# Infosys Springboard Virtual Internship 6.0 Completion Report

## TEAM DETAILS

**Batch Number**: 1 -

**Start date**: 13/08/2025

**Names:**

- Rishi Patel
- Gandla Akshaya
- Bhuvana Sarika Chintalapudi
- Hiranmai Tejaswini Bommisetti
- Sanjana T
- Pranav Raskar
- Yamini Seerapu
- Dhrisya H
- Pavithira P
- Tata Jyothi Venkata Naga Sushma
- Roshan Shabhika A
- Gowra Sreevarshini
- Radhika Kela

**Internship Duration:** 8 Weeks

## 1. PROJECT TITLE

“Interactive Data Visualization of Global Travel and Holidays”.

## 2. PROJECT OBJECTIVE

To develop a user-friendly interactive Power BI dashboard embedded in a Streamlit web application.

## 3. PROJECT DESCRIPTION IN DETAIL

This internship project focused on collecting, analyzing, and visualizing global tourism data to understand travel patterns, seasonal trends, and destination preferences. The aim was to convert raw tourism data into meaningful insights that can support decision-making for tourism boards, travel companies, and policy-makers. The data was cleaned, processed, and visualized using Power BI, and later integrated into a Streamlit web application to make the insights interactive and easily accessible.

## Approach

The project followed a structured, step-by-step approach over eight weeks, covering the complete data analytics lifecycle from data collection to deployment:

1. **Data Collection:**
    - Identified and collected data from reliable sources such as government tourism websites, UNWTO (United Nations World Tourism Organization) reports, and global travel APIs.
    - Gathered information on holidays, tourist arrivals, travel expenditure, seasonal trends, and popular destinations.
2. **Data Preprocessing & Cleaning:**
    - Merged multiple datasets into a single database and standardized country/region names.
    - Detected and handled missing values through imputation or removal.
    - Removed outliers and standardized units, currencies, and date formats.
3. **Data Transformation:**
    - Applied techniques like normalization, aggregation, and feature engineering to make the data more suitable for analysis.
    - Categorized the data by region, season, and holiday types to enable comparative analysis.
4. **Visualization & Dashboard Development:**
    - Imported the processed data into Power BI and created interactive visualizations showing global travel trends, seasonal peaks, and regional comparisons.
    - Added filters, slicers, and time-series analysis tools for deeper insights.
5. **Web Integration:**
    - Built a Streamlit application and embedded the Power BI dashboard using an iframe for easy access and interaction.
    - Ensured a seamless user experience and responsive design.
6. **Testing & Documentation:**
    - Verified the accuracy and functionality of the dashboard.
    - Documented all project steps, data sources, methods, and visualization techniques.
    - Prepared the final report and presentation for stakeholders.

## Technology Used

- **Data Collection & Processing:** Python (Pandas, NumPy), Excel, APIs
- **Data Cleaning & Transformation:** Python, Power Query
- **Visualization & Dashboard:** Microsoft Power BI
- **Web Deployment:** Streamlit (Python)
- **Documentation:** MS Word

## Impact of the Project in Real-World Implementation

This project has significant practical value and real-world applications in the travel and tourism industry:

- **Policy Making:** Governments and tourism boards can use the insights to identify seasonal peaks, manage resources, and design targeted tourism policies.
- **Strategic Planning:** Travel agencies and businesses can plan promotional campaigns and pricing strategies based on tourist flow and expenditure trends.
- **Infrastructure Development:** Understanding tourist patterns helps in planning transportation, accommodation, and public service facilities more effectively.
- **Market Analysis:** Airlines, hotels, and tour operators can analyze demand cycles and make data-driven business decisions.
- **Traveler Guidance:** The dashboard also provides valuable insights to travelers, helping them plan trips during ideal seasons or avoid peak times.

# 4. TIMELINE OVERVIEW

| Week | Activities Planned | Activities Completed |
|---|---|---|
| **Week 1** | Identify data sources and collect global holiday data. Organize raw files. | Collected holiday data from tourism websites, UNWTO, and APIs. Stored raw datasets centrally. |
| **Week 2** | Gather complementary travel data, merge datasets, and identify missing values/outliers. | Collected arrivals, expenditure, and destination data. Merged datasets and noted inconsistencies. |

| | | |
|---|---|---|
| **Week 3** | Clean data, handle missing values, remove outliers, and standardize formats. | Cleaned data, handled missing values, corrected outliers, and standardized units/currencies. |
| **Week 4** | Transform data (normalize, aggregate, feature engineering) and plan dashboard layout. | Applied data transformation and categorized data. Drafted Power BI dashboard layout. |
| **Week 5** | Explore Power BI, import data, create core visualizations, and add filters. | Practiced Power BI, imported dataset, created visualizations, and added interactive elements. |
| **Week 6** | Enhance visualizations for regional comparisons and time-series; finalize dashboard. | Improved visuals, added regional insights, and finalized interactive features. |
| **Week 7** | Set up Streamlit and embed Power BI dashboard. | Built Streamlit app and embedded Power BI dashboard using iframe. |
| **Week 8** | Test dashboard, refine visuals, document steps, and prepare final report/presentation. | Tested accuracy, refined visuals, documented workflow, and prepared final report and presentation. |

## 5A. KEY MILESTONES

| **Milestone** | **Description** | **Date Achieved** |
|---|---|---|
| **Project Kickoff** | Introduction to the project team, mentor, and coordinator. Overview of internship guidelines, project expectations, and deliverables. | 13/08/2025 |
| **Prototype/ First Draft** | Completion of Milestone 1, initial implementation of the project including data collection and preliminary dashboard design. Key achievements documented. | 26/08/2025 |
| **Mid-Term Review** | Review of progress till Milestone 2, Summarized completed tasks such as data cleaning, transformation, and initial Power BI visualizations. Highlighted learning outcomes. | 09/09/2025 |

| | | |
|---|---|---|
| **Final Submission** | Technical completion of the project, including final Power BI dashboard, Streamlit integration, cleaned datasets, and detailed documentation. | 03/10/2025 |
| **Presentation** | Preparation and delivery of the final presentation and project demo to the team. Included practice sessions and feedback incorporation. | 06/10/2025 |

## 5B. PROJECT EXECUTION DETAILS

The project focused on analyzing and visualizing global tourism data to provide insights into travel patterns, seasonal trends, and popular destinations. It followed a structured workflow over eight weeks, incorporating data collection, cleaning, transformation, visualization, and deployment using Power BI and Streamlit.

### 1. Project Kickoff

- Introduced to the project team, mentor, and coordinator.
- Reviewed internship guidelines, project scope, and timeline.
- Discussed project tools, datasets, and reporting formats.

### 2. Data Collection

- Identified key sources: government tourism portals, UNWTO, and global travel APIs.
- Collected historical and current holiday data and organized raw files in a central repository.
- Gathered complementary travel data including tourist arrivals, expenditure, popular destinations, and seasonal trends.
- Merged datasets and aligned country/region naming conventions.

### 3. Data Cleaning & Structuring

- Explored various data cleaning techniques.
- Handled missing values using imputation or removal.
- Removed or corrected outliers to ensure data accuracy.
- Standardized units, currencies, and date formats.
- Structured cleaned data into a format suitable for visualization and analysis.

**4. Data Transformation & Dashboard Planning**

- Applied normalization, aggregation, and feature engineering for seasonal and regional insights.
- Categorized data by region, season, and holiday type.
- Drafted Power BI dashboard layout, including sections for trends, peaks, regional comparisons, and time-series analysis.

**5. Power BI Dashboard Development**

- Practiced Power BI using a sample dataset before importing actual data.
- Imported transformed data into Power BI.
- Created core visualizations: global travel trends, seasonal peaks, and regional comparisons.
- Added filters, slicers, and interactive elements for user exploration.
- Enhanced dashboard visuals for time-series analysis and responsive design.

**6. Streamlit Integration**

- Set up the Streamlit environment.
- Built a basic Streamlit application.
- Embedded the Power BI dashboard using an iframe in the Streamlit app.
- Ensured smooth interaction between Streamlit and Power BI components.

**7. Testing, Refinement & Documentation**

- Tested data accuracy and dashboard functionality.
- Refined visualizations for clarity and decision-making.
- Documented all project steps, including data sources, cleaning methods, transformation logic, and dashboard features.
- Prepared final presentation and report highlighting applications in tourism planning, strategy, and policy-making

## 6. SNAPSHOTS / SCREENSHOTS

**DATASETS:**

## GLOBAL HOLIDAYS

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Country_name | Country_code | Date | Holiday_name | Holiday_Type |
| 2 | Aruba | ABW | 01-01-2010 | New Year's Day | Public holiday |
| 3 | Aruba | ABW | 25-01-2010 | Betico Croes' Bi | Public holiday |
| 4 | Aruba | ABW | 15-02-2010 | Carnival Monda | Public holiday |
| 5 | Aruba | ABW | 18-03-2010 | National Anthen | Public holiday |
| 6 | Aruba | ABW | 02-04-2010 | Good Friday | Public holiday |
| 7 | Aruba | ABW | 05-04-2010 | Easter Monday | Public holiday |
| 8 | Aruba | ABW | 27-04-2010 | King's Day | Public holiday |
| 9 | Aruba | ABW | 01-05-2010 | Labor Day | Public holiday |
| 10 | Aruba | ABW | 13-05-2010 | Ascension Day | Public holiday |
| 11 | Aruba | ABW | 25-12-2010 | Christmas Day | Public holiday |
| 12 | Aruba | ABW | 26-12-2010 | Boxing Day | Public holiday |
| 13 | Aruba | ABW | 01-01-2011 | New Year's Day | Public holiday |
| 14 | Aruba | ABW | 25-01-2011 | Betico Croes' Bi | Public holiday |
| 15 | Aruba | ABW | 07-03-2011 | Carnival Monda | Public holiday |
| 16 | Aruba | ABW | 18-03-2011 | National Anthen | Public holiday |
| 17 | Aruba | ABW | 22-04-2011 | Good Friday | Public holiday |
| 18 | Aruba | ABW | 25-04-2011 | Easter Monday | Public holiday |
| 19 | Aruba | ABW | 27-04-2011 | King's Day | Public holiday |
| 20 | Aruba | ABW | 01-05-2011 | Labor Day | Public holiday |

## MONTHLY PASSENGERS

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Country_code | Flight_Year | Flight_Month | Total_passengers | Domestic_passengers | International_passengers |
| 2 | ALB | 2010 | 1 | 117.35 | 58.675 | 58.675 |
| 3 | ALB | 2010 | 2 | 86.535 | 43.2675 | 43.2675 |
| 4 | ALB | 2010 | 3 | 103.795 | 51.8975 | 51.8975 |
| 5 | ALB | 2010 | 4 | 102.038 | 51.019 | 51.019 |
| 6 | ALB | 2010 | 5 | 109.037 | 54.5185 | 54.5185 |
| 7 | ALB | 2010 | 6 | 126.159 | 63.0795 | 63.0795 |
| 8 | ALB | 2010 | 7 | 181.095 | 90.5475 | 90.5475 |
| 9 | ALB | 2010 | 8 | 226.824 | 113.412 | 113.412 |
| 10 | ALB | 2010 | 9 | 148.392 | 74.196 | 74.196 |
| 11 | ALB | 2010 | 10 | 110.346 | 55.173 | 55.173 |
| 12 | ALB | 2010 | 11 | 93.342 | 46.671 | 46.671 |
| 13 | ALB | 2010 | 12 | 131.909 | 65.9545 | 65.9545 |
| 14 | ALB | 2011 | 1 | 135.743 | 67.8715 | 67.8715 |
| 15 | ALB | 2011 | 2 | 101.417 | 50.7085 | 50.7085 |
| 16 | ALB | 2011 | 3 | 128.551 | 64.2755 | 64.2755 |
| 17 | ALB | 2011 | 4 | 141.269 | 70.6345 | 70.6345 |
| 18 | ALB | 2011 | 5 | 136.785 | 68.3925 | 68.3925 |
| 19 | ALB | 2011 | 6 | 150.219 | 75.1095 | 75.1095 |
| 20 | ALB | 2011 | 7 | 199.495 | 99.7475 | 99.7475 |

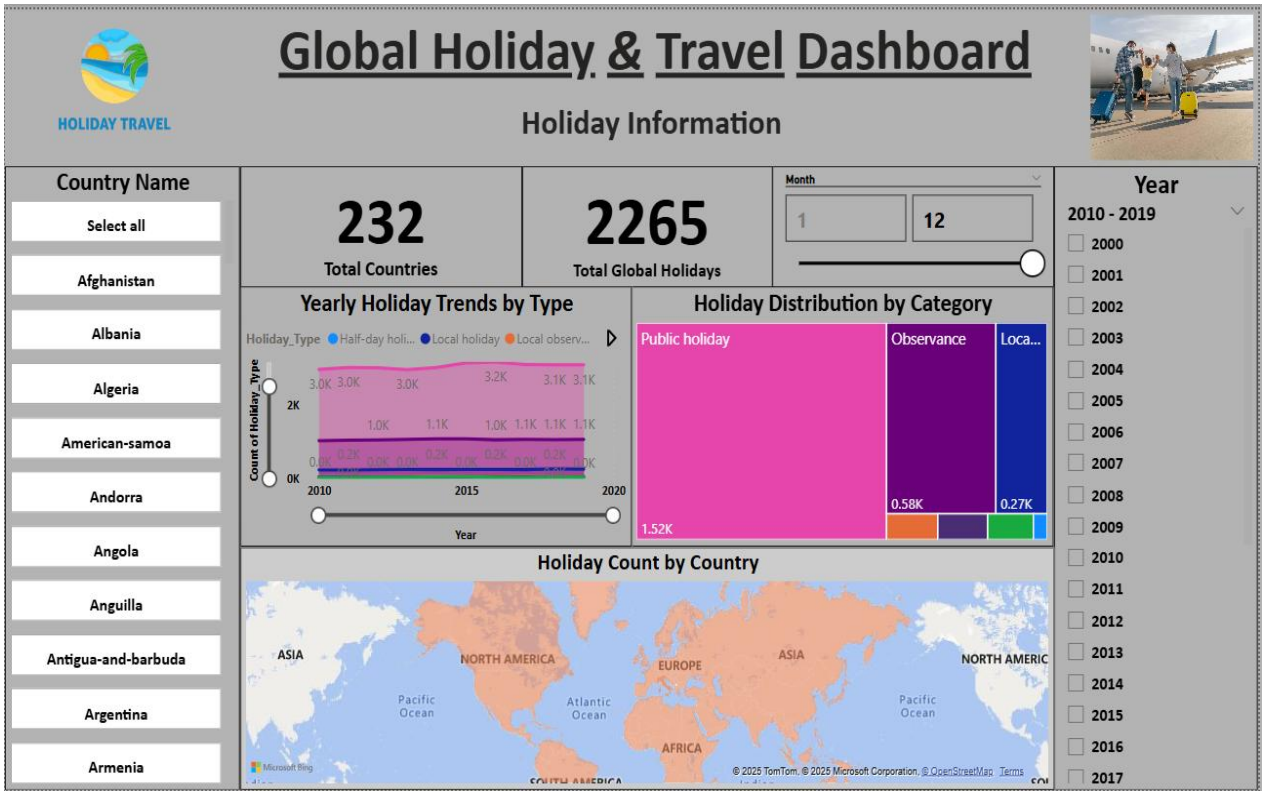
## TOURIST DESTINATIONS

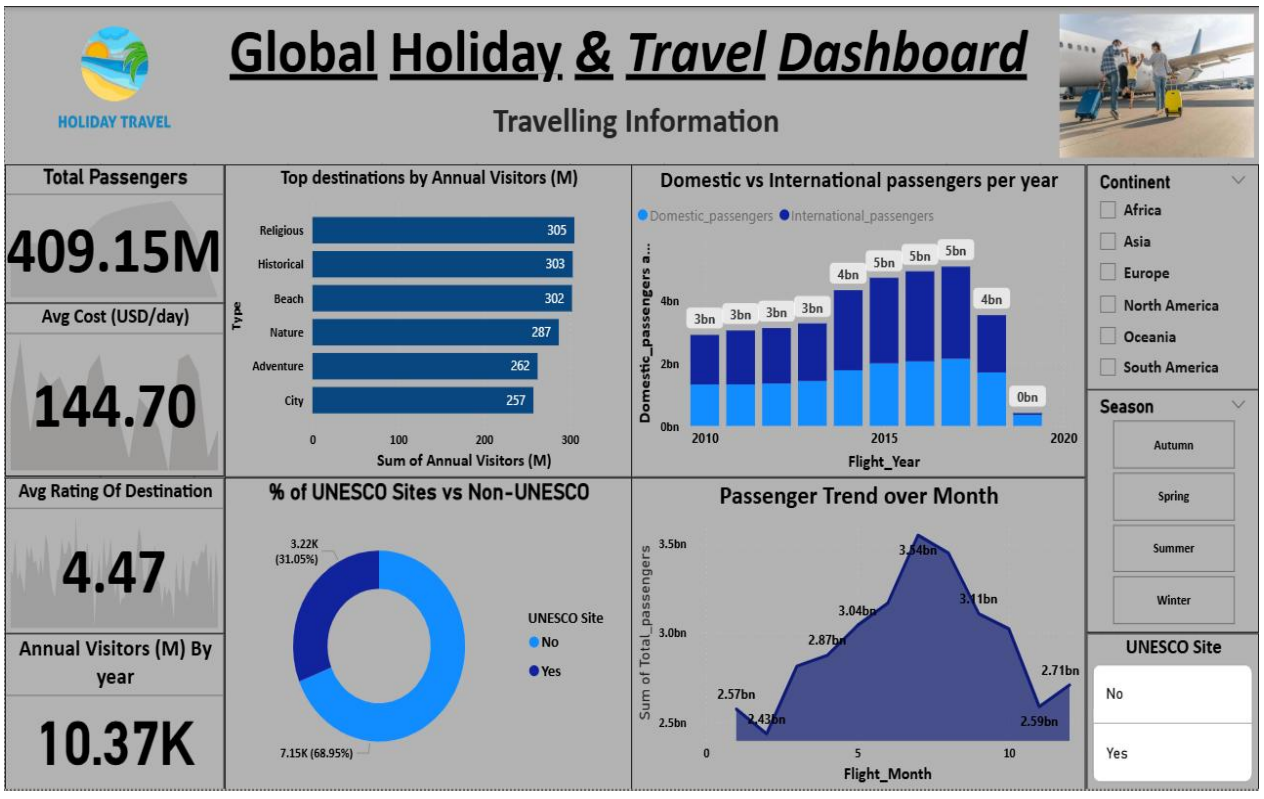
| Destination Name | Country | Continent | Type | Cost (USD/ | Best Season | Avg Rating | Annual Visitors (M) | UNESCO Site | Country_code |
|---|---|---|---|---|---|---|---|---|---|
| Serene Temple | Morocco | Africa | Beach | 174.84 | Summer | 4.5 | 7.45 | No | MAR |
| Sacred Valley | Germany | Europe | Religious | 94.41 | Summer | 4.6 | 1.98 | No | DEU |
| Serene Temple | South Africa | Africa | Adventure | 228.96 | Summer | 4.7 | 0.7 | Yes | ZAF |
| Sacred Plaza | Australia | Oceania | Nature | 120.96 | Summer | 4.3 | 2.24 | No | AUS |
| Golden Ruins | Mexico | North America | Adventure | 162.1 | Spring | 3.9 | 4.6 | No | MEX |
| Hidden Valley | Thailand | Asia | Historical | 190.82 | Spring | 4 | 1.83 | Yes | THA |
| Hidden Park | Spain | Europe | Adventure | 104.6 | Summer | 4.1 | 4.83 | No | ESP |
| Grand Valley | Brazil | South America | Beach | 118.53 | Autumn | 4.7 | 5.39 | No | BRA |
| Ancient Beach | New Zealand | Oceania | Historical | 122.78 | Spring | 4.5 | 6.27 | No | NZL |
| Serene Valley | Kenya | Africa | City | 119.99 | Spring | 4.8 | 1.43 | No | KEN |
| Hidden Ruins | China | Asia | Historical | 119.91 | Autumn | 5 | 1.66 | No | CHN |
| Ancient Park | Japan | Asia | Historical | 123.32 | Winter | 4.5 | 9.14 | No | JPN |
| Grand Canyon | Morocco | Africa | City | 191.13 | Winter | 4.1 | 3.46 | Yes | MAR |
| Golden Temple | Morocco | Africa | Religious | 288.92 | Winter | 4.9 | 2.26 | No | MAR |
| Serene Park | Italy | Europe | Historical | 186.92 | Autumn | 4.6 | 1.34 | Yes | ITA |
| Lush Ruins | Peru | South America | City | 99.55 | Autumn | 4 | 3.08 | No | PER |
| Sacred Canyon | Brazil | South America | City | 126.97 | Winter | 4.8 | 3.17 | No | BRA |
| Mystic Forest | South Africa | Africa | Adventure | 93.47 | Autumn | 4.5 | 8.12 | No | ZAF |
| Mystic Ruins | Vietnam | Asia | Beach | 116.15 | Summer | 4.7 | 0.55 | No | VNM |

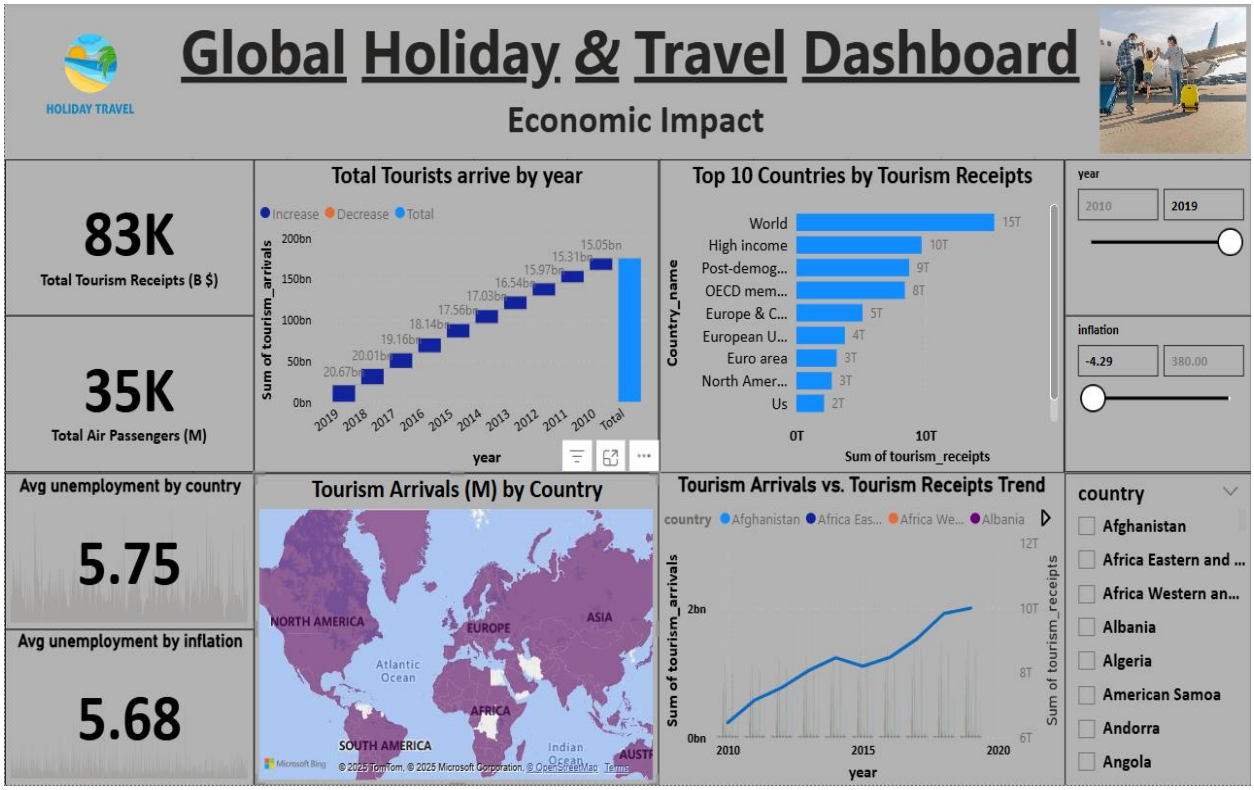
## WORLD TOURIST ECONOMY

| country | Country_code | year | tourism_receipts | tourism_arrivals | tourism_exports | tourism_departures | tourism_expenditures | gdp | inflation | unemployment |
|---|---|---|---|---|---|---|---|---|---|---|
| Aruba | ABW | 2010 | 1254000000 | 1394000 | 68.72600349 | 83600 | 12.58695476 | 2453597207 | 2.078140719 | 10.6 |
| Africa Eastern and | AFE | 2010 | 22022165207 | 29071500.51 | 8.708755035 | 22476000 | 5.894887354 | 8.4941E+11 | 5.537537916 | 5.4628 |
| Afghanistan | AFG | 2010 | 147000000 | 323400 | 5.728735463 | 430800 | 1.836670677 | 15856668556 | 2.178537524 | 8.1468 |
| Africa Western an | AFW | 2010 | 4034222723 | 11070796.45 | 2.508371519 | 139000 | 8.686147 | 6.00153E+11 | 1.784844205 | 5.517933333 |
| Angola | AGO | 2010 | 726000000 | 425000 | 1.411031258 | 139000 | 0.776370723 | 83799474070 | 14.46965649 | 9.43 |
| Albania | ALB | 2010 | 1778000000 | 2417000 | 53.48460236 | 3443000 | 25.11795461 | 11926926616 | 3.626046956 | 14.086 |
| Andorra | AND | 2010 | 449200000 | 8551000 | 50.53291196 | 139000 | 11.56313759 | 3449925739 | 10.56164712 | 6.3548 |
| Arab World | ARB | 2010 | 72002050459 | 130381603.8 | 8.110145863 | 48935320.31 | 8.613161345 | 2.15535E+12 | 3.911061955 | 9.344740017 |
| United Arab Emira | ARE | 2010 | 8577000000 | 9843800 | 5.735809017 | 6044200 | 7.11552467 | 3.00189E+11 | 0.877983288 | 6.2198 |
| Argentina | ARG | 2010 | 5605000000 | 6800000 | 6.909259852 | 6083000 | 9.374886997 | 4.23627E+11 | 4.841220114 | 7.714 |
| Armenia | ARM | 2010 | 694000000 | 684000 | 31.39315511 | 563000 | 14.12777155 | 9260285756 | 8.176361385 | 19.523 |
| American Samoa | ASM | 2010 | 445800000 | 23100.00038 | 76.10219675 | 142600 | 8.547413695 | 573000000 | 0.417611358 | 9.2 |
| Antigua and Barbu | ATG | 2010 | 449200000 | 788000 | 25.34852163 | 139000 | 7.856061383 | 1298255556 | 3.370025402 | 3.436533333 |
| Australia | AUS | 2010 | 31064000000 | 5790000 | 11.66589346 | 7103000 | 10.70691868 | 1.14884E+12 | 2.918340027 | 5.214 |
| Austria | AUT | 2010 | 449200000 | 22004000 | 5.48643545 | 9882000 | 6.451634372 | 3.89828E+11 | 1.81353439 | 4.883 |
| Azerbaijan | AZE | 2010 | 792000000 | 1963000 | 2.805051572 | 3176000 | 8.362321412 | 52909294792 | 5.726872247 | 5.63 |
| Burundi | BDI | 2010 | 2099999.905 | 142000 | 1.161968068 | 38000 | 5.768512955 | 2032135192 | 6.493265915 | 7.846 |
| Belgium | BEL | 2010 | 12680000000 | 7186000 | 3.43357261 | 8801000 | 5.735099481 | 4.81557E+11 | 2.189299204 | 8.293 |
| Benin | BEN | 2010 | 149399993.9 | 525600 | 9.002109166 | 184520.0012 | 3.970147618 | 9535345011 | 2.207835325 | 1.04 |

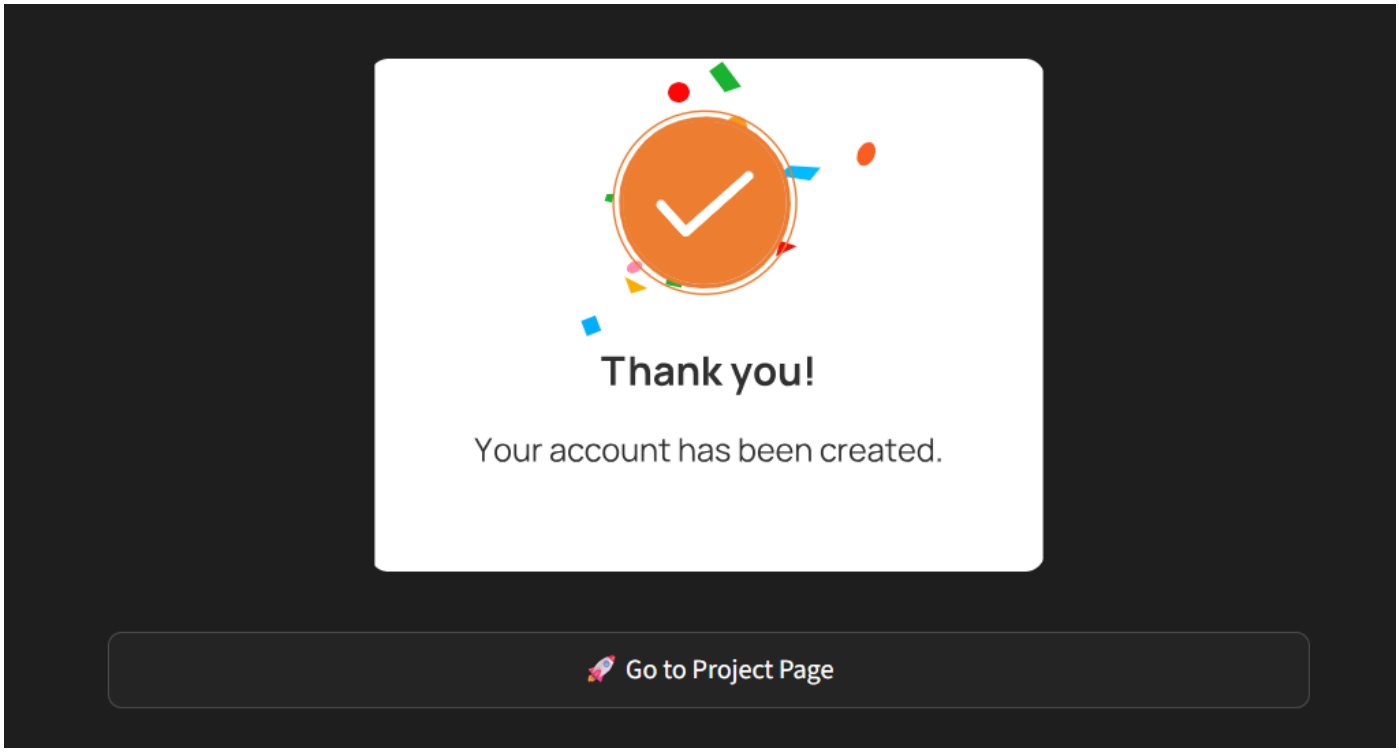
## DASHBOARD


Global Holiday & Travel Dashboard
HOLIDAY TRAVEL
Holiday Information
Country Name
Select all
Afghanistan
Albania
Algeria
American-samoa
Andorra
Angola
Anguilla
Antigua-and-barbuda
Argentina
Armenia
232
Total Countries
2265
Total Global Holidays
Month
1
12
Year
2010 - 2019
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Yearly Holiday Trends by Type
Holiday_Type Half-day holi... Local holiday Local observ...
Count of Holiday_Type
Year
Holiday Distribution by Category
Public holiday
Observance
Loca...
1.52K
0.58K
0.27K
Holiday Count by Country
ASIA
NORTH AMERICA
EUROPE
AFRICA
Pacific Ocean
Atlantic Ocean


Global Holiday & Travel Dashboard
HOLIDAY TRAVEL
Travelling Information
Total Passengers
409.15M
Avg Cost (USD/day)
144.70
Avg Rating Of Destination
4.47
Annual Visitors (M) By year
10.37K
Top destinations by Annual Visitors (M)
Religious 305
Historical 303
Beach 302
Nature 287
Adventure 262
City 257
Type
Sum of Annual Visitors (M)
Domestic vs International passengers per year
Domestic_passengers
International_passengers
Domestic_passengers a...
Flight_Year
Continent
Africa
Asia
Europe
North America
Oceania
South America
Season
Autumn
Spring
Summer
Winter
% of UNESCO Sites vs Non-UNESCO
3.22K (31.05%)
7.15K (68.95%)
UNESCO Site
No
Yes
Passenger Trend over Month
Sum of Total_passengers
Flight_Month
UNESCO Site
No
Yes


Global Holiday & Travel Dashboard
Economic Impact
HOLIDAY TRAVEL
83K
Total Tourism Receipts (B $)
35K
Total Air Passengers (M)
Avg unemployment by country
5.75
Avg unemployment by inflation
5.68
Total Tourists arrive by year
Increase Decrease Total
Sum of tourism_arrivals
year
Top 10 Countries by Tourism Receipts
Country_name
World
High income
Post-demog...
OECD mem...
Europe & C...
European U...
Euro area
North Amer...
Us
Sum of tourism_receipts
year
2010
2019
inflation
-4.29
380.00
Tourism Arrivals (M) by Country
NORTH AMERICA
EUROPE
ASIA
AFRICA
SOUTH AMERICA
Atlantic Ocean
Indian Ocean
Tourism Arrivals vs. Tourism Receipts Trend
country
Afghanistan
Africa Eas...
Africa We...
Albania
Sum of tourism_arrivals
Sum of tourism_receipts
year
country
Afghanistan
Africa Eastern and ...
Africa Western an...
Albania
Algeria
American Samoa
Andorra
Angola

## STREAMLIT WEB APPLICATION

# Project :- Global Holiday & Travel

"A Power BI dashboard analyzing global tourism & holidays data."

## 📋 Project Overview

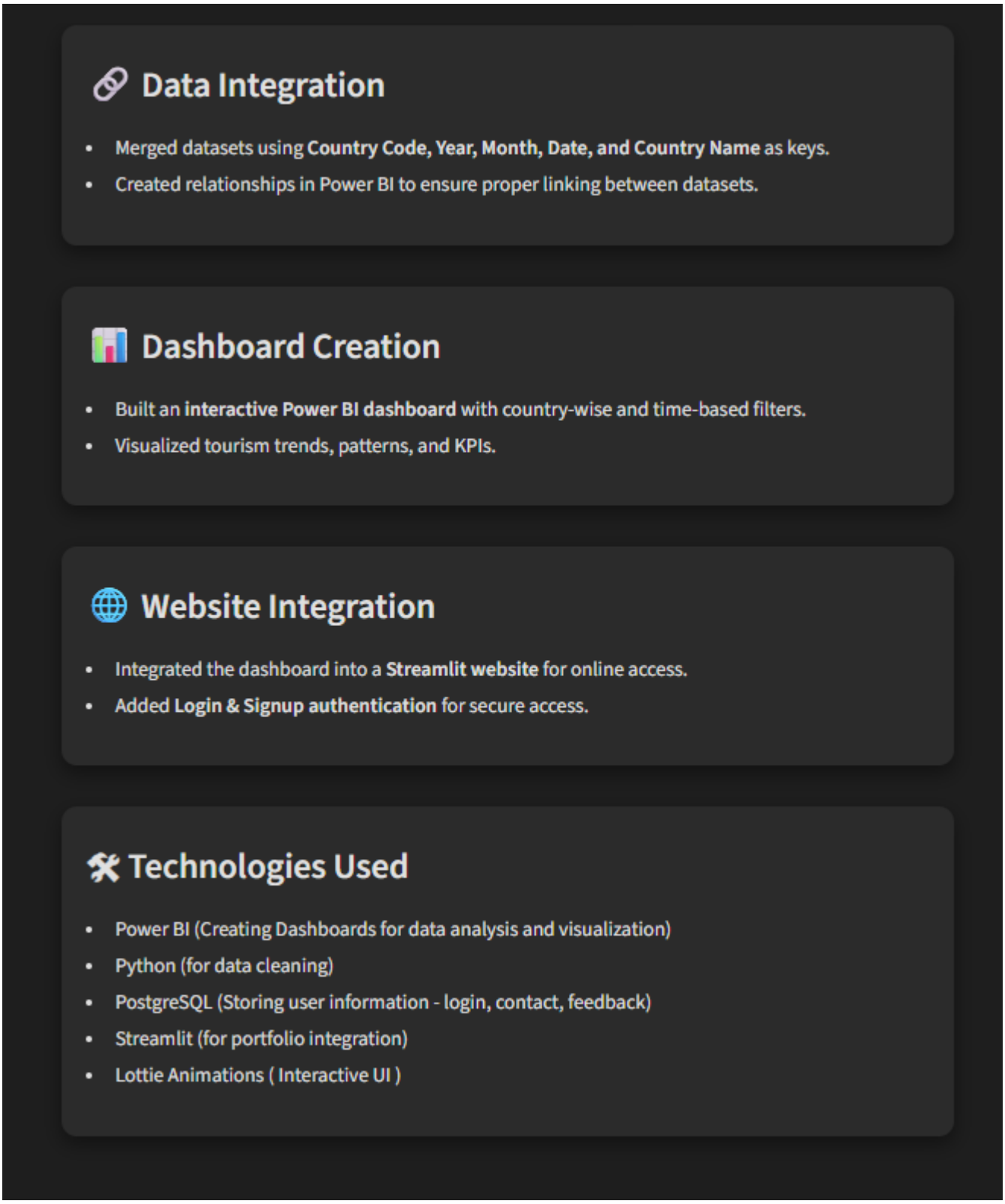
We developed a **Global Holiday & Travel Dashboard** to analyze worldwide tourism data.
This project integrates data collection, cleaning, modeling, and visualization into one powerful dashboard.

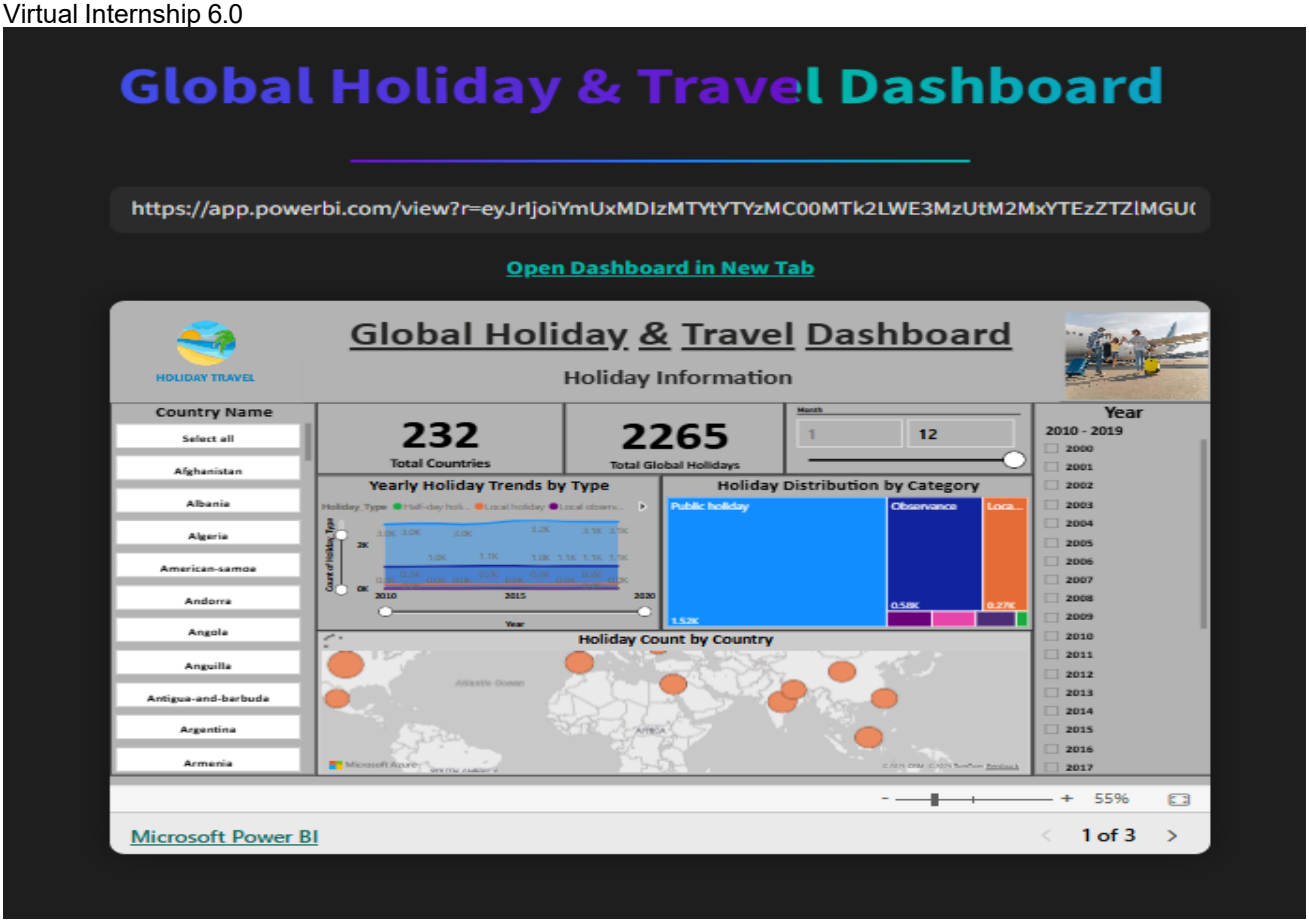
## 📂 Data Collection

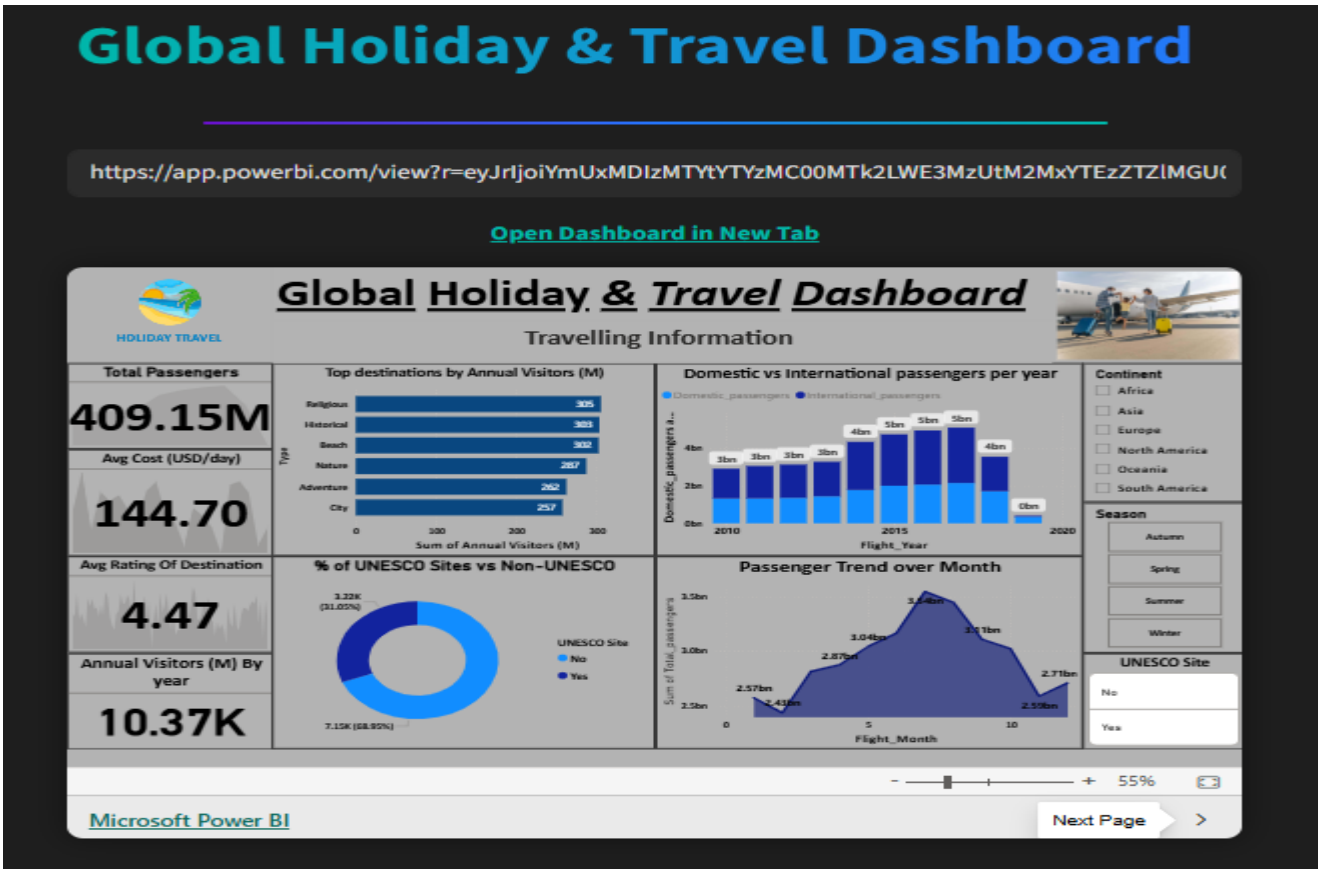
- Collected datasets from multiple sources such as **Kaggle** and open data portals.
- Combined diverse tourism-related datasets to build a complete data model.

## 🧹 Data Cleaning

- Used Python libraries like **Pandas**, **NumPy**, and **Scikit-Learn** to clean and preprocess data.
- Handled a large amount of **missing values** using **KNN Imputer** for accurate predictions.


Data Integration
Merged datasets using Country Code, Year, Month, Date, and Country Name as keys.
Created relationships in Power BI to ensure proper linking between datasets.
Dashboard Creation
Built an interactive Power BI dashboard with country-wise and time-based filters.
Visualized tourism trends, patterns, and KPIs.
Website Integration
Integrated the dashboard into a Streamlit website for online access.
Added Login & Signup authentication for secure access.
Technologies Used
Power BI (Creating Dashboards for data analysis and visualization)
Python (for data cleaning)
PostgreSQL (Storing user information - login, contact, feedback)
Streamlit (for portfolio integration)
Lottie Animations ( Interactive UI )


Global Holiday & Travel Dashboard
https://app.powerbi.com/view?r=eyJrIjoiYmUxMDIzMTYtYTYzMC00MTk2LWE3MzUtM2MxYTEzZTZlMGU(
Open Dashboard in New Tab
Global Holiday & Travel Dashboard
Holiday Information
HOLIDAY TRAVEL
Country Name
Select all
Afghanistan
Albania
Algeria
American-samoa
Andorra
Angola
Anguilla
Antigua-and-barbuda
Argentina
Armenia
232
Total Countries
2265
Total Global Holidays
Yearly Holiday Trends by Type
Holiday Distribution by Category
Public holiday
Observance
Holiday Count by Country
Year
2010 - 2019
55%
Microsoft Power BI
1 of 3


Global Holiday & Travel Dashboard
https://app.powerbi.com/view?r=eyJrIjoiYmUxMDIzMTYtYTYzMC00MTk2LWE3MzUtM2MxYTEzZTZlMGU(
Open Dashboard in New Tab
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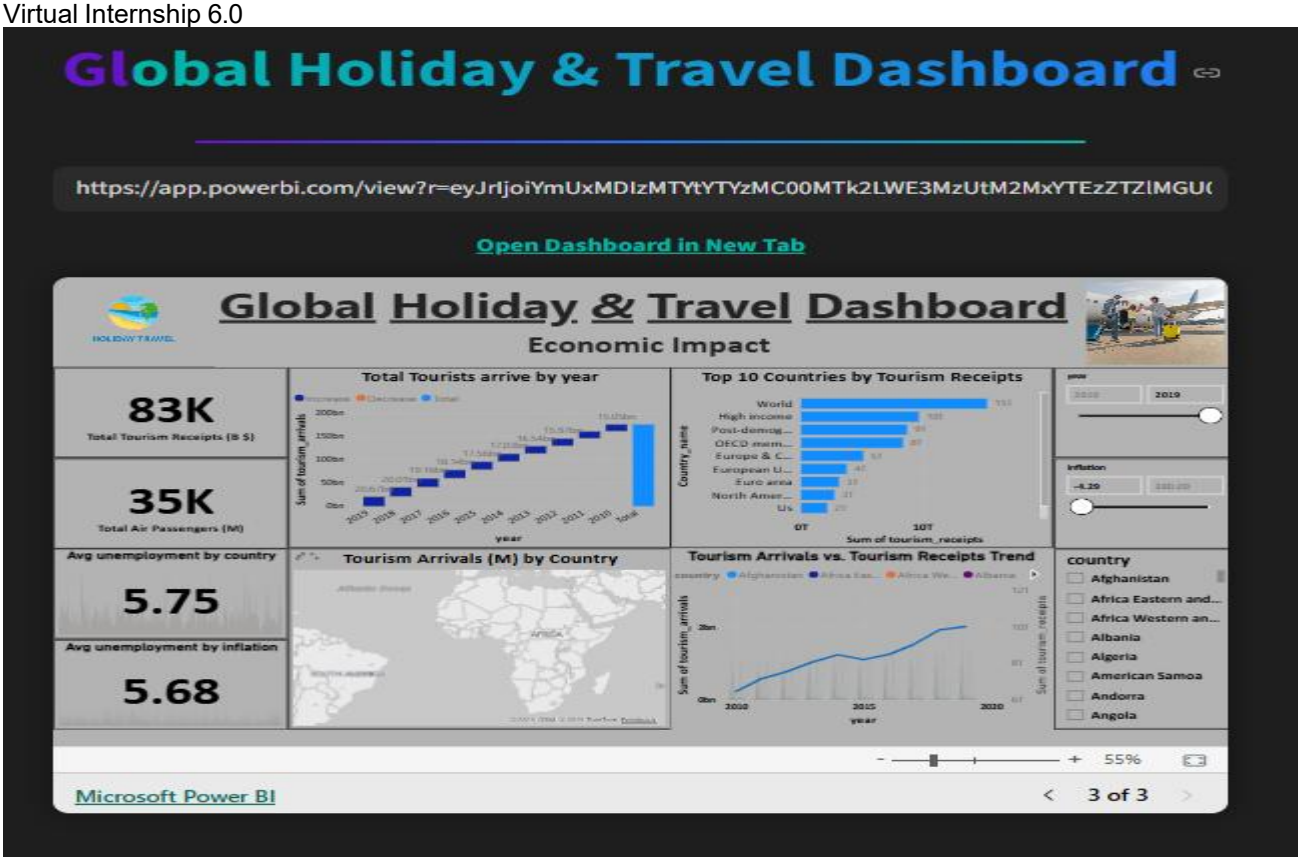
City
Sum of Annual Visitors (M)
Domestic vs International passengers per year
Flight_Year
Continent
Africa
Asia
Europe
North America
Oceania
South America
Season
Autumn
Spring
Summer
Winter
% of UNESCO Sites vs Non-UNESCO
UNESCO Site
No
Yes
Passenger Trend over Month
Flight_Month
UNESCO Site
55%
Microsoft Power BI
Next Page

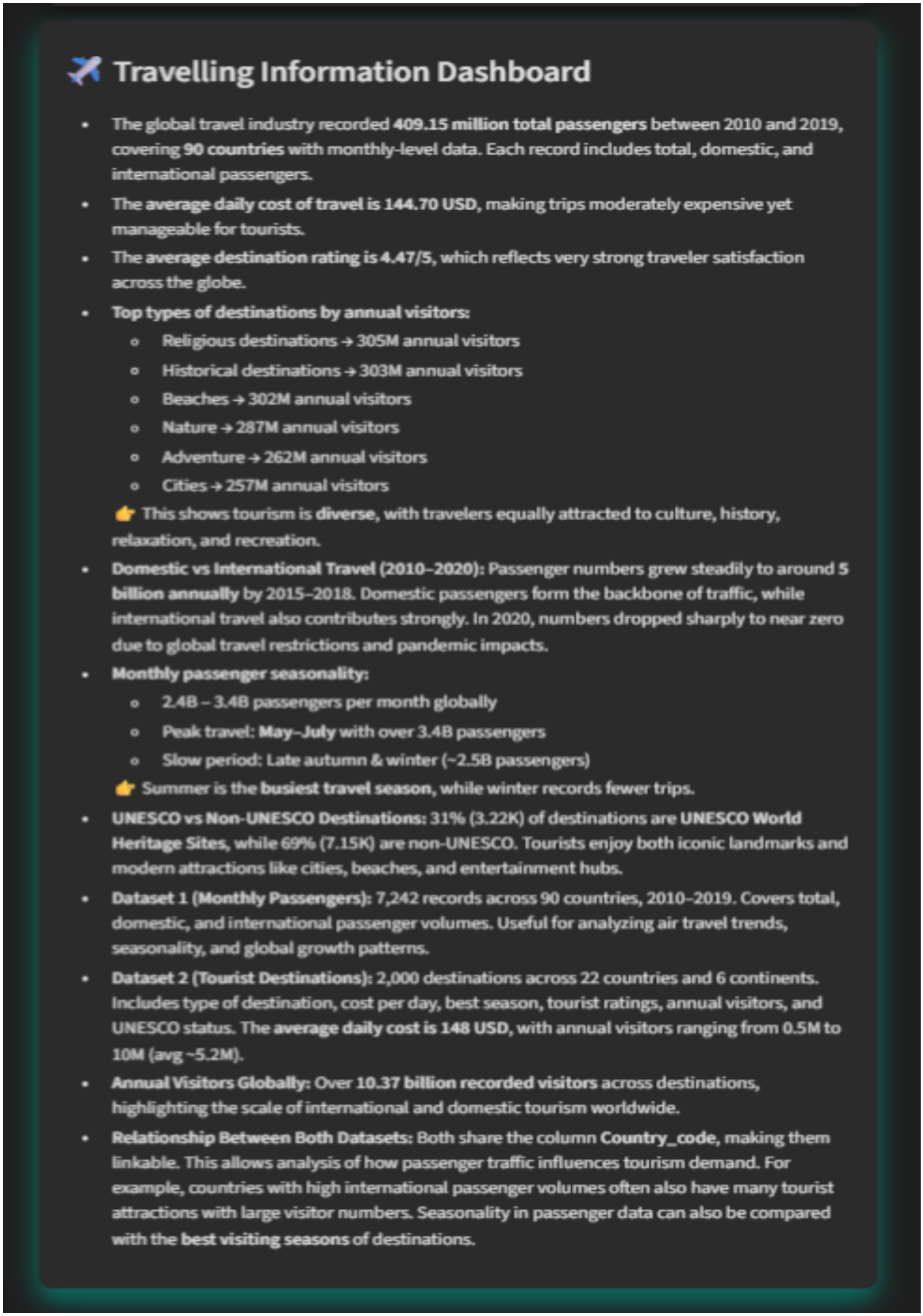



# Summary of Project

"Insights from all dashboards in one place."

## 🌎 Holiday Informaiton Dashboard

- The dataset contains **44,380 holidays** recorded across **232 countries** covering a timeframe from **2010 to 2019** (10 years).
- The **United States recorded the highest number of holidays with 1,079**, followed by India (614), Spain (587), Canada (576), Malaysia (527), Germany (521), China (512), Israel (471), Taiwan (450), and Nepal (403).
- **Christmas Day**, occurring **1,853 times**, is the most widely celebrated holiday. Other frequent global holidays include Good Friday, Easter Monday, Independence Day, New Year's Day, New Year's Eve, Easter Sunday, Boxing Day, Christmas Eve, and Labor Day/May Day.
- The majority of the holidays are **public holidays** totaling 30,663 (≈70%). There are 10,490 observances, 2,301 local holidays, and fewer than 1,000 combined special, replacement, or half-day holidays.
- Holidays **peak in December** (Christmas & New Year), **April** (Easter), and **May** (Labor Day), while February and September have the fewest recorded holidays globally.
- Some countries have a wide variety of unique holiday names while others mainly repeat global holidays. Countries that focus on observances differ from those emphasizing public holidays, showing cultural variations in recognition. Additionally, multi-day holiday streaks often occur during major religious or national festivals.



# ✈️ Travelling Information Dashboard

- The global travel industry recorded **409.15 million total passengers** between 2010 and 2019, covering **90 countries** with monthly-level data. Each record includes total, domestic, and international passengers.
- The **average daily cost of travel is 144.70 USD**, making trips moderately expensive yet manageable for tourists.
- The **average destination rating is 4.47/5**, which reflects very strong traveler satisfaction across the globe.
- **Top types of destinations by annual visitors:**
  - Religious destinations → 305M annual visitors
  - Historical destinations → 303M annual visitors
  - Beaches → 302M annual visitors
  - Nature → 287M annual visitors
  - Adventure → 262M annual visitors
  - Cities → 257M annual visitors

  👉 This shows tourism is **diverse**, with travelers equally attracted to culture, history, relaxation, and recreation.
- **Domestic vs International Travel (2010–2020):** Passenger numbers grew steadily to around **5 billion annually** by 2015–2018. Domestic passengers form the backbone of traffic, while international travel also contributes strongly. In 2020, numbers dropped sharply to near zero due to global travel restrictions and pandemic impacts.
- **Monthly passenger seasonality:**
  - 2.4B – 3.4B passengers per month globally
  - Peak travel: **May–July** with over 3.4B passengers
  - Slow period: Late autumn & winter (~2.5B passengers)

  👉 Summer is the **busiest travel season**, while winter records fewer trips.
- **UNESCO vs Non-UNESCO Destinations:** 31% (3.22K) of destinations are **UNESCO World Heritage Sites**, while 69% (7.15K) are non-UNESCO. Tourists enjoy both iconic landmarks and modern attractions like cities, beaches, and entertainment hubs.
- **Dataset 1 (Monthly Passengers):** 7,242 records across 90 countries, 2010–2019. Covers total, domestic, and international passenger volumes. Useful for analyzing air travel trends, seasonality, and global growth patterns.
- **Dataset 2 (Tourist Destinations):** 2,000 destinations across 22 countries and 6 continents. Includes type of destination, cost per day, best season, tourist ratings, annual visitors, and UNESCO status. The **average daily cost is 148 USD**, with annual visitors ranging from 0.5M to 10M (avg ~5.2M).
- **Annual Visitors Globally:** Over **10.37 billion recorded visitors** across destinations, highlighting the scale of international and domestic tourism worldwide.
- **Relationship Between Both Datasets:** Both share the column **Country_code**, making them linkable. This allows analysis of how passenger traffic influences tourism demand. For example, countries with high international passenger volumes often also have many tourist attractions with large visitor numbers. Seasonality in passenger data can also be compared with the **best visiting seasons** of destinations.

## Economic Impact Dashboard

- The dataset spans a **ten-year period from 2010 to 2019** and contains **2,660 records across 266 countries and regions**, including both individual nations and aggregates like the World, OECD, and European Union.
- It tracks **11 key indicators** such as tourism receipts, arrivals, exports, departures, expenditures, GDP, inflation, and unemployment.
- The dataset is **completely clean** with no missing values, making it highly reliable for analysis.
- Between 2010 and 2019, the global tourism economy generated a total of **83 trillion USD** in receipts, proving the massive scale of the travel industry.
- In 2019, the top contributors were dominated by high-income economies and regional aggregates:
  - **World → 15 trillion USD**
  - **High-income countries → 10 trillion USD**
  - **Post-demographic dividend nations → 9 trillion USD**
  - **OECD members → 8 trillion USD**
  - **Europe & Central Asia → 5 trillion USD**
  - **European Union → 4 trillion USD**
  - **Euro area → 3 trillion USD**
  - **North America → 3 trillion USD**

  - Among individual nations, the **United States led with nearly 2 trillion USD** in receipts.
- This shows that while the **United States** is the single largest country for tourism earnings, **Europe dominates regionally**.
- Global air passenger numbers reached **35 billion** between 2010 and 2019, reflecting continuous growth in international mobility.
- Tourism arrivals rose steadily from **20 billion in 2010** to a cumulative **83 billion in 2019**.
- Tourism receipts grew in parallel with arrivals, proving that **more travelers consistently drive higher earnings**.
- Statistical analysis shows strong connections between tourism and the economy:
  - **Receipts ↔ Arrivals → 0.87 correlation**
  - **Arrivals ↔ GDP → 0.96 correlation**
  - **Receipts ↔ GDP → 0.86 correlation**
  - **Tourism exports ↔ GDP → -0.17 (negative correlation)**

  - This indicates that richer nations depend proportionally less on tourism, while developing economies rely more heavily on it.
- The **average unemployment rate** across countries is **5.75%**, while unemployment adjusted by inflation averages **5.68%**.
- Countries with stronger tourism receipts often report **lower unemployment levels**, showing how tourism supports **job creation and economic stability**.
- Overall, the data reveals clear insights:
  - Tourism receipts and arrivals grew steadily before the pandemic.
  - High-income and European countries dominate absolute earnings.
  - Small islands and developing economies remain heavily dependent on tourism as a share of GDP.
  - Tourism growth helps stabilize unemployment and drives job creation.
  - The sector is sensitive to global shocks, such as COVID-19, which is not included in this dataset but had major impacts after 2020.

# About Me

Hii, I'm Rishi Patel from Gujarat, India — passionate about Data Analytics & Business Intelligence.

## 🚀 Professional Snapshot

- 🎓 Final-year **B.Tech student in AI & Data Science** with a focus on Data Analytics.
- 🛠️ Skilled in **Python, SQL, Power BI, and Excel** for data cleaning, visualization, and reporting.
- 📊 Experienced in **KPI dashboards, ETL pipelines, and statistical analysis.**
- 🔍 Passionate about **turning raw data into insights** that guide decision-making.

## 👨‍💻 Technical Skills

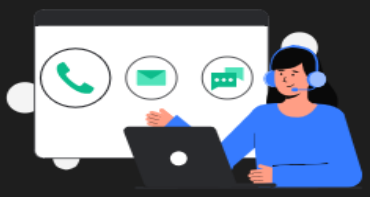
- **Programming & Tools**: Python ( Pandas, NumPy, Matplotlib, Seaborn, etc.), SQL ( Joins, Aggregation & Grouping, Subqueries & CTEs, Window Functions, Date & Time Analysis, etc.), Git & Github.
- **Business Intelligence**: Power BI (DAX, dashboards, visualization)
- **Data Handling**: ETL, data cleaning, modeling, transformation.
- **Excel**: Pivot Tables, VLOOKUP, advanced charting

## 🌟 Beyond Work

- 🏀 A **3-time district basketball champion** — twice at **U14** level and once at **U17**, also a **national-level player.**
- 📈 A curious learner who enjoys solving **real-world business problems** through **data storytelling.**
- 🚀 Known for strong **teamwork, discipline, and leadership** — qualities built both on the court and in professional projects.

✅ Always open to opportunities in **Data Analytics & Business Intelligence**

# Contact Me



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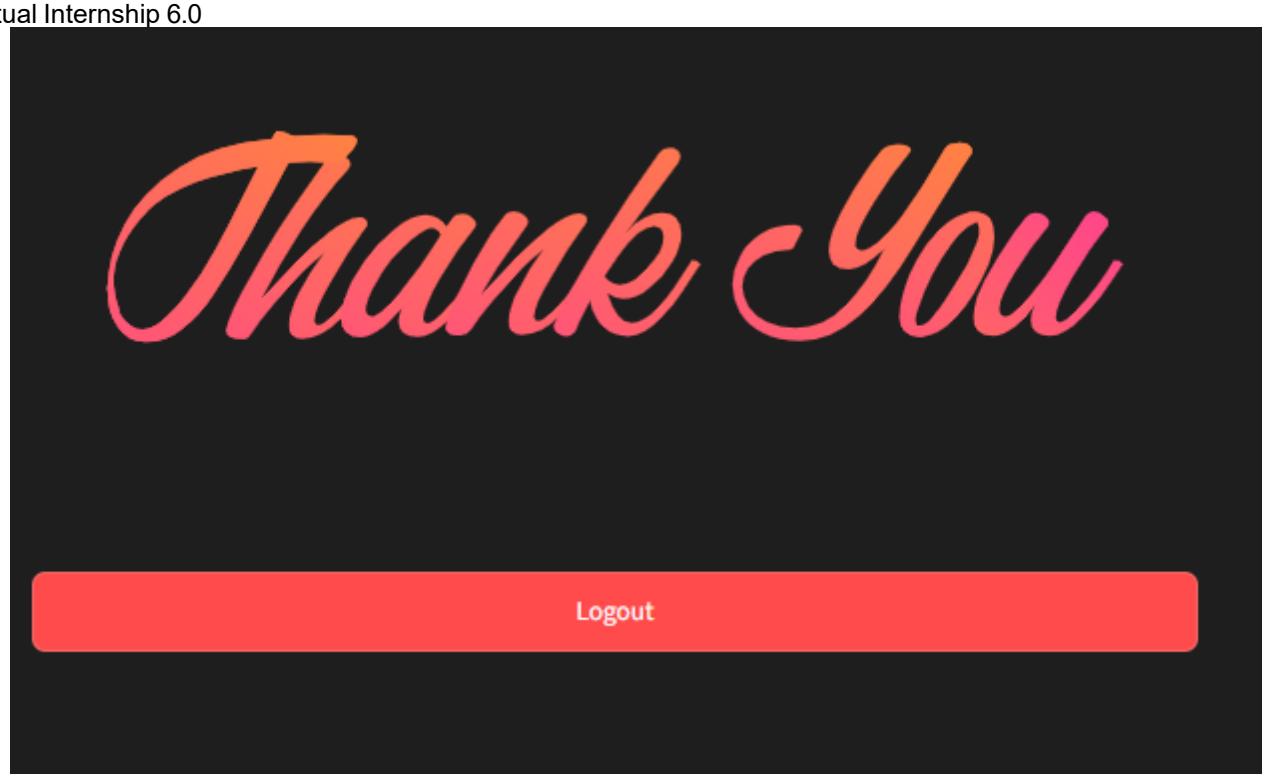
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## 7. CHALLENGES FACED

**1. Sourcing Accurate Data**

- **Challenge:** Finding reliable and up-to-date global tourism datasets was difficult. Some sources had incomplete, inconsistent, or outdated information.
- **Mitigation:** Cross-verified data from multiple sources like UNWTO, government tourism portals, and travel APIs. Maintained a centralized repository to ensure consistency and easy access.

**2. Data Connection Obstacles**

- **Challenge:** Integrating data from different formats (CSV, Excel, APIs) and ensuring smooth connectivity with Power BI was challenging.
- **Mitigation:** Used Python scripts to preprocess and standardize data formats before importing. Leveraged Power BI data connectors and scheduled refresh options to maintain proper connections.

**3. Learning Curve**

- **Challenge:** Acquiring skills for Power BI, Streamlit, and advanced data transformation techniques required additional learning.
- **Mitigation:** Completed online tutorials and practice datasets before working on the main project. Regular guidance from the mentor helped overcome knowledge gaps quickly.

**4. Integration Difficulties**

- **Challenge:** Embedding the Power BI dashboard into a Streamlit application and ensuring interactive features worked seamlessly was technically complex.
- **Mitigation:** Used iframe embedding in Streamlit and tested the interaction repeatedly. Debugged integration issues through trial-and-error and mentor guidance.

**5. Designing Accurate Visuals**

- **Challenge:** Creating meaningful, easy-to-understand visualizations while avoiding misrepresentation of data.
- **Mitigation:** Followed data visualization best practices, iterated designs based on feedback, and included filters and slicers for dynamic exploration.

**6. Enhancing Performance**

- **Challenge:** Large datasets caused slow dashboard performance and lag during interactions.
- **Mitigation:** Applied data aggregation, filtering, and optimized queries in Power BI. Reduced unnecessary fields and used summary tables to improve speed.

## 8. LEARNINGS & SKILLS ACQUIRED

**1. Domain Knowledge:**

- Gained a strong understanding of the global tourism sector, including trends in tourist arrivals, expenditure, popular destinations, and seasonal travel patterns.
- Learned about holiday calendars, peak travel periods, and regional travel behavior, useful for travel planning and policy analysis.

**2. Data Handling & Analytical Skills:**

- **Data Collection:** Identified and sourced data from government tourism sites, UNWTO, and global travel APIs.
- **Data Cleaning & Preprocessing:** Learned techniques to handle missing values, outliers, inconsistencies, and standardize units/currencies.
- **Data Transformation:** Applied normalization, aggregation, feature engineering, and categorization to enable meaningful analysis.
- **Data Structuring:** Organized raw and cleaned datasets into structured formats suitable for visualization and reporting.

**3. Tools & Technologies:**

- **Power BI:** Developed dashboards, created visualizations, applied filters and slicers, and designed interactive, user-friendly layouts.
- **Streamlit:** Integrated dashboards into a web application for interactive exploration.
- **General Tools:** Worked with Excel, CSVs, APIs, and data repositories for storage and manipulation.

**4. Soft Skills & Professional Practices:**

- **Project Planning:** Managed multi-week tasks, from data collection to dashboard deployment.
- **Problem-Solving:** Tackled challenges in data inconsistencies and visualization design.

- **Documentation & Reporting:** Maintained thorough records of data sources, processing methods, and dashboard logic, enhancing transparency and reproducibility.
- **Presentation Skills:** Prepared final reports and presentations targeting actionable insights for tourism strategy and policy applications.

**5. Analytical Mindset Development:**

- Learned to derive actionable insights from large datasets.
- Gained experience in comparing regional and seasonal patterns to inform strategic decisions in travel and tourism.

## 9. TESTIMONIALS FROM TEAM

During my internship, I gained hands-on experience in data collection, cleaning, transformation, and visualization within the global tourism domain. I collected and organized datasets from multiple sources, including government tourism websites, UNWTO, and travel APIs, and applied preprocessing techniques to handle missing values, outliers, and inconsistencies. Using Power BI, I developed interactive dashboards showcasing global travel trends, seasonal patterns, and regional tourism comparisons. I further enhanced accessibility by integrating the dashboards into a Streamlit web application, enabling seamless user interaction. This experience strengthened my analytical, problem-solving, and project management skills, while also deepening my understanding of tourism trends and strategic insights.

- Collected, merged, and structured global tourism datasets from multiple sources.
- Applied data cleaning and preprocessing techniques, including handling missing values, correcting outliers, and standardizing formats.
- Developed an interactive Power BI dashboard to visualize global travel trends, peak seasons, and regional comparisons.
- Integrated the dashboard into a Streamlit web application for seamless user interaction and exploration.
- Gained analytical, problem-solving, and project management skills through end-to-end data workflow execution.
- Acquired domain knowledge in tourism trends, seasonal travel patterns, and policy-relevant insights.

## 10. CONCLUSION

During my internship, I gained comprehensive hands-on experience in data analytics and visualization within the global tourism domain. From collecting and cleaning datasets to developing interactive Power BI dashboards and integrating them into a Streamlit application, I learned to transform raw data into actionable insights. This experience enhanced my technical skills (data preprocessing, visualization, dashboarding, and web integration) as well as soft skills like problem-solving, project management, and documentation.

The internship had a significant impact by allowing me to understand tourism trends, seasonal travel patterns, and regional comparisons, which are crucial for strategic decision-making in travel planning and policy. It also strengthened my ability to communicate complex data insights effectively to support actionable outcomes.

This experience aligns closely with my academic background in Data Analytics and my career aspirations in data-driven decision-making, business analytics, or tourism strategy. It has reinforced my interest in leveraging data and technology to solve real-world problems, while building a strong foundation for a future career in analytics, business intelligence, or strategic planning.

## 11. ACKNOWLEDGEMENTS

I would like to sincerely thank **Infosys Springboard** for providing me with the opportunity to work on the project "**Interactive Data Visualization of Global Travel and Holidays**". This internship has been an invaluable learning experience that allowed me to apply my skills in data collection, cleaning, transformation, and visualization to a real-world problem.

I am deeply grateful to my mentor, **Bhargava Sai Reddy Vanga**, for his guidance, constant support, and insightful feedback throughout the internship. His mentorship helped me navigate challenges and strengthen both my technical and analytical skills.

I would also like to thank **Pranathi**, our program coordinator, for her seamless coordination and timely updates, ensuring a smooth learning experience. My gratitude extends to all team members and peers who supported me, shared knowledge, and made the internship journey collaborative and enriching.

This experience has not only enhanced my technical and analytical abilities but also strengthened my confidence in applying data-driven solutions to real-world challenges.