INSIGHTFUL INDIAN TOURISM EXPLORER

A PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this project report **"Insightful Indian Tourism Explorer using IBM Cognos"** is the Bonafide work of **"MUKESH M (927623BAD065), PRIYANKA P (927623BAD086), SRI HARISH S (927623BAD107)"** who carried out the project work during the academic year 2024-2025 under my supervision. To the best of my knowledge, the work reported herein does not form part of any other project or dissertation based on which a degree or award was conferred on an earlier occasion on this or any other candidate.

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1. Introduction

Tourism plays a significant role in India's economy, contributing substantially to employment and cultural exchange. With the increasing number of domestic and international travelers, understanding tourism trends has become essential for sustainable development and policymaking. This project, titled *"Insightful Indian Tourism Explorer,"* aims to analyze and visualize tourism data across India using intelligent dashboards powered by IBM Cognos Analytics. By extracting and interpreting patterns in visitor demographics, seasonal trends, and regional distributions, the system provides actionable insights to stakeholders including tourism boards, planners, and policymakers. The project leverages real-world data sources like Ministry of Tourism reports and combines them with interactive visualizations to support data-driven decisions. The goal is to enable smarter tourism strategies that enhance traveler experiences, support local economies, and promote responsible travel. This project reflects a collaborative effort in using data analytics for social and economic impact in the tourism sector.

2. Objectives

The primary objective of the Insightful Indian Tourism Explorer project is to utilize data analytics and visualization tools to uncover meaningful insights into India's diverse tourism landscape. The key objectives include:

- To analyse Indian tourism data and uncover trends across different states and seasons. This helps in identifying popular destinations and travel patterns over time.
- To visualize tourist demographics using IBM Cognos Analytics dashboards. This supports easier interpretation of large data sets for better decision-making.
- To promote sustainable tourism by identifying under-visited locations for development. This ensures balanced regional growth and reduced pressure on over-visited spots.
- To help tourism departments and stakeholders make data-driven policy decisions. This enhances strategic planning, budgeting, and marketing efforts in tourism.
- To improve user accessibility through interactive dashboards with clear visual insights. This enables stakeholders to explore, compare, and act on tourism insights efficiently.

3. Dataset Description

The dataset provides detailed tourism-related insights across various Indian states and union territories. It includes metrics such as visitor trends, safety ratings, seasonal data, infrastructure availability, and demographic-specific ratings. This structured data supports tourism analysis and strategic planning for sustainable development.

Source of the Data:

- **Website**: Kaggle – Indian Tourism Analysis
- **Data Format**: CSV
- **Total Records**: 3000,50

- **Total Columns**: 50

Columns Used in the Analysis:

Column Name	Description
State_UT	State in which tourist spot is located
Region	In which region tourist is present represent (example: east)
Category	To which category the tourist place belongs (example: temple, hills)
Average_monthly_visitors	Number of average monthly visitors
Peak_season	Season in which high number of visitors visit
Off_season	Season in which less number of visitors visit
Growth_rate	Percent of visitors growth
Booking_rate	Rate of ticket booking for the place
Domestic_visitors	Number of visitors from India
International_visitors	Number of visitors of countries other than India
Entry_fees	Fees that is charged to visit the tourist spot
Safety_rating	Rating given by people what they feel about the safety in that spot (from 1 to 5)
Hotel_count	Number of hotels present in or around the tourist place
Restaurant_count	Number of restaurants present in or around the tourist place
Average_length_of_stay	Average days that visitor stay the tourist location
Women_travel_safety_rating	Safety rating for women travelers (from 1 to 5)
Child_friendly_rating	Represents how much the spot is child friendly
Average_temperature	Average temperature of location in Celsius
Rainfall(mm)	Rainfall amount in the location in mm
Heritage_score	Cultural site's significance rating.
Most_visited_month	Peak tourist visit period
Cleanliness_rating	Sanitation level by visitors
Pollution_index	Environmental pollution impact score
Famous_food	Region’s popular local cuisine

4. Tools and Technologies Used

Frontend:

- **HTML5**: For structuring the web pages and content.
- **CSS3**: For styling the dashboard and creating responsive layouts.
- **JavaScript**: For interactivity and tab functionality.

Backend:

- **PHP**: For server-side scripting, handling user sessions, and dynamic content.
- **MySQL**: For storing and managing tourism data, user information, and any dynamic content.

Data Visualization:

- **IBM Cognos**: For creating the interactive dashboards and data visualizations based on tourism data.

5. Key Visualizations

- **Bar Charts:** Used in "Global vs Local," "Growth Pulse by Type," "Stay N Serve," and "She & Kids Map" to compare categorical data using the height of bars.
- **Heatmap:** Displayed in the "Visitor Matrix" to show the intensity of visitor numbers across different categories using colour gradients.
- **Line Chart:** Seen in "Growth Pulse Vs Loyalty Rate" and "Connect-Bank" to illustrate trends and changes in data over a continuous range.
- **Pie Chart:** Used in "Growth Pulse by Type" to show the proportion of different categories within a whole.
- **Scatter Plot:** Visible in "Safe Spots" to display the relationship between two different variables.
- **Map:** Featured in "Comeback States Map" and "Geo-Zone" to geographically represent data and patterns.
- **Single Value Cards:** Used for "Visitor Flow," "Entry Cost (INR)," "Trip Treasury," and "Heritage-Score" to highlight key summary statistics.

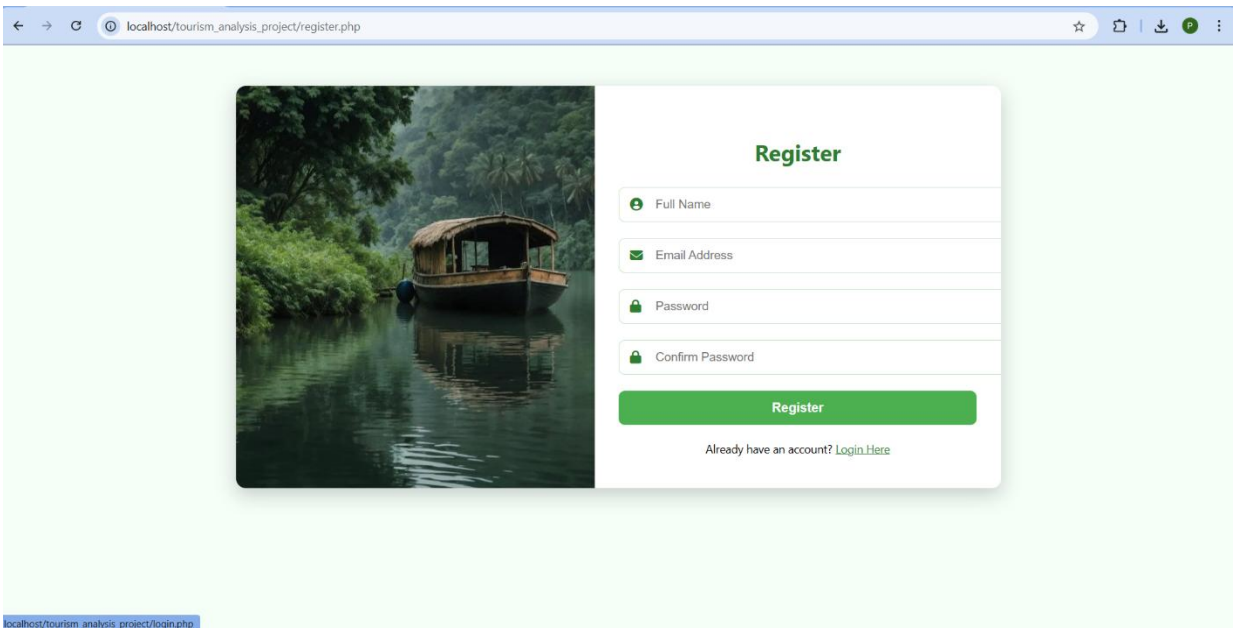
6. Insights Derived

- **Visitor Focus:** The dashboard highlights key metrics like total visitor flow (25.3K) and average entry cost (INR 246.62), alongside a significant "Trip Treasury" (25.3M), indicating the scale and economic impact of tourism.
- **Regional Performance:** Visualizations like "Comeback States Map" and "Geo-Zone" suggest a focus on geographical performance and recovery trends in different regions. "Stay N Serve" likely compares service quality or stay duration across areas.
- **Demographic Considerations:** "She & Kids Map" emphasizes the importance of safety

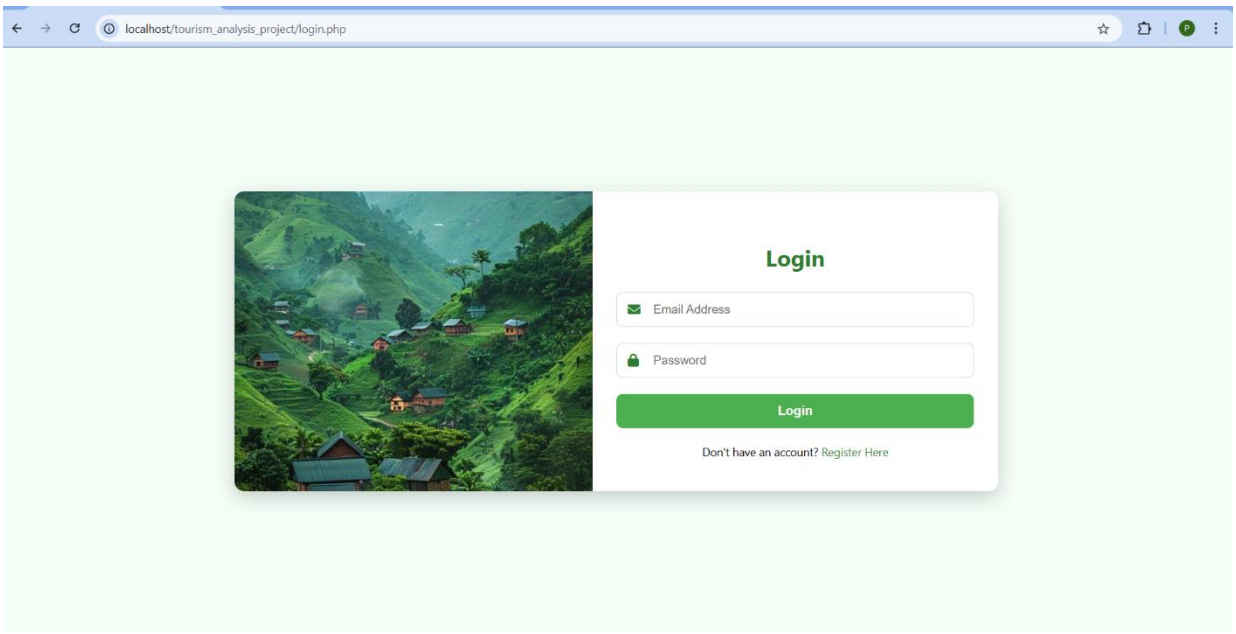
and child-friendliness in different locations, while "Global vs Local" and "Visitor Matrix" provide insights into the composition and behavior of different visitor segments.

- **Growth Drivers:** "Growth Pulse by Type" identifies the contribution of different tourism categories (e.g., Hill Station, Heritage) to overall growth, and "Growth Pulse Vs Loyalty Rate" explores the relationship between growth and visitor retention.
- **Environmental & Heritage Aspects:** "Eco-Sphere" and "Pure-Zone" suggest an evaluation of environmental quality, while the "Herite-Score" (54.31) provides a metric for heritage attractiveness or preservation.

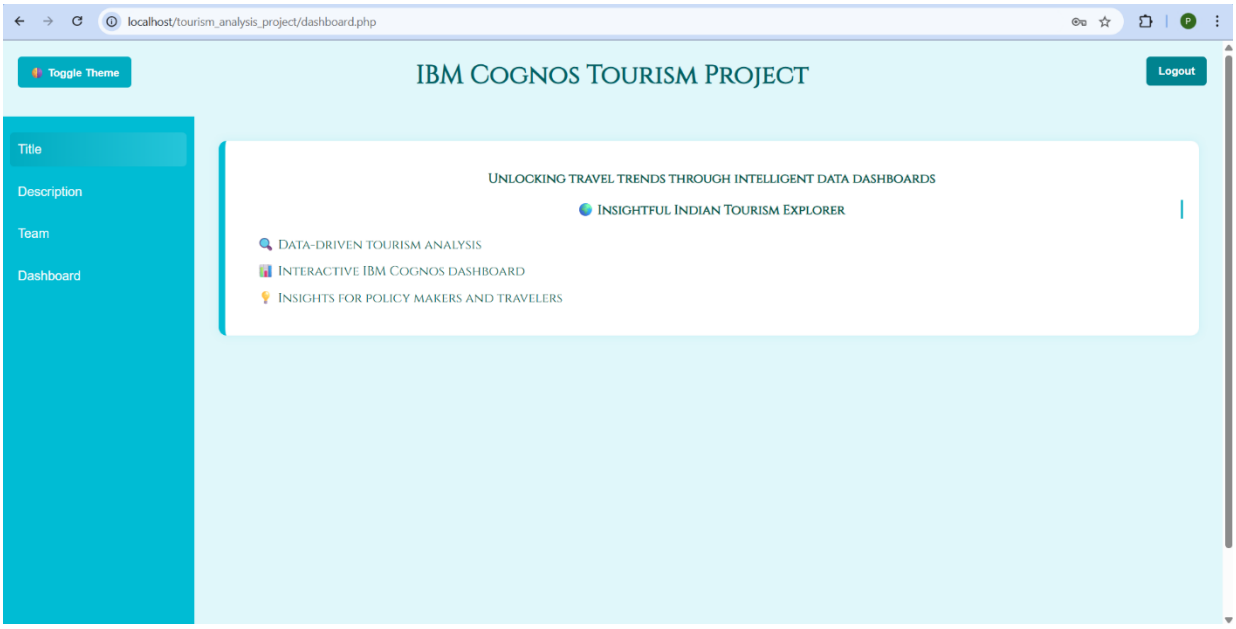
7. Screenshots of Dashboard:



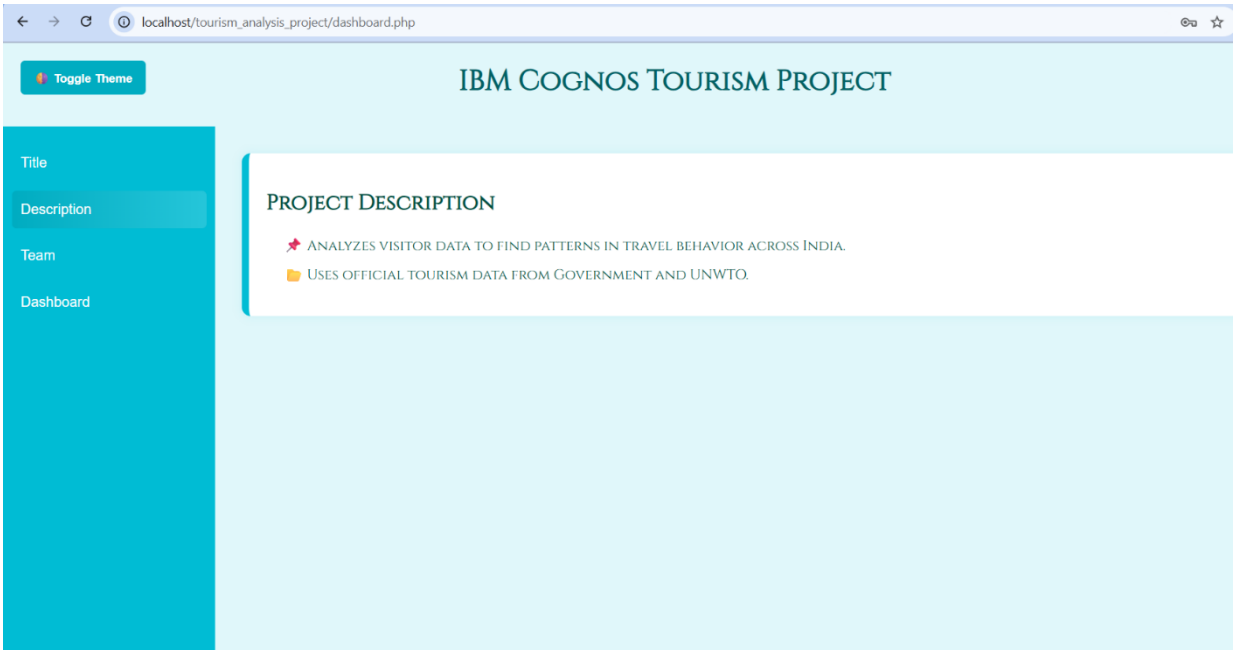
Register page



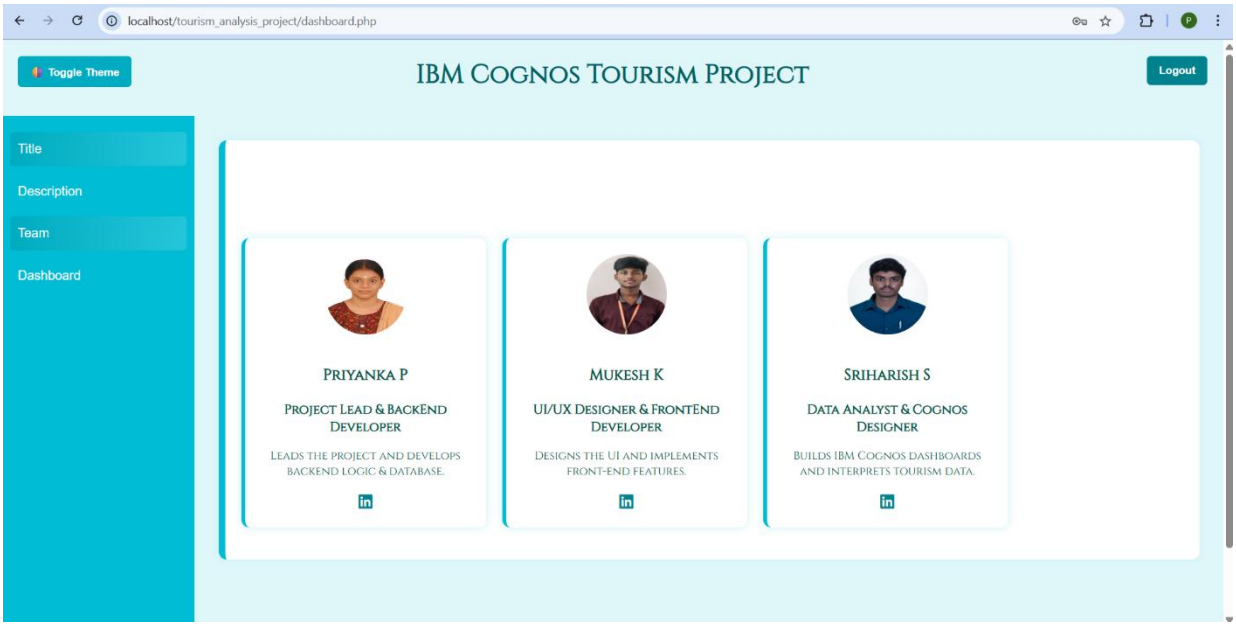
Login page



Project title tab



Project description tab



Team members tab

Zone specific analysis using IBM Cognos

Visitor Behavior analysis

Experience and satisfaction analysis

Financial recovery analysis

8. Conclusion

The Tourism Analysis Dashboard successfully provides a comprehensive platform for analyzing and visualizing tourism data. By leveraging advanced technologies like PHP, MySQL, and IBM Cognos the system enables users to explore valuable insights into visitor patterns, demographics, and seasonal trends. The dashboard offers a user-friendly interface with tab-based navigation, making it easy to access critical information such as project details, team roles, and the Cognos dashboard. This project highlights the power of data-driven strategies for improving tourism management and decision-making. Ultimately, the Tourism Analysis Dashboard empowers stakeholders with valuable insights, fostering sustainable tourism development and enhancing the user experience with a visually appealing design and seamless functionality.

9. References

- Ministry of Tourism, Government of India
  Official tourism statistics and reports
  Website: https://tourism.gov.in

- IBM Cognos Analytics Documentation
  For dashboard creation and BI insights
  Website: https://www.ibm.com/docs/en/cognos-analytics

- Kaggle – Indian Tourism Data
  For open datasets and travel trends
  Website: https://www.kaggle.com