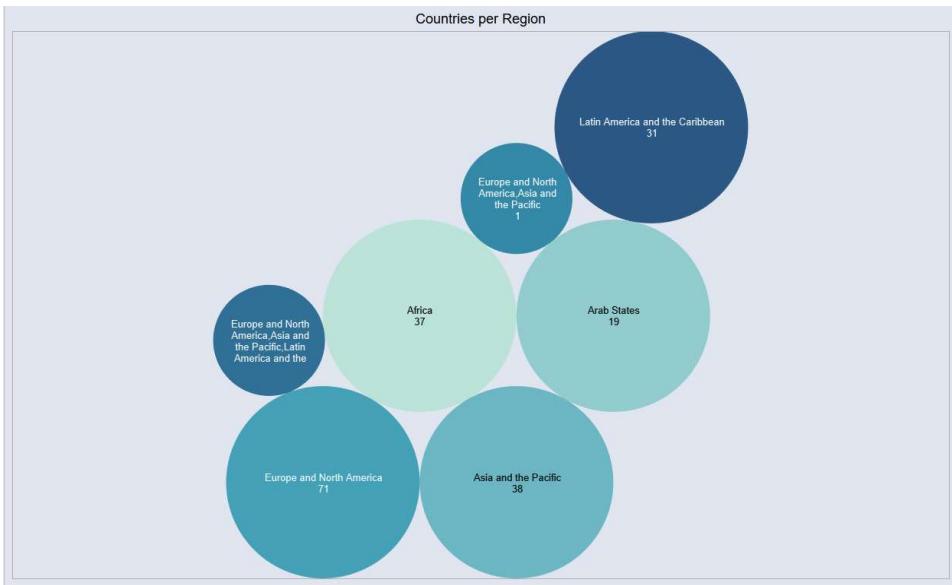
No.of Unique Visualizations

Using the given dataset, several unique visualizations can be created to analyze the dietary habits, nutritional intake, and health outcomes of college students. These visualizations include bar charts, line charts, heat maps, scatter plots, pie charts, and maps. These can be used to compare performance, track changes over time, show distribution, identify relationships, breakdown nutritional intake, provide demographic insights, inform resource allocation, and conduct geographical analysis. By leveraging these diverse visualizations, stakeholders can gain comprehensive insights into the dietary choices and health of college students, enabling data-driven decisions to promote better nutrition and overall well-being.

MILESTONE 5 :visualizations

Explanation link for all visualizations: [https://drive.google.com/file/d/1wZSY11xLTglUn50D9Isc6NU2Ck
EiBSQz/view?usp=sharing](https://drive.google.com/file/d/1wZSY11xLTglUn50D9Isc6NU2CkEiBSQz/view?usp=sharing)

Activity 1.1: Countries per Region



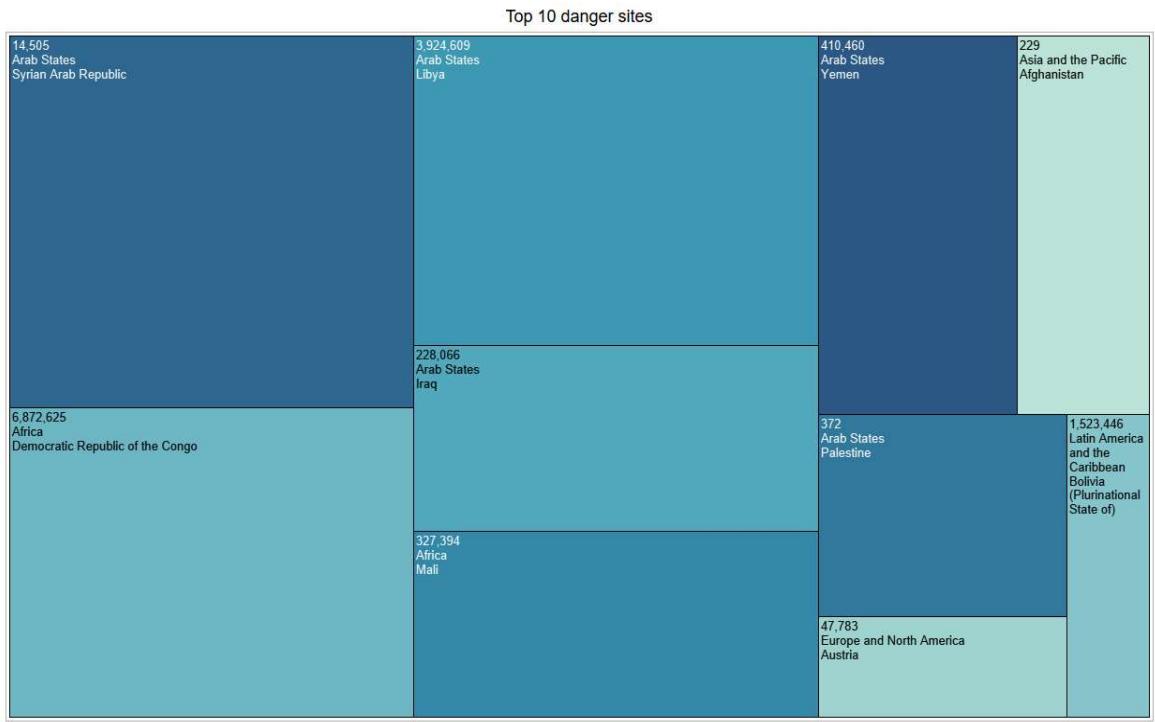
Activity 1.2: Top 10 regions by area



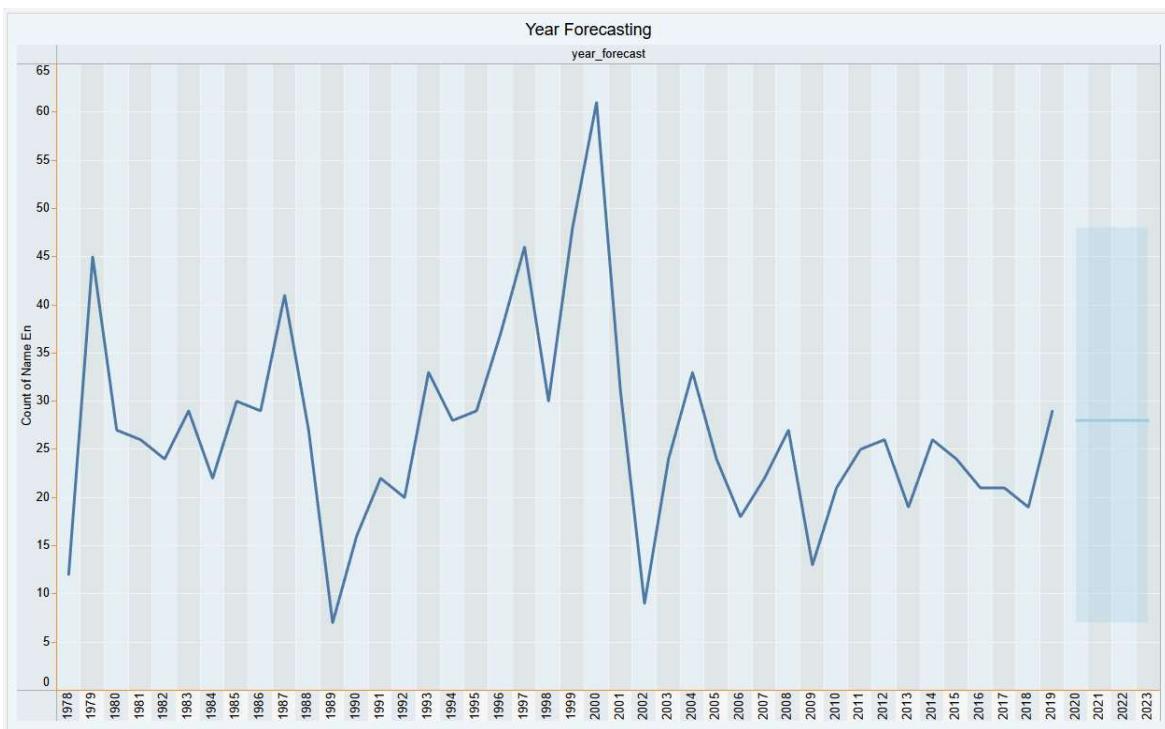
Activity 1.3: Regions by Heritage ended



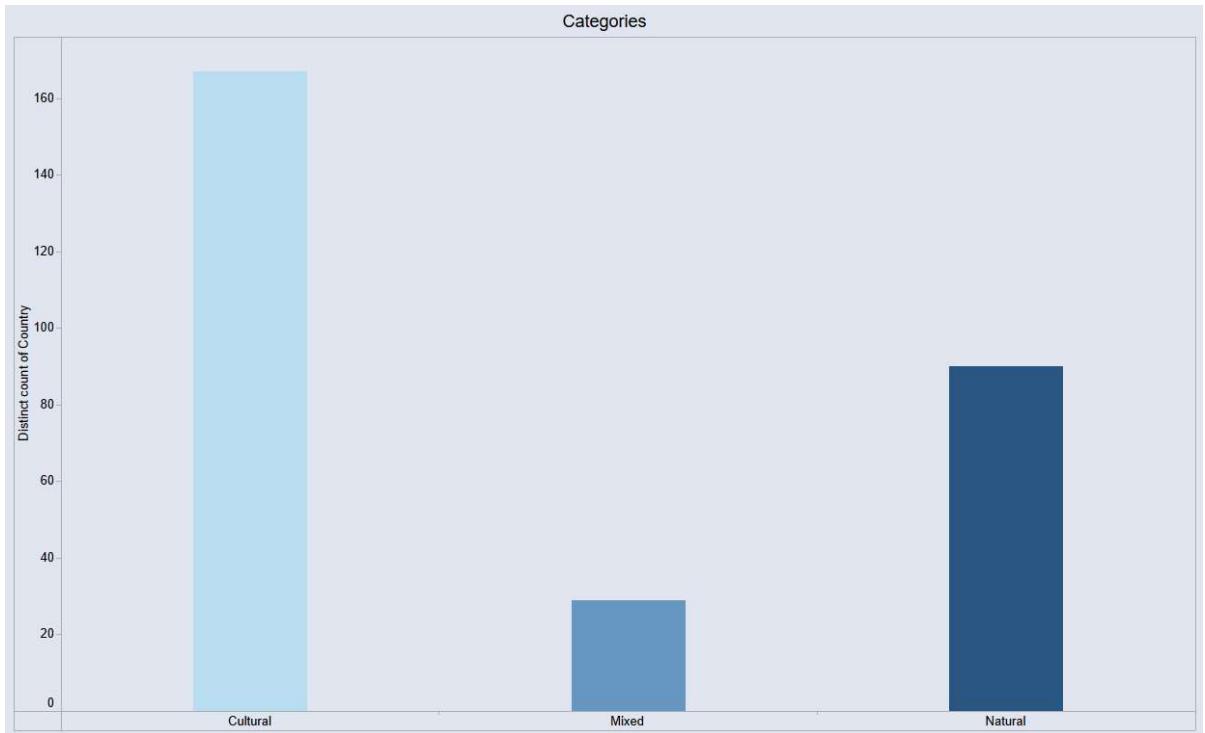
Activity 1.4 : Top 10 Danger Sites prone to Extinction



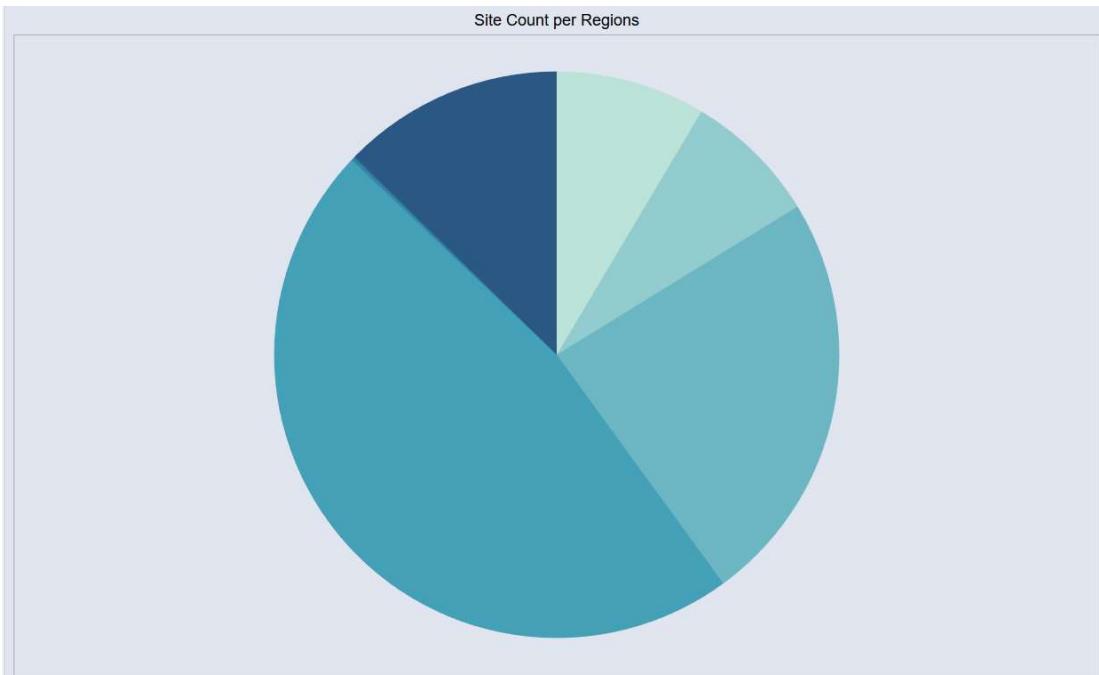
Activity 1.5 : Year Forecasting of Heritages



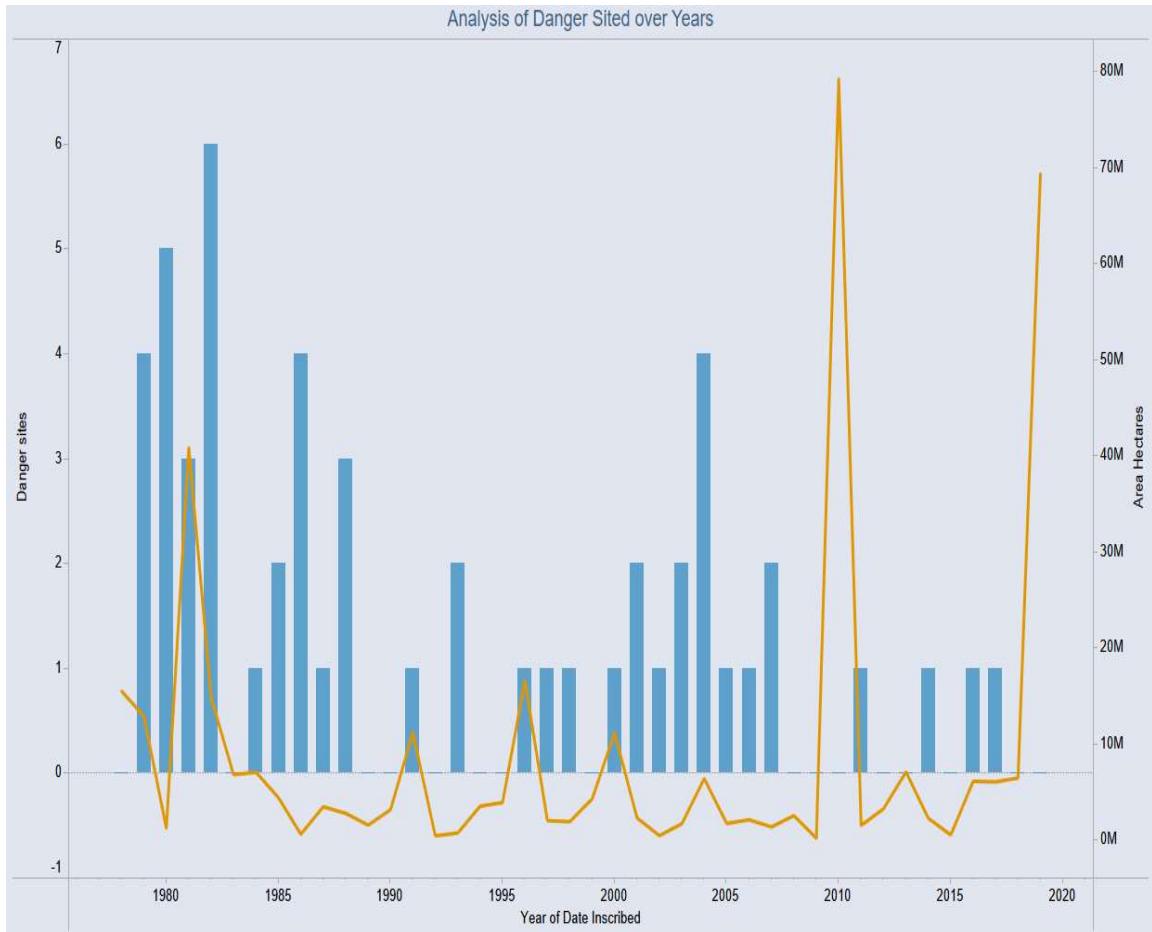
Activity 1.6 : Categories by sites count



Activity 1.7 : Site Count per Region



Activity 1.8 : Analysis of Danger sites and Area of heritages



Note: All the above visualizations were explained in the link mentioned above.

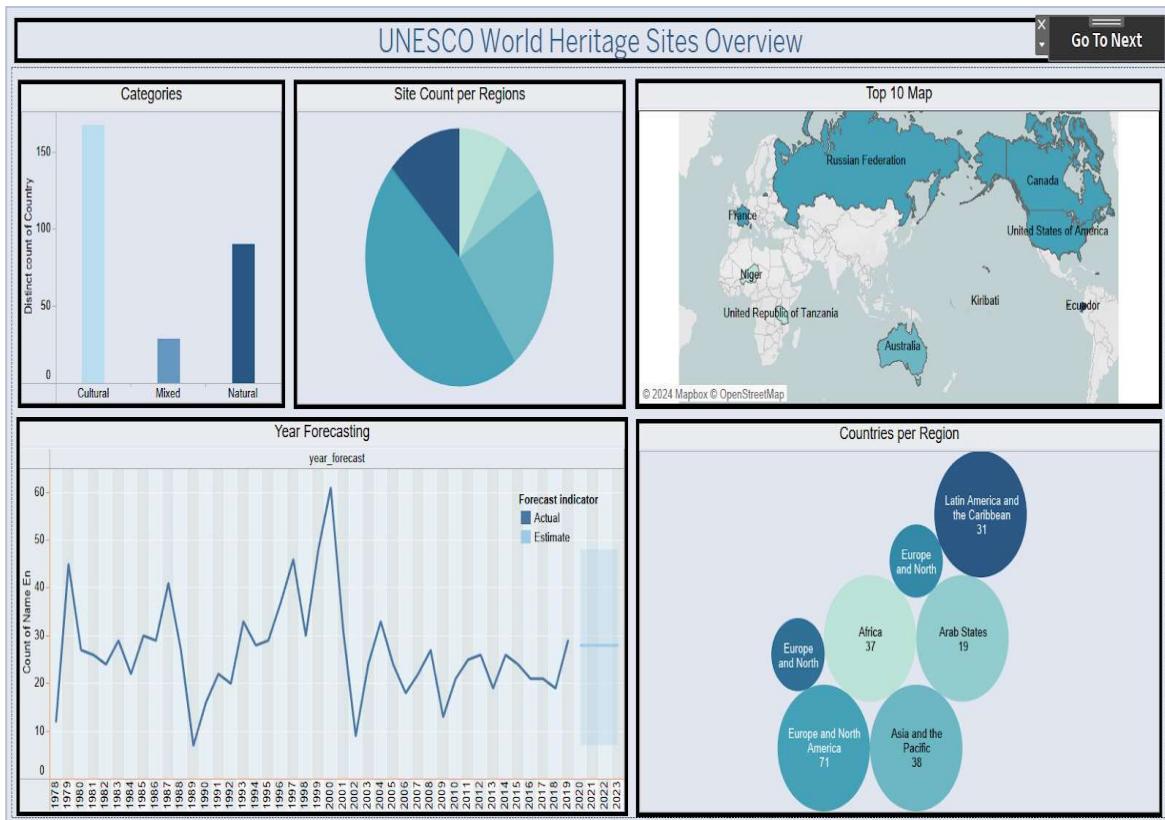
Dashboard

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.

Dashboard 1

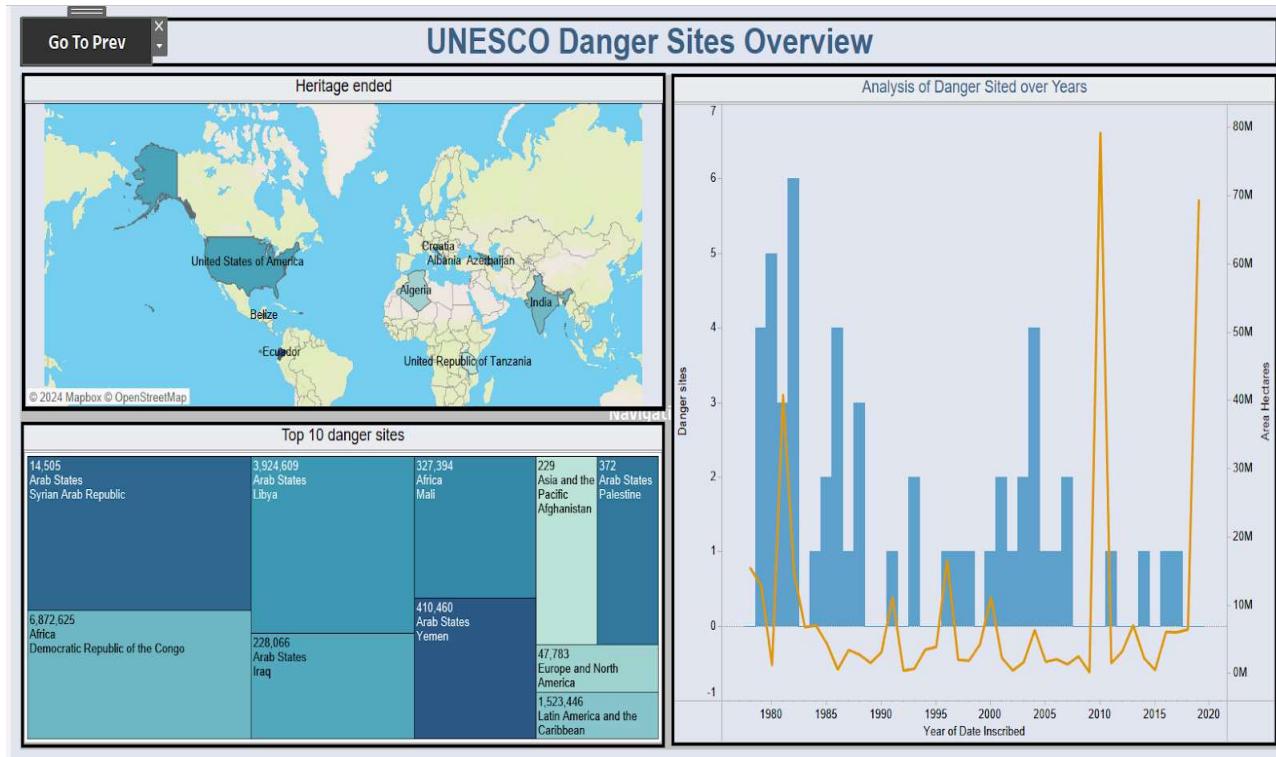
Dashboard 1: UNESCO World Heritage Site Overview

Link: <https://drive.google.com/file/d/1wjQb6BoHlfT3wyKEEBcMeSTBEzoHAMjK/view?usp=sharing>



Dashboard 2:

Link: <https://drive.google.com/file/d/1PS7vZLeCV52n7hruFeN1IAHBJ8fTssUr/view?usp=sharing>



MILESTONE 7: Story

A data story is a way of presenting data and analysis in a narrative format, with the goal of making 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 in a logical and systematic way, 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.

No of Scenes of Story

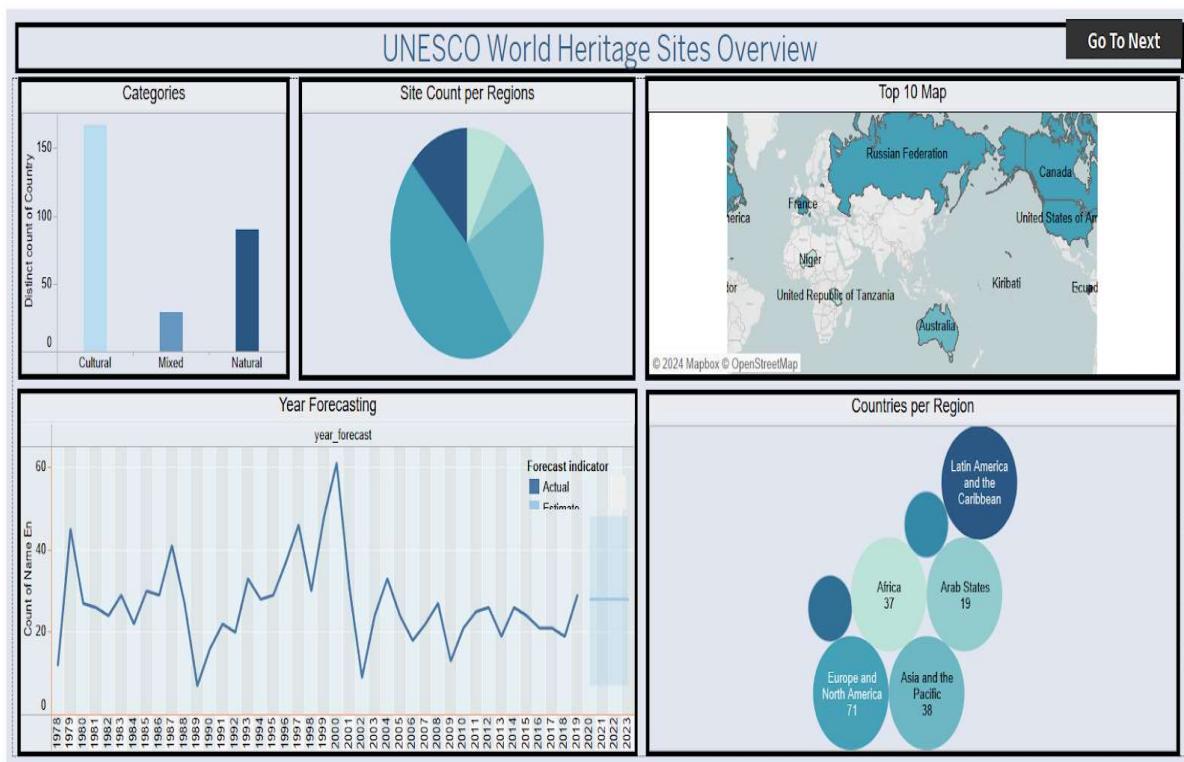
No of Scenes of Story

https://drive.google.com/file/d/1Y-iJ6gEo3B9TWWrGIZhxA_yWScEnSBdj/view?usp=sharing

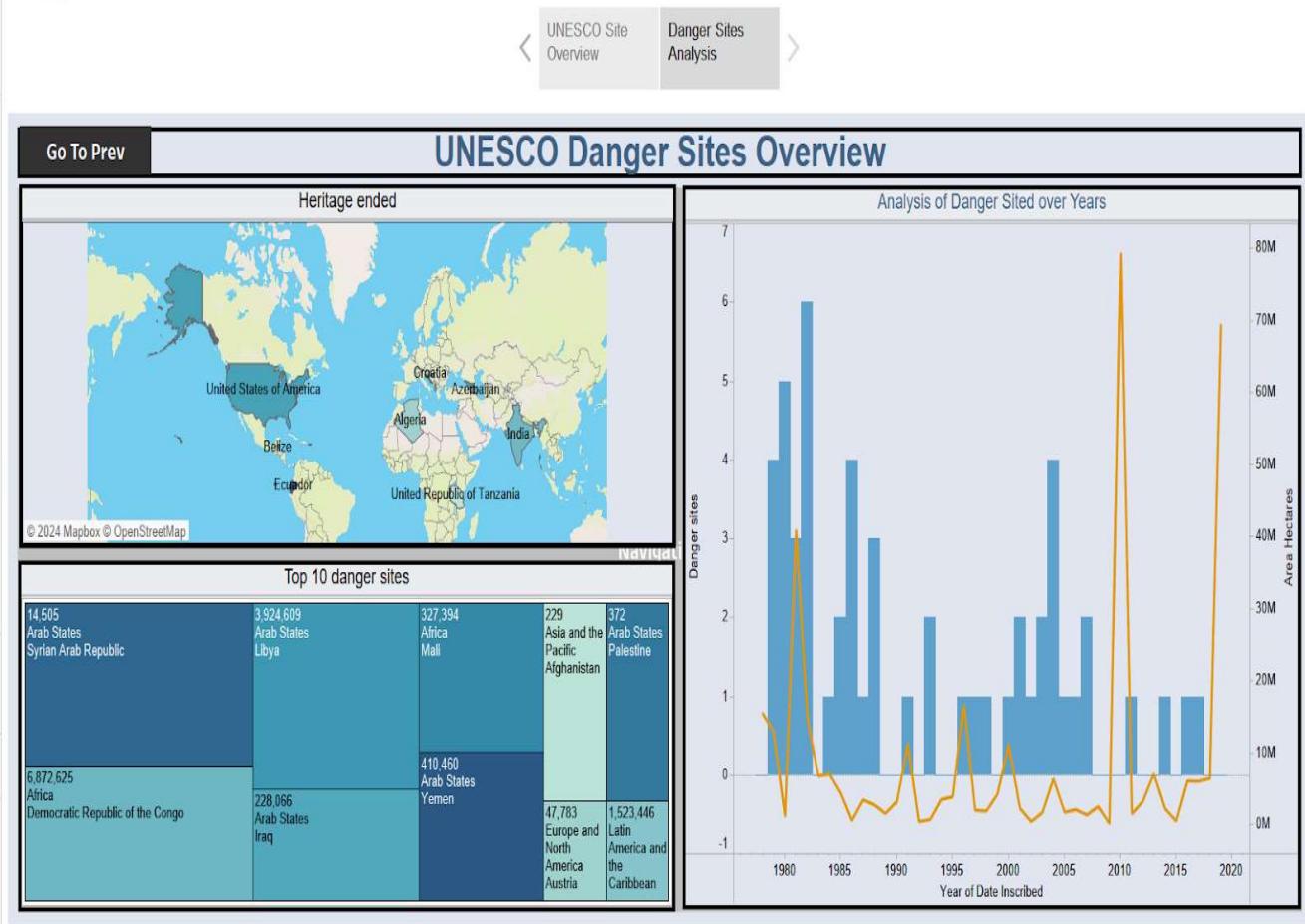
Story 1

UNESCO Site Overview Danger Sites Analysis

Go To Next



Story 1



MILESTONE 8: Performance Testing

Amount of Data Loaded

"Amount of Data Loaded" refers to the quantity or volume of data that has been imported, retrieved, or loaded into a system, software application, database, or any other data storage or processing environment. It's a measure of how much data has been successfully processed and made available for analysis, manipulation, or use within the system.

Fields

Type	Field Name	Physical Table	Remote Field Name
Abc	Category	sites inscribed properties XLS	category
⊕	Country	sites inscribed properties XLS	states_name_en
⊕	Region En	sites inscribed properties XLS	region_en
#	Unique Number	sites inscribed properties XLS	unique_number
#	Id No	sites inscribed properties XLS	id_no
Abc	Rev Bis	sites inscribed properties XLS	rev_bis
Abc	Name En	sites inscribed properties XLS	name_en
Abc	Short Description En	sites inscribed properties XLS	short_description_en
Abc	Justification En	sites inscribed properties XLS	justification_en
⊕	Date Inscribed	sites inscribed properties XLS	date_inscribed
Abc	Secondary Dates	sites inscribed properties XLS	secondary_dates
#	Danger	sites inscribed properties XLS	danger
#	Danger sites	Calculation	Calculation_2525956472081383427

Fields

Type	Field Name	Physical Table	Remote Field Name
⊕	Date End	sites inscribed properties XLS	date_end
=T F	Calculation1	Calculation	Calculation_2525956472255877134
Abc	Danger List	sites inscribed properties XLS	danger_list
⊕	Longitude	sites inscribed properties XLS	longitude
⊕	Latitude	sites inscribed properties XLS	latitude
#	Area Hectares	sites inscribed properties XLS	area_hectares
Abc	Criteria Txt	sites inscribed properties XLS	criteria_txt
Abc	Category Short	sites inscribed properties XLS	category_short
Abc	Iso Code	sites inscribed properties XLS	iso_code
Abc	Udnp Code	sites inscribed properties XLS	udnp_code
#	Transboundary	sites inscribed properties XLS	transboundary
⊕	year_forecast	Calculation	Calculation_2525956472123355148
. .	Area Hectares (bin)	Bin	Area Hectares (bin)

MILESTONE 9:Amount of Data Loaded

"Amount of Data Loaded" refers to the quantity or volume of data that has been imported, retrieved, or loaded into a system, software application, database, or any other data storage or processing environment. It's a measure of how much data has been successfully processed and made available for analysis, manipulation, or use within the system.

Fields

Type	Field Name	Physical Table	Remote Field Name
Abc	Category	sites inscribed properties XLS	category
🌐	Country	sites inscribed properties XLS	states_name_en
🌐	Region En	sites inscribed properties XLS	region_en
#	Unique Number	sites inscribed properties XLS	unique_number
#	Id No	sites inscribed properties XLS	id_no
Abc	Rev Bis	sites inscribed properties XLS	rev_bis
Abc	Name En	sites inscribed properties XLS	name_en
Abc	Short Description En	sites inscribed properties XLS	short_description_en
Abc	Justification En	sites inscribed properties XLS	justification_en
📅	Date Inscribed	sites inscribed properties XLS	date_inscribed
Abc	Secondary Dates	sites inscribed properties XLS	secondary_dates
#	Danger	sites inscribed properties XLS	danger
#	Danger sites	Calculation	Calculation_2525956472081383427

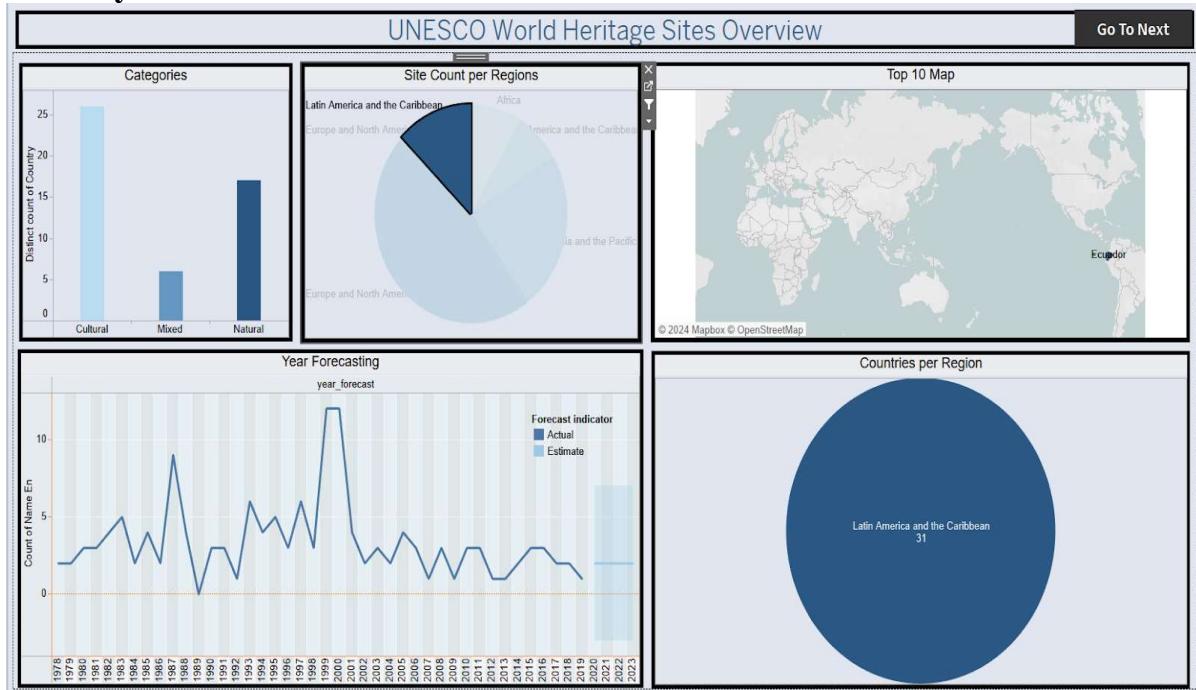
Fields

Type	Field Name	Physical Table	Remote Field Name
Text	Date End	sites inscribed properties XLS	date_end
Text	Calculation1	Calculation	Calculation_2525956472255877134
Text	Danger List	sites inscribed properties XLS	danger_list
Text	Longitude	sites inscribed properties XLS	longitude
Text	Latitude	sites inscribed properties XLS	latitude
Text	Area Hectares	sites inscribed properties XLS	area_hectares
Text	Criteria Txt	sites inscribed properties XLS	criteria_txt
Text	Category Short	sites inscribed properties XLS	category_short
Text	Iso Code	sites inscribed properties XLS	iso_code
Text	Udnp Code	sites inscribed properties XLS	udnp_code
Text	Transboundary	sites inscribed properties XLS	transboundary
Text	year_forecast	Calculation	Calculation_2525956472123355148
Text	Area Hectares (bin)	Bin	Area Hectares (bin)

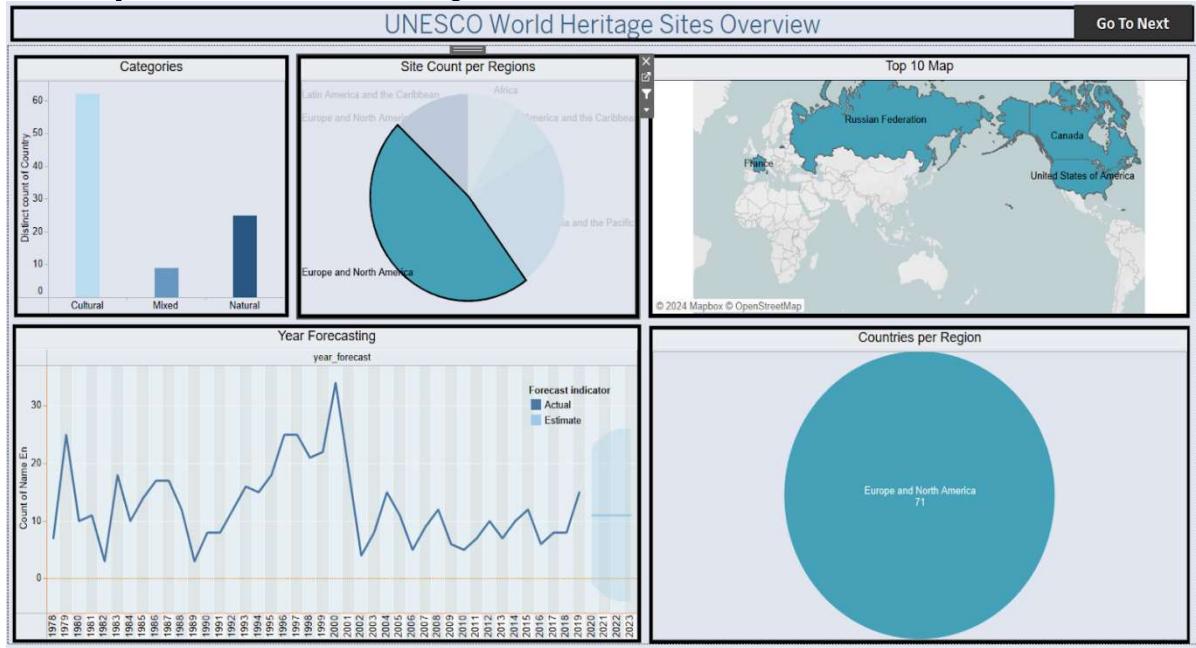
Utilization of Data Filters

"Utilization of Filters" refers to the application or use of filters within a system, software application, or data processing pipeline to selectively extract, manipulate, or analyze data based on specified criteria or conditions.

Activity 2.1: Selected “Latin America” as a filter.



Activity 2.2: Selected “Europe and North America” as a Filter



No of Visualizations/ Graphs

- Top 10 regions by area

- Countries per Regions
- Sites Count per Region
- Analysis of Danger sites and Areas
- Heritage ended Regions
- Year Forecasting
- Categories by site count
- Top 10 danger sites

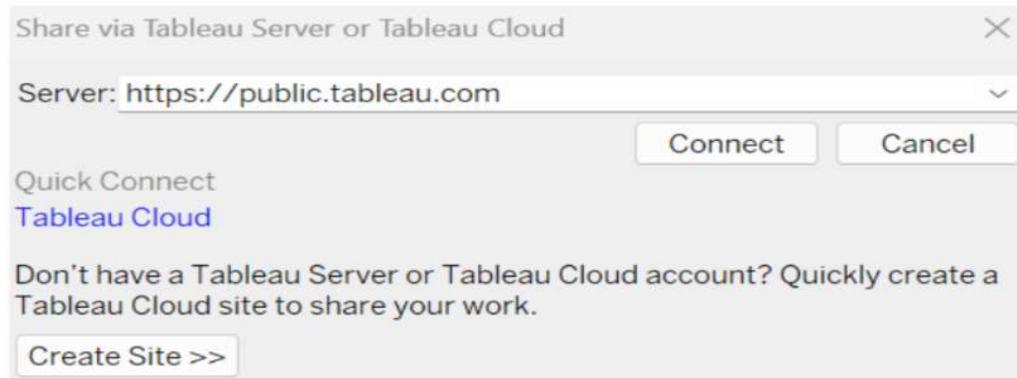
MILESTONE 10 :Web integration

Publishing helps us to track and monitor key performance metrics, 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

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

Note: This process is also explained in the flask part mentioned below

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



Step 2: Once you click on connect it will ask you for tableau public user name and password.



Email

Password

Sign In

This site is SSL encrypted.

[Forgot your password?](#)

[Don't have a profile yet?](#)

[Create one now for free](#)

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

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

Dashboard and Story embed with UI With Flask

Explanation video link:[TableauFlask.mp4](#)

```
index.html X app.py X
1  from flask import *
2
3  app = Flask(__name__)
4  |
5  @app.route("/")
6  def home():
7      return render_template("index.html")
8
9
10 if __name__ == "__main__":
11     app.run(debug = True, port = 1212)
```

127.0.0.1:5000

Apps Badges - Credly Your Dashboard | Fora... DeepRacer Student Le... Grow your Career wit... Developing Secure So... Google Cloud Comp... AWS Skill Builder All Bookmarks

UNESCO HERITAGE

Welcome to UNESCO Heritage

Heritage Site Types Analysis: Analyze the distribution of UNESCO World Heritage Sites by type, with a focus on cultural, natural, and mixed categories across various countries.

Read More

Home About Dashboard Storyboard

UNESCO HERITAGE

Home About Dashboard Storyboard

UNESCO HERITAGE PROJECT

The UNESCO Heritage Project is dedicated to identifying, protecting, and preserving cultural and natural heritage around the world. Established in 1972, our project aims to promote international collaboration and provide support for the conservation of World Heritage sites.

The project covers a diverse range of sites, including ancient monuments, natural parks, historic cities, and intangible cultural heritage. Our efforts are guided by the principles of sustainable development, ensuring that the preservation of heritage sites contributes to the well-being of surrounding communities.

Our mission is to safeguard the world's cultural and natural treasures for future generations. We work closely with governments, local communities, and various organizations to ensure that these sites are maintained and protected in accordance with the highest standards.

Join us in our mission to preserve the world's heritage. Together, we can ensure that the beauty, history, and cultural significance of these sites continue to inspire and educate future generations.



CONTACT

We value your feedback inquiries and collaboration opportunities as we shape the future of education in the region. Whether you're an educator, a policymaker, or simply curious about our work, we invite you to get in touch.

Location:



Email:
visits@unesco.org

Call:
+33 (0)1 45 68 10 00

Your Name

Your Email

Subject

Message

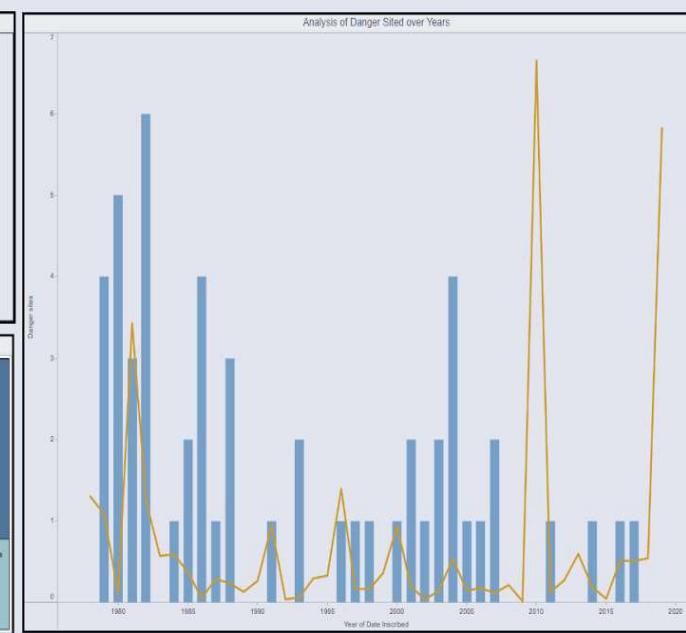
Send Message

UNESCO Heritage

Building peace in the minds of men and women.

Designed by BootstrapMade

UNESCO Danger Sites Overview



Clean Data from Excel, CSV, PDF, and Google Sheets with Data Interpreter

Applies to: Tableau Cloud, Tableau Desktop, Tableau Server

When you track data in Excel spreadsheets, you create them with the human interface in mind. To make your spreadsheets easy to read, you might include things like titles, stacked headers, notes, maybe empty rows and columns to add white space, and you probably have multiple tabs of data too.

When you want to analyze this data in Tableau, these aesthetically pleasing attributes make it very difficult for Tableau to interpret your data. That's where Data Interpreter can help.

Tip: Though Tableau's Excel add-in is no longer supported, Data Interpreter can help you reshape your data for analysis in Tableau.

What does Data Interpreter do?

Data Interpreter can give you a head start when cleaning your data. It can detect things like titles, notes, footers, empty cells, and so on and bypass them to identify the actual fields and values in your data set.

It can even detect additional tables and sub-tables so that you can work with a subset of your data independently of the other data.

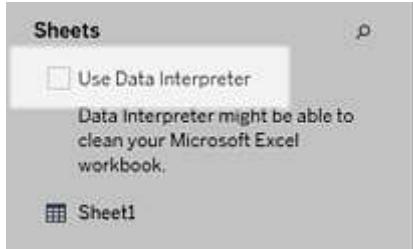
After Data Interpreter has done its magic, you can check its work to make sure it captured the data that you wanted and identified it correctly. Then, you can make any necessary adjustments.

After you select the data that you want to work with, you might also need to do some additional cleaning steps like pivoting your data, splitting fields, or adding filters to get the data in the shape you want before starting your analysis.

Note: If your data needs more cleaning than what Data Interpreter can help you with, try [Tableau Prep](#)(Link opens in a new window).

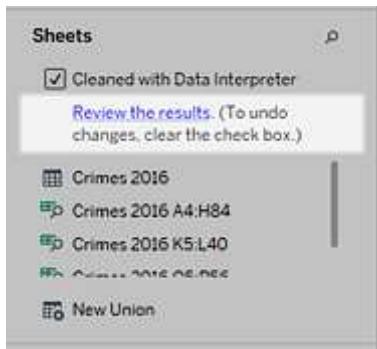
Turn on Data Interpreter and review results

1. From the **Connect** pane, connect to an Excel spreadsheet or other connector that supports Data Interpreter such as Text (.csv) files, PDF files or Google sheets.
1. Drag a table to the canvas (if needed), then on the **Data Source** page, in the left pane, select the **Use Data Interpreter** check box to see if Data Interpreter can help clean up your data.



Note: When you clean your data with Data Interpreter, Data Interpreter cleans all the data associated with a connection in the data source. Data Interpreter does not change the underlying data.

1. In the Data pane, click the **Review the results** link to review the results of the Data Interpreter.



A copy of your data source opens in Excel on the **Key for the Data Interpreter** tab. Review the key to find out how to read the results.

1. Click each tab to review how Data Interpreter interpreted the data source.

If Data Interpreter found additional tables, also called found tables or sub-tables, they are identified in the <sheet name>_subtables tab by outlining their cell ranges. A separate tab is also included for each sub-table, color coded to identify the header and data rows.

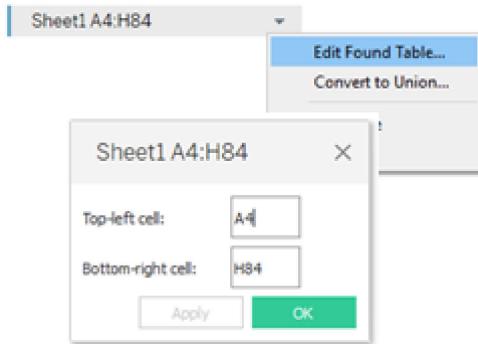
If Data Interpreter does not provide the expected results, clear the **Cleaned with Data Interpreter** check box to use the original data source.



1. To replace the current table with any of the found tables, drag the current table off the canvas and then drag the found table that you want to use to the canvas.

If Data interpreter has misidentified the range of the found table, after you drag the found table to the canvas, click the drop-down arrow on that table, and then

select **Edit Found Table** to adjust the corners of the found table (the top-left cell and bottom-right cell of the table).



- After you have the data that you want to work with, you can apply any additional cleaning operations to your data so that you can analyze it.

Data Interpreter Example

In this example we are connecting to an Excel spreadsheet with violent crime data by city and state for the year 2016. This spreadsheet includes multiple tables on one sheet and some extra formatting.

Violent Crimes in 2016 in the United States by City and State														
city	state	Months						state	Total Crimes 2016		State	Population 2016		
		Apr	Jun	Jul	Aug	Sep	Oct		Total	Population		Alabama	4860545	
Albuquerque	New Mexico						46				Alabama	26	741522	
Anaheim	California				4						Alaska	132	6908642	
Anchorage	Alaska		1								Arizona	515	2988231	
Arlington	Texas					17					Colorado	64	39296476	
Atlanta	Georgia						85				D.C.	105	5530105	
Aurora	Colorado						16				Florida	210	3587685	
Austin	Texas					28					Georgia	85	52698	
Bakersfield	California		22								Hawaii	9	684336	
Baltimore	Maryland								250		Illinois	536	20656589	
Boston	Massachusetts						28				Indiana	151	10313620	
Buffalo	New York						38				Kansas	10	1428683	
Chandler	Arizona						3				Kentucky	95	1680026	
Charlotte-M	North Carolina		25						536		Louisiana	127	12835726	
Chicago	Illinois										Maryland	230	6634007	
Chula Vista	California	2				1					Massachusetts	28	3130869	
Cincinnati	Ohio						50				Michigan	225	2507731	
Cleveland	Ohio						89				Minnesota	26	9933445	
Colorado Sp.	Colorado				15						Missouri	223	5525050	
Columbus	Ohio					20					Nebraska	25	2985415	
Corpus Christi	Texas		9								Nevada	128	6024752	
Dallas	Texas					118					New Jersey	86	6823721	
Denver	Colorado				33						New Mexico	46	6991176	
Detroit	Michigan	5					221				New York	290	1038656	
Durham	North Carolina								30		North Carolina	82	1907603	
El Paso	Texas						14				Oklahoma	82	2939254	
Fort Wayne	Indiana						34				Oregon	14		
Fort Worth	Texas	7					49				Pennsylvania	251		
Fresno	California				19									
Greensboro	North Carolina													

- A. Title
- A. Merged header cells
- A. Extra white space

A. Sub-tables

The extra formatting in this spreadsheet makes it difficult for Tableau to determine what the field headers and values are.

Instead, it reads the data vertically and assigns each column the default value F1, F2, F3 (Field 1, Field 2, Field 3) and so on. Blank cells are read as null values.

The screenshot shows a Microsoft Excel spreadsheet titled "Crimes 2016 (crimes_2016)". The Data pane on the left lists "Crimes 2016" as a sub-table under the main sheet "Crimes 2016". The main table has 15 columns labeled F1 through F19. The first few rows show data for violent crimes in 2016, with columns for month, state, and total crimes. The last row shows data for Atlanta, Georgia, with columns for month, state, and population.

Mo	Ala	Mar	May	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19
Violent Crimes in 2016																		
Location	state	Month																
Albuquerque	New Mexico					46												
Anaheim	California		4															
Anchorage	Alaska	1					26											
Denton	Texas				17													
Atlanta	Georgia					85												

To see if Data Interpreter can help clean this data set, we select **Use Data Interpreter**.

Data Interpreter detected the proper headings for the fields, removed the extra formatting and found several sub-tables. The sub-tables are listed in the **Sheets** section in the Data pane and are named using the original sheet name and the cell ranges for each sub-table.

In this example there are three sub-tables: **Crimes 2016 A4:H84**, **Crimes 2016 K5:L40**, and **Crimes 2016 O5:P56**.

Location city	Location state	Months Apr	Months Jun	Months Jul	Months Aug	Months Sep	Months Oct	State	Total Crimes 2016	State	Population 2016
Albuquerque	New Mexico						46	Alabama	12	Alabama	4860545
Anaheim	California			4				Alaska	26	Alaska	741522
Anchorage	Alaska		1					Arizona	132	Arizona	6908642
Arlington	Texas					17		California	515	Arkansas	2988231
Atlanta	Georgia						85	Colorado	64	California	39296476
Aurora	Colorado						16	D.C.	105	Colorado	5530105
Austin	Texas					28		Florida	210	Connecticut	3587685
Bakersfield	California			22				Georgia	85	Delaware	952698
Baltimore	Maryland							Hawaii	9	District of Columbia	684336

To examine the results of the Data Interpreter more closely, we click the **Review the results** link in the Data pane to view an annotated copy of the spreadsheet.

Here we see a copy of the original data, color coded to identify which data was identified as header data and which data was identified as field values.

Violent Crimes in 2016 In the United States by City and State											
Location city	Location state	Months Apr	Months Jun	Months Jul	Months Aug	Months Sep	Months Oct	state	Total Crimes 2016	State	Population 2016
Albuquerque	New Mexico					46		Alabama	12	Alabama	4860545
Anaheim	California			4				Alaska	26	Alaska	741522
Anchorage	Alaska		1					Arizona	132	Arizona	6908642
Arlington	Texas				17			California	515	Arkansas	2988231
Atlanta	Georgia					85		Colorado	64	California	39296476
Aurora	Colorado					16		D.C.	105	Colorado	5530105
Austin	Texas				28			Florida	210	Connecticut	3587685
Bakersfield	California		22					Georgia	85	Delaware	952698
Baltimore	Maryland					230		Hawaii	9	District of Columbia	684336
Boston	Massachusetts					28		Illinois	536	Florida	20656589
Buffalo	New York					38		Indiana	151	Georgia	10313620
Chandler	Arizona					3		Kansas	10	Hawaii	1428683

The next tab shows us the sub-tables that Data Interpreter found, outlined by the cell ranges.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1 Violent Crimes in 2016 in the United States by City and State																	
2																	
3																	
4																	
Location	Location	Months	Months	Months	Months	Months	Months	state	Total Crimes 2016	State	Population 2016						
city	state	Apr	Jun	Jul	Aug	Sep	Oct										
6 Albuquerque	New Mexico						46			Alabama	12		Alabama	4860545			
7 Anaheim	California		4							Alaska	26		Alaska	741522			
8 Anchorage	Alaska	1					26			Arizona	132		Arizona	6908642			
9 Arlington	Texas					17				California	515		Arkansas	2988231			
10 Atlanta	Georgia						85			Colorado	64		California	39296476			
11 Aurora	Colorado						16			D.C.	105		Colorado	5530105			
12 Austin	Texas				28					Florida	210		Connectic	3587685			
13 Bakersfield	California		22							Georgia	85		Delaware	952698			
14 Baltimore	Maryland						230			Hawaii	9		District of	684336			
15 Boston	Massachusetts					28				Illinois	536		Florida	20656589			
16 Buffalo	New York					38				Indiana	151		Georgia	10313620			
17 Chandler	Arizona					3				Kansas	10		Hawaii	1428683			
18 Charlotte	- North Carolina		25							Kentucky	95		Idaho	1680026			
19 Chicago	Illinois						536			Louisiana	127		Illinois	12835726			
20 Chula Vista	California	2		1						Maryland	230		Indiana	6634007			
21 Cincinnati	Ohio					50				Massachu	28		Iowa	3130869			
22 Cleveland	Ohio					89				Michigan	221		Kansas	2907731			
23 Colorado	: Colorado			15						Minnesot	26		Kentucky	4436113			
24 Columbus	Ohio					70				Missouri	223		Louisiana	4686157			
25 Corpus Ch	Texas		9							Nebraska	29		Maine	1330232			
26 Dallas	Texas				118					Nevada	128		Maryland	6024752			
27 Denver	Colorado				33					New Jerse	86		Massachu	6823721			
28 Detroit	Michigan	5				221				New Mexi	46		Michigan	9933445			
29 Durham	North Carolina						30			New York	290		Minnesot	5525050			
30 El Paso	Texas					14				North Can	82		Mississipp	2985415			
31 Fort Wayn	Indiana					34				Ohio	217		Missouri	6091176			
						10				Other	66			Other	10000000		

Key for the Data Interpreter Crimes 2016 Crimes 2016_subtables A04_H84 K05_L40 O05_P56

In this example the first sub-table, **Crimes 2016 A4:H84**, has the main data that we want to work with. To use this table as our data table, we can simply drag the original table off the canvas and then drag the new table to the canvas.

Location city	Location state	Months Apr	Months Jun	Months Jul	Months Aug	Months Sep	Months Oct
Albuquerque	New Mexico	null	null	null	null	46	null
Anaheim	California	null	4	null	null	null	null
Anchorage	Alaska	1	null	null	null	26	null
Arlington	Texas	null	null	null	17	null	null
Atlanta	Georgia	null	null	null	null	85	null
Aurora	Colorado	null	null	null	null	16	null
Austin	Texas	null	null	null	28	null	null
Bakersfield	California	null	22	null	null	null	null
Baltimore	Maryland	null	null	null	null	null	230
Boston	Massachusetts	null	null	null	null	28	null
Buffalo	New York	null	null	null	null	38	null
Chandler	Arizona	null	null	null	null	3	null

Once we have the data that we want to work with in the canvas, we can do some additional clean up on the data. For example we can:

- Change the field names so that they represent city, state, and month names.
- Pivot the months fields.
- Drag in the third sub-table **Crimes 2016 o5:P56** and join it to our first sub-table on the **State** field to include state populations for our analysis.
- Hide any duplicate fields that were added as a result of the join.

The results might look something like this:

The screenshot shows the Tableau Data Interpreter interface. At the top, there are buttons for 'Sort fields' and 'Data source order'. Below is a preview of a data source named 'Crimes 2016 A4-HB4'. The preview table has five columns: 'City' (with a dropdown menu), 'State', '# Population 2016', 'Month', and '# Crimes'. The data rows list various US cities with their populations and the number of crimes in August 2016.

City	State	# Population 2016	Month	# Crimes
Phoenix	Arizona	6,908,642	August	111
Pittsburgh	Pennsylvania	12,787,085	August	null
Plano	Texas	27,904,862	August	5
Portland	Oregon	4,085,989	August	null
Raleigh	North Carolina	10,156,689	August	null
Riverside	California	39,296,476	August	7
Sacramento	California	39,296,476	August	null
San Antonio	Texas	27,904,862	August	null
San Diego	California	39,296,476	August	30
San Francisco	California	39,296,476	August	null
San Jose	California	39,296,476	August	35
Santa Ana	California	39,296,476	August	null
Seattle	Washington	7,280,934	August	14
St. Louis	Missouri	6,091,176	August	133
St. Petersburg	Florida	20,656,589	August	14

Now we are ready to start analyzing our data in Tableau.

When Data Interpreter is not available

The Data Interpreter option might not be available for the following reasons:

- **The data source is already in a format that Tableau can interpret:** If Tableau Desktop doesn't need extra help from Data Interpreter to handle unique formatting or extraneous information, the Data Interpreter option is not available.
- **Many rows or many columns:** The Data Interpreter option is not available when your data has the following attributes:
 - Data contains more than 2000 columns.
 - Data contains more than 3000 rows and more than 150 columns.
- **The data source is not supported:** Data Interpreter is only available for Microsoft Excel, Text (.csv) files, PDF files and Google Sheets. For Excel, your data must be in the .xls or .xlsx format.

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Key for Understanding the Data Interpreter Results

Use the key to understand how your data source has been interpreted.
To view the results, click a worksheet tab.
Note: Tableau never makes changes to your underlying data source.

Key:
 Data is interpreted as column headers (field names).
 Data is interpreted as values in your data source.
 Data derived from an Excel merged cell is interpreted as value in your data source.
 Data is ignored and not included as part of your data source.
 Data has been excluded from your data source.
Note: To search for all excluded data, use CRTL+F on Windows or Command F on the Mac, and then type ***DATA REMOVED***.

If the Data Interpreter has interpreted the Tableau data source incorrectly, close the spreadsheet, and then clear the Cleaned with Data Interpreter check box from the Data Source page.
If the Tableau data source continues to be interpreted incorrectly or for general information about why some data was removed by the Data Interpreter, refer to [Resolving Common Issues with Data Interpreter Results](#)

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If the Tableau data source continues to be interpreted incorrectly or for general information about why some data was removed by the Data Interpreter, refer to [Resolving Common Issues with Data Interpreter Results](#)

Ready

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Note: Tableau never makes changes to your underlying data source.

Key:
 Data is interpreted as column headers (field names).
 Data is interpreted as values in your data source.
 Data derived from an Excel merged cell is interpreted as value in your data source.
 Data is ignored and not included as part of your data source.
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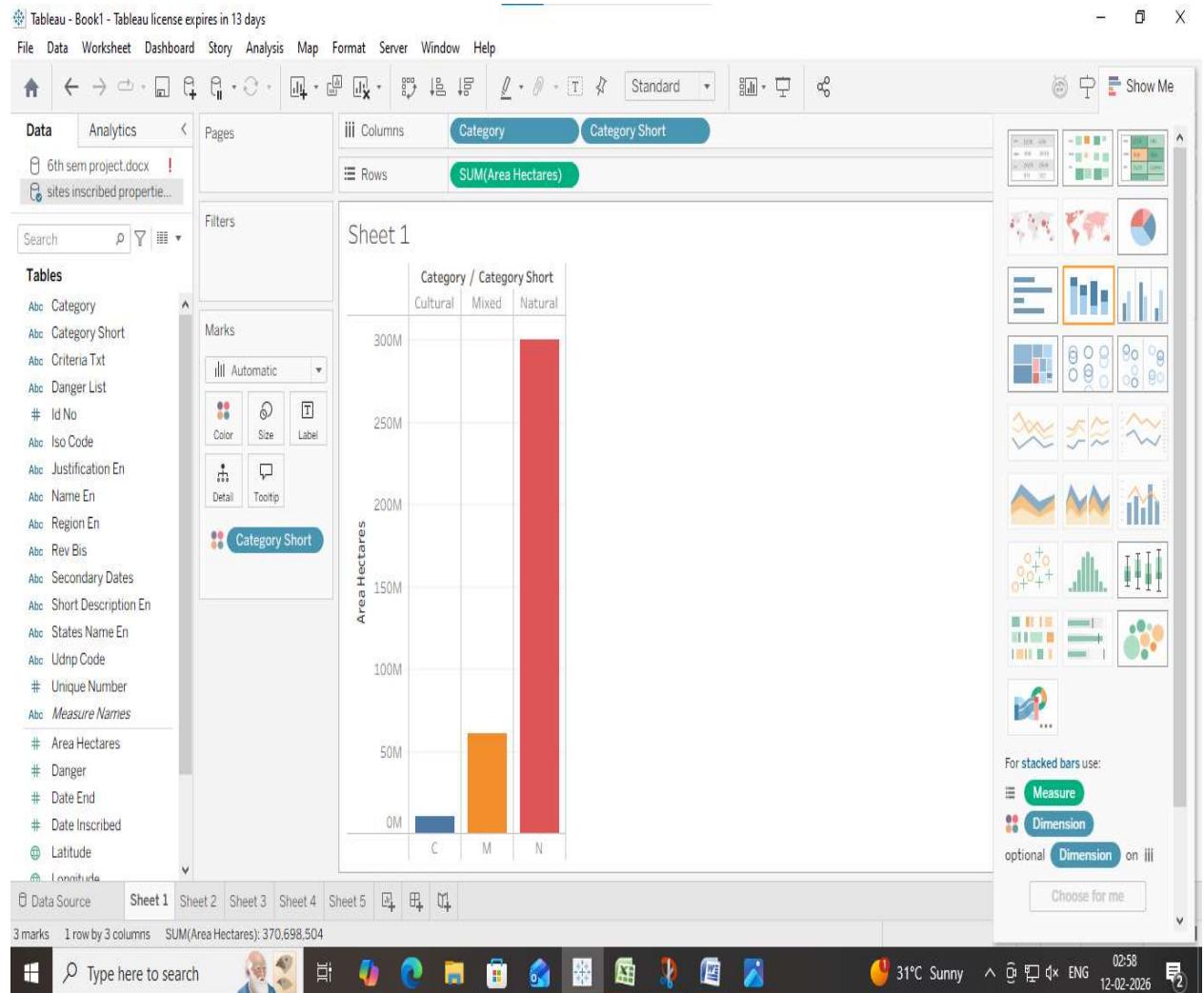
Help Tableau improve the Data Interpreter by emailing your file to support@tableau.com or filing a support request with an attached file at: <http://tableau.com/support/request>

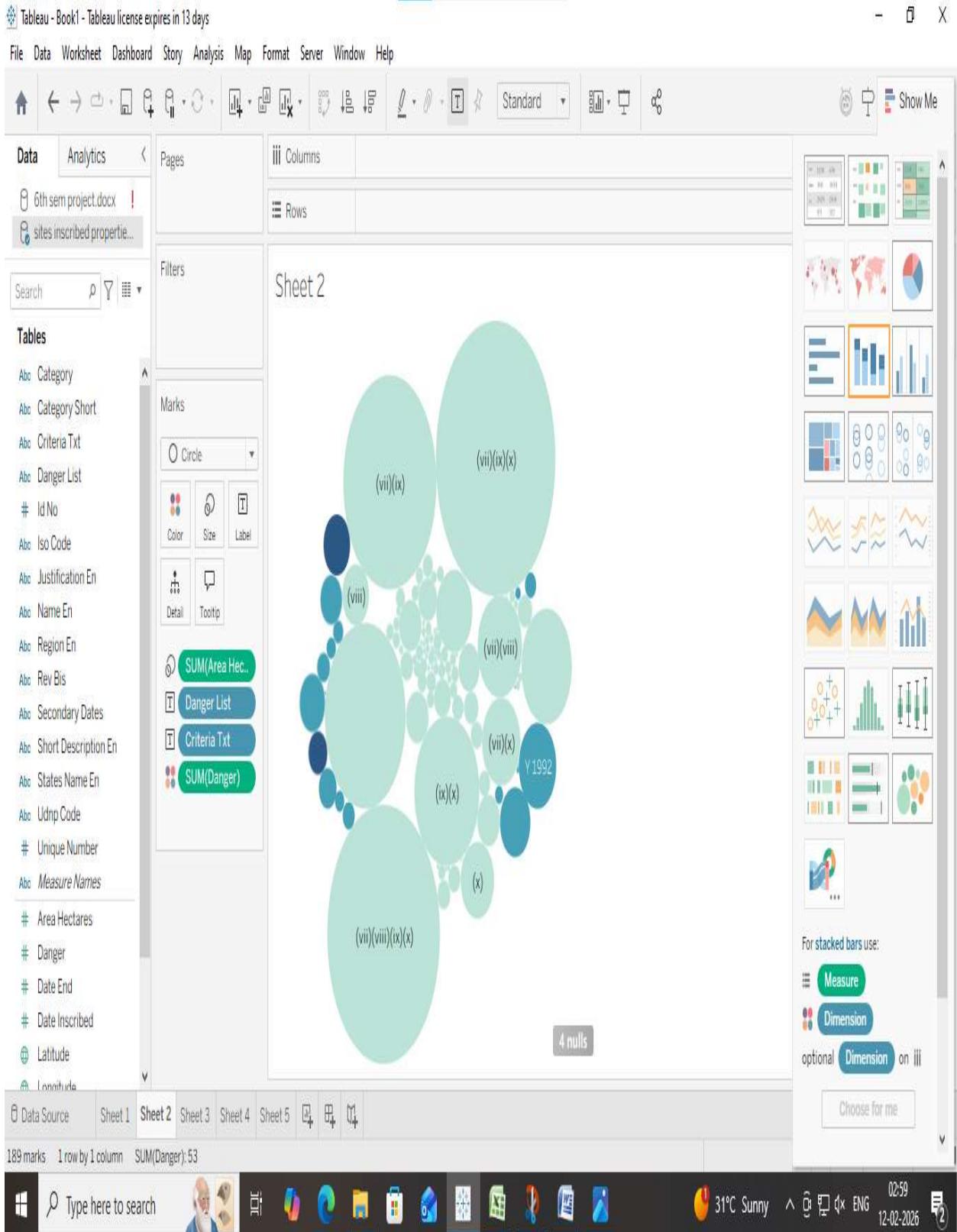
Ready

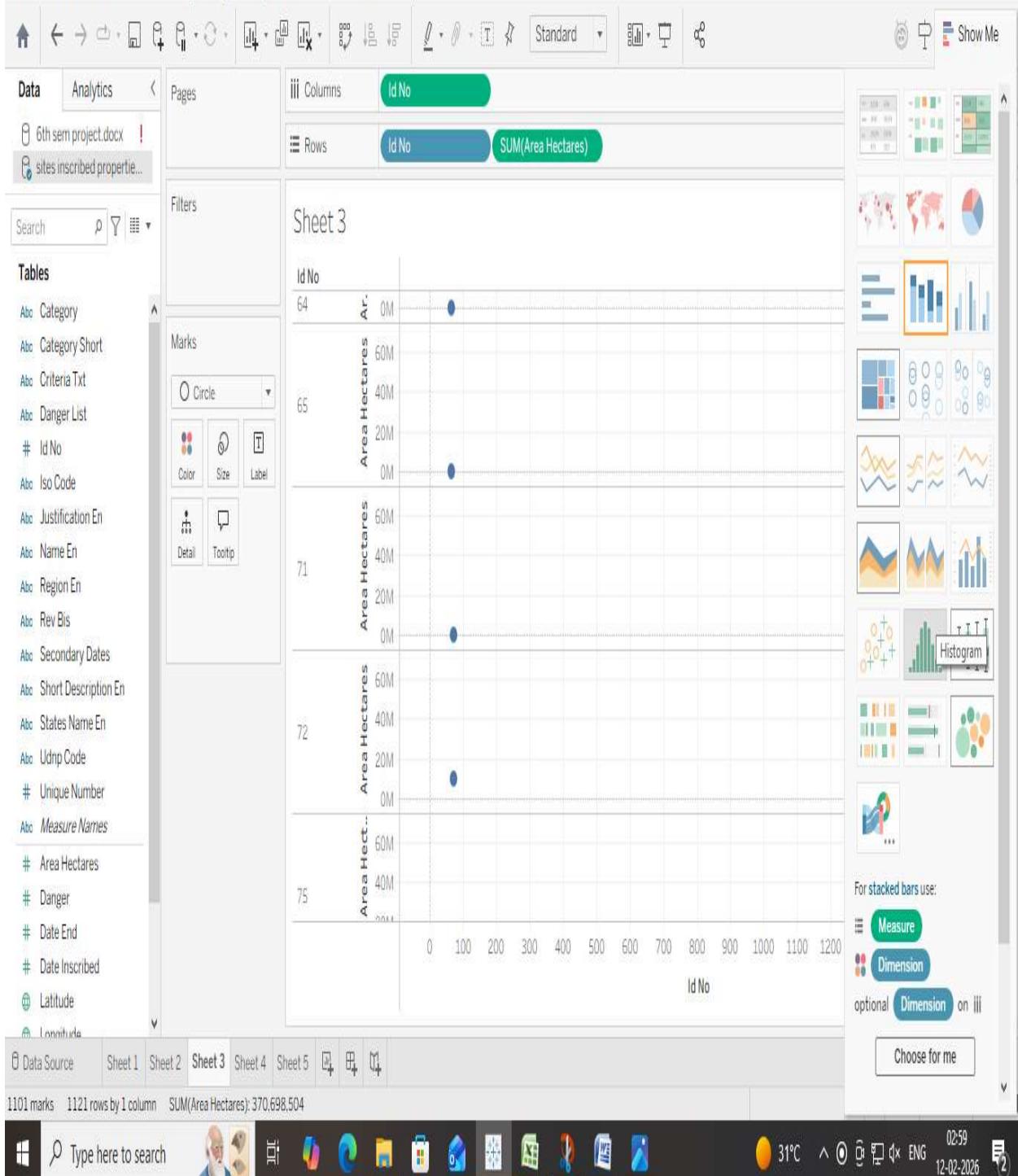
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OUTPUT:







Pages **Category**

Rows **Category Short**

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Sheet 4

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Tables

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- # Id No
- Abc Iso Code
- Abc Justification En
- Abc Name En
- Abc Region En
- Abc Rev Bis
- Abc Secondary Dates
- Abc Short Description En
- Abc States Name En
- Abc Uidnp Code
- # Unique Number
- Abc Measure Names
- # Area Hectares
- # Danger
- # Date End
- # Date Inscribed
- Latitude
- Longitude

Data Source Sheet 1 Sheet 2 Sheet 3 Sheet 4 Sheet 5

107 marks 3 rows by 3 columns $\text{SUM}(\text{Area Hectares})$: 370,698,504

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GROUP PHOTO



DEMO LINK

<https://drive.google.com/file/d/1cfH07QDIxO6omP7VUHZTdwLQwYb4j7NU/view?usp=drivesdk>