COGNITIVE *i* IT SOLUTIONS INTERNSHIP

(COURSE CODE: 23UPCSC4I01)

A Report submitted to Periyar University, Salem.
In partial fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE
IN
DATA SCIENCE

BY

MADESH M
REG NO: U23PG507DTS018

DEPARTMENT OF COMPUTER SCIENCE

PERIYAR UNIVERSITY

PERIYAR PALKALAI NAGAR,
SALEM – 636011

Ms. R. Samya,
Teaching Assistant,
Department of Computer Science,
Periyar University,
Salem-11.

CERTIFICATE

This to certify that the report on **"INTERNSHIP ACTIVITY"** (23UPCSC4I01), provided by the **COGNITIVE *i* IT SOLUTION,** is a bonafide report done by **Mr. MADESH M** (Reg. No: U23PG507DTS018) as a partial fulfilment of the requirement of degree **Master of Science in Data Science** in the department of Computer Science, Periyar University, Salem, during the year 2023-2025.

Faculty In-charge Head of the Department

Submitted on ___/___/_____.

Internal Examiner

DECLARATION

I hereby, declare that Internship Activity entitled "**COGNITIVE *i* IT SOLUTION INTERNSHIP**" submitted to Periyar University in partial fulfilment of the requirement for the award of the Degree of Master of Science in Data Science is the record work carried out by me, under the supervision of **Ms. R. SAMYA, Teaching Assistant, Department of Computer Science, Periyar University**. To the best of my knowledge, the work reported here is not a part of any other work on the basis of which a degree or award was conferred on an earlier to one or any other candidate.

Place: Salem **Signature of Student**

Date:

ACKNOWLEDGMENT

First, I would like to thank the Almighty for providing me with everything I needed to complete this internship.

I would like to extend my sincere thanks to **Dr. R. Jagannathan**, Vice Chancellor of Periyar University, Salem, who has been an invaluable source of support by providing the facilities needed to successfully complete this Internship.

I am also grateful to **Dr. C. Chandrasekar**, Head of the Department, Department of Computer Science, Periyar University, Salem, for his encouragement and support throughout this work.

My heartfelt thanks go to my guide, **Ms. R. Samya**, Teaching Assistant, Department of Computer Science, Periyar University, Salem, for her motivation, valuable suggestions, and guidance throughout this dissertation. Her support has been crucial in successfully finishing this work.

I would like to express my sincere gratitude to **Mr. S. Saravanan**, HR Head, and **Ms. R. Barani**, Project Leader of Cognitive *i* IT Solutions, for their valuable support, guidance, and encouragement throughout the course of this project.

Finally, I would like to thank my parents and friends for their constant support and encouragement.

Place: Salem Signature of the Student

Date:

COGNITIVE i IT SOLUTIONS (P) LTD

Innovative of software world

Date: 05-09-2024

TO WHOM IT MAY CONCERN

This is to certify that **Madesh M M.sc(DS) of Periyar University, Salem** has successfully completed the **DATA VISUALIZATION WITH TABLEAU** internship at **Cognitive I IT Solutions (P) Ltd, Salem** from **14-03-2024** to **20-07-24.**

During this period, she/he demonstrated a strong understanding of Tableau, contributing significantly to our projects.

She/he has shown excellent problem-solving skills, teamwork, and a strong work ethic. We believe that she/he will be a valuable asset to any organization in the field of TABLEAU. We wish her/him all the best in future endeavors.

Cognitive i IT Solutions (P) Ltd. Salem-16

AUTHORIZED SIGNATURE

Registration Office
110, Krishnan Pudhur, Ammapet, Salem,
Tamilnadu, India - 636003

Corporate Office
F37, First Floor, Murugan Kovil Street,
Fairlands, Salem, Tamilnadu , India - 636016

Contact
www.ciits.org I info@ciits.org
+91 97901 88544 & +91 73391 01971

COGNITIVE *i* IT SOLUTIONS (P) LTD
Innovative of software world

Gnanamani College Of Technology Campus, NH-7, A.K.Samuthiram, Pachal(PO), Rasipuram(TK),
Namakkal(DT), Tamil Nadu, India-637 018. www.ciits.org | admin@ciits.org

CERTIFICATE OF COMPLETION

This is to Certify MADESH M for the hands on course achievement On DATA VISUALIZATION WITH TABLEAU

with Excellent Perfomance at Cognitive *i* IT Solutions Pvt Ltd.

From 14-03-2024 To 20-07-2024

Dr. Jayaprakash Narayanan V
CEO / DIRECTOR

HR MANAGER

ABSTRACT

This is a report on the task and project underrating in the internship, provided by **Cognitive *i* IT Solution,** during the time span if 14-03-2024 to 20-07-2024. This internship mainly focused on analyzing different dataset using Tableau software.

This internship including task that enhances our creative thinking and improving our skills that are related to visualization datasets. The task included the topics such as:

- Calculation field.
- Parameters
- LOD (Level of Details).
- Dashboard preparation
- Story Board.
- Advanced Charts.

These are crucial parts of Tableau that are required to create attractive and meaningful visualization.

INDEX

INTRODUCTION

This report highlights my journey during the **Data Visualization with Tableau** internship at **Cognitive *i* IT Solutions (P) Ltd**, based in **Salem**. The internship aimed to equip me with practical experience in utilizing **Tableau** for analyzing and visually presenting data insights. My primary responsibilities included data cleaning, preparation, and creating interactive dashboards that supported effective business decision-making.

Throughout the internship, I was involved in various **real-world projects** that allowed me to apply the **theoretical knowledge** I had gained during my M.Sc. in Data Science. Notably, I contributed to **Sales Analysis**, **Customer Analysis**, **Product Sales**, **Movie Review Analysis**, and **Customer Segmentation** projects, where I used Tableau to develop dashboards that helped visualize key business metrics. These hands-on projects enhanced my skills in **data storytelling** and gave me valuable insights into understanding the business needs behind each project.

During the internship, I worked with various domains such as **customer product reviews**, **food reviews**, **movie reviews**, **customer behavior analysis**, and **stock price prediction**. Completing these task and projects gave me the confidence to move forward in my career and continue developing my skills to make meaningful contributions to any organization.

Additionally, I received training in **Python programming** and **Machine Learning (ML)** during the internship. This training helped me deepen my understanding of **ML algorithms**, **data preprocessing**, and **model deployment**, which further complemented my data visualization work by allowing me to integrate **predictive models** with visual analysis.

Moreover, this experience not only sharpened my Tableau expertise but also enhanced my **problem-solving**, **communication**, and **teamwork** skills. Collaborating with colleagues in a supportive environment, I had the opportunity to present insights to both technical and non-technical stakeholders, strengthening my ability to convey complex data concepts clearly.

OBJECTIVES

During my internship at my college to join with the Cognitive *i* IT Solution (p) LTD company, I aim to master the use the Tableau for data analysis and visualization. I plane to develop proficiency in creating interactive a dashboards and visualization that effectively communicate data insights, while also exploring advances Tableau features such as calculated fields, parameters, level of details (LOD) and data blending to enhance my reporting capabilities. Additionally, I intend to apply the theoretical concepts learned in my studies to analysis real datasets and derive meaningful conclusions. By engaging on hands-on projects, I hope to bridge the gap between academic knowledge and practical application, gaining invaluable experience in real-world data challenges.

Furthermore, I will contribute to the organization's ongoing data visualization projects by collaborating team members on current initiatives. This involves providing support in data preparation, analysis, and visualization design, as well as gathering feedback from stockholders to ensure that our visualization meet user needs and improve overall project outcomes. To enhance my problem-solving, teamwork, and communication skills. I will actively participate in team meeting and collaborative sessions to discuss project goals, challenges, and solutions. Through these interactions o will practice effective communication techniques to present my finding and insight clearly and persuasively to both technical and non-technical audiences, ensuring that I make a meaningful contribute to the team.

COGNITIVE *i* IT SOLUTIONS (P) LTD

Company Overview:

Company Name: Cognitive *i* IT Solution (P) Ltd, Salem, Tamil Nadu.
Established: 2019
Company Type: Autonomous and Non-Profit Research center.
Legal Status: Established under Section 8 of Act No. 18 of 2022, MCA, and MSME Approved, Government io India.

Cognitive *i* IT Solutions (P) LTD is a leading start-up company and highly innovative software world, robotics integrator and technologies provider, established to provide leading edge intelligent technical solutions and consulting services to research software businesses, organizations and government in order to allow the efficient and effective secure access and communication with various heterogeneous information resources and services, anytime, and anywhere.

Company Mission and Visions:

Mission:

To deliver robust, extensible, and customizable security-enhanced solutions for information sharing, data exchange, service invocation, and communication.

Vision:

To enable "Secure IT Access Service, Research Analysis, and Development Anytime, anywhere."

Services Offered:

Research Development Service (RDS):

Support proposal development in multidisciplinary funding opportunities, assisting with idea development, proposal planning, and project management throughout the process.

Software Development Services:

Outsourcing options for the software technology, engineering models, and support to produce maintainable, secure, and impactful software products. We have successfully completed over 2,300 projects across various technologies.

Artificial Intelligence & Analytics Services:

Mering human intelligence with machine capabilities, automation, and business analytics with data science to transform visions into performance through AI analysis development services, solution, and capabilities.

Digital Marketing:

Comprehensive marking services designed to enhance digital performance and optimize journeys using effective strategies

Contact Details:

- Mobile: +91 9994187525
- Email:
  - admin@ciits.org
  - cognitiveiitsolutions@gmail.com
- Location:
- 210, 2nd Floor, Shanmugam Complex,
  5-Road, Near Kalyan Jewellers,
  Salem, Tamil Nadu, India – 636004.

INTERNSHIP DUTIES AND RESPONSIBILITIES

During the internship, various task was completed related to student data analysis using Tableau. Key responsibilities included.

1. **Data Cleaning and Preparation:**
    - Raw student data was provided, containing performance metrices, attendance records, and demographic information.
    - The data needed to be cleaned by removing inconsistencies handing missing values, and formatting for analysis.
    - Excel and Tableau Prep were used to prepare the data for analysis.
2. **Data Analysis:**
    - After cleaning the data, trends in student performance, attendance patterns, and correlation between demographics and outcomes were analyses.,
    - Calculated fields were created in Tableau to generate additional insights.
3. **Dashboard Creation in Tableau:**
    - Interactive dashboards were developed to visualize key insights.
    - Dashboards included filters for grad level, subject, and other parameters, enabling a detailed explanation of a data.
    - Various visualizations, including bar charts, heatmaps, and line graphs, were used to display trends and performance data.
4. **Presentation of Finding:**
    - Finding and dashboards were presented to supervisors and team members.
    - Feedback was received in ways to improve the visualizations and make the dashboards more user-friendly.

WORK OVERVIEW

During my internship at Cognitive *i* IT Solution, I was actively involved in several task and projects. These activities allowed me to utilize and improve my skills in data visualization using Tableau. This experience provided me with practical insights into the importance of data-driven decision making in a professional environment.

Data Visualization with Tableau:

I engaged in several key task throughout my internship, focusing primarily on data visualization:

1. **Creating interactive Dashboards:**

   I worked on developing interactive dashboards and reports in Tableau, ensuring they were user-friendly and informative.

2. **Data Cleaning and Transformation:**

   I cleaned and transformed raw datasets, making them suitable for analysis and visualization by removing inconsistencies and outliers.

3. **Designing Visualization:**

   I designed data visualizations that effectively presented insights addressing key business question, ensuring clarity and relevance.

4. **Collaborating with Team members:**

   I collaborated closely with team members to understand client needs, customizing dashboards to meet specify requirements and enhance usability.

5. **Client Presentations:**

   I participated in presentations to clients showcasing the dashboards and explanation the insights derived from the data, which helped strengthen client relationships.

ACTIVITIES

The tasks and projects assigned by Cognitive *i* IT Solutions were approached using a research-driven methodology. The problem statements were addressed by creating comparison charts based on real-time datasets from specific periods, providing clear and actionable insights into the identified challenges.

RQ 1: What was the growth rate in the industrial sector before and after 2010?

RQ 2: Which item shows the highest sales in the food processing market analysis?

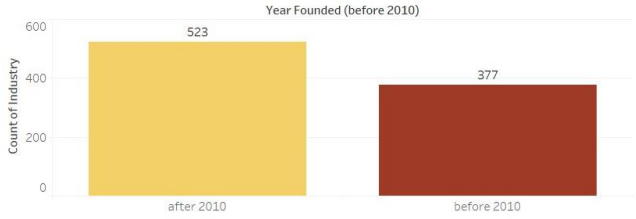
RQ 3: Which entertainment category is preferred by people who highly enjoy adventure trips?

RQ 4: Which country had the highest product sales between 2000 and 2014?

RQ 1: Problem statement

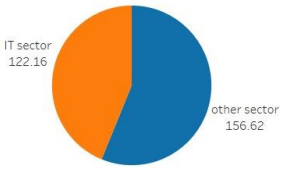
Analysing Stretton Hathaway 1.1 dataset and visualizing:

1.The Director wants to know how many companies were founded after 2010. Create a group on the companies founded after 2010 so that itiseasy for the director to see the exact value rather than calculating all the values.

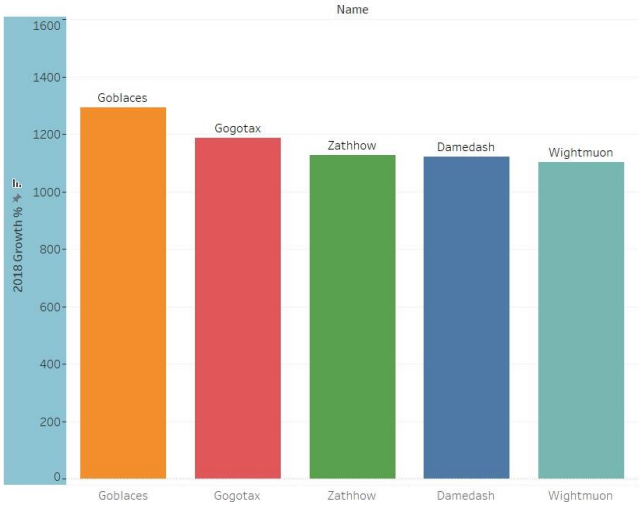


2. The Management also wants to know the average number of employees in the IT sector. Following are the industries that are considered as IT companies by the management: -

- •Computer Hardware
- •IT Services
- •Software
- •Telecommunications



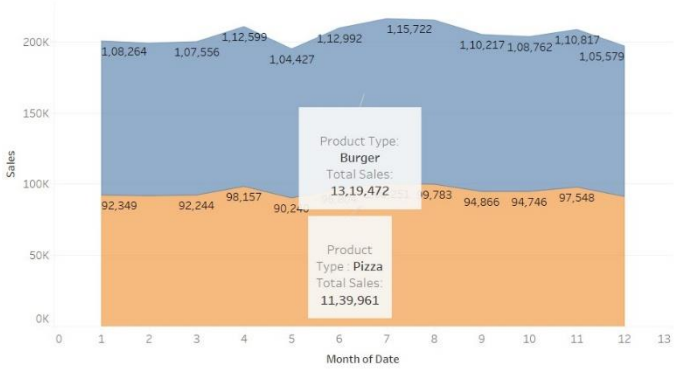
3. Create a Target Quadrant for the management based on Company Name, 2018 Expense, 2018 Revenue. The values of 2018 Expense and 2018 Revenue should be fixed at 10,000,000 and 18,000,000. The quadrant should also be able to Highlight the top 5 Companies based on the 2018 growth percentage as this gives insight to the management in selecting the companies to invest in.



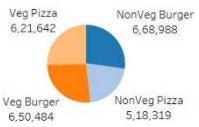
RQ 2: Problem statement

Analysing sales distribution of Pizza and Burger:

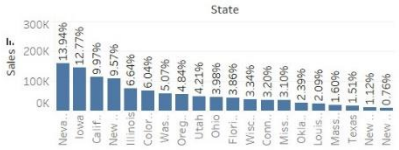
1. Sales trend across 2 product categories, Pizza and Burger. Build an Area Chart.



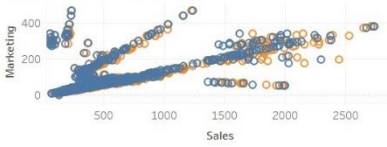
2. A Pie Chart and display Total Sales Distribution across product categories.



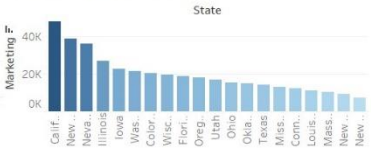
3. Sales distribution across product categories. Show a Chart by States which indicates the percentage of Pizza category sales across total sales.



6. A Scatter Plot and identify for correlation between Sales and Marketing Expenses, if any. Through Highlighting feature, identify for any changes within the years.



5. Identify the States, wherein the marketing campaigns are most effective and which of the marketing teams need to revise their tools? Show this on Vertical bar chart.

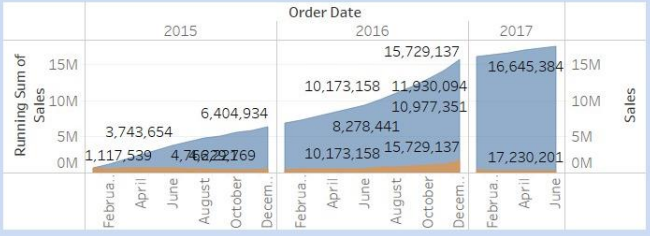


4. Sales distribution across product categories. Show a Chart by states which indicates the percentage of Burger category sales across total sales.

RQ 3: Problem statement

Analysing Adventure works dataset and visualizing:

1. Create a chart to visualize the Running Total of Sales over a period of time. Create an Area chart and compare the Running Total Sales with the Actual Sales.



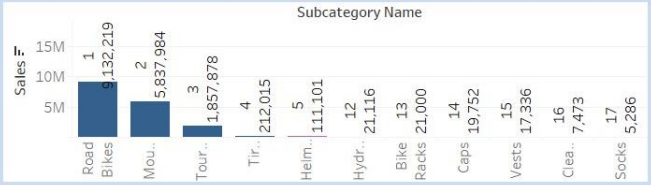
2. Create a Text table to show the percentage difference in Profit of each month in comparison with the previous year's month.

	Order Date		
Month of Or..	2015	2016	2017
January		-22.8%	-16.9%
February		-5.7%	-51.2%
March		-23.0%	-36.5%
April		-20.3%	-45.6%
May		-12.5%	-46.6%
June		-15.7%	-45.9%
July		72.4%	
August		52.5%	
September		181.7%	
October		152.5%	
November		248.7%	
December		183.4%	

3. Create a Text Table to show the Running Sum of Profit for every year individually.

Year of O..	
2015	2,601,602
2016	6,485,998
2017	7,223,361

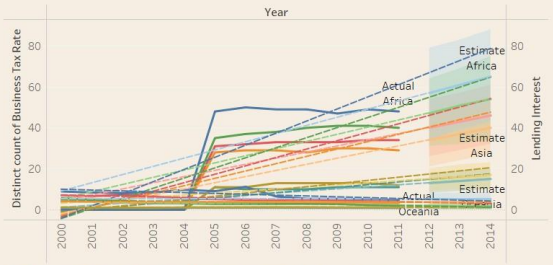
4. Using features like Rank, Last and Index create a chart to highlight the Top 5 and Bottom 5 sub-categories based on the sales



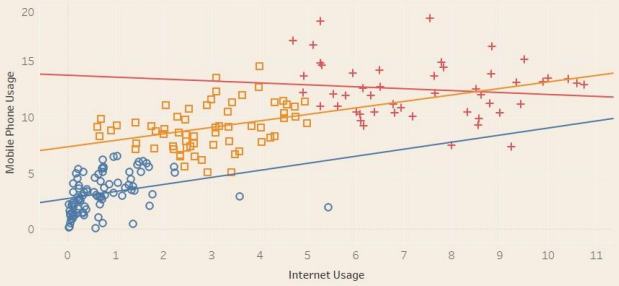
RQ 4: Problem statement

Analysing Retail Store dataset and visualizing:

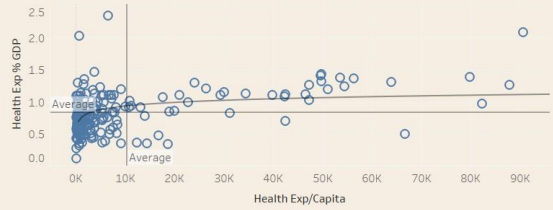
With the help of forecasting tool, forecast the Business Tax Rate for next 3 years with 90% accuracy and without ignoring any last value for each Region and the Company would like to see the Sum of Lending Interest for each year without changing the style of the report. Use the Line Chart.



The Company wants you to display the correlation between Internet Usage and Mobile Phone Usage based on Countries. Also, the company wants to section out the data into three different Clusters and save them.



Create a Scatter Plot with Health Exp/Capita, Health Exp % GDP and Country also add reference line displaying the Average value for each corresponding Axis. To further impress the company with yours kills, add a Logarithmic Trend Line.



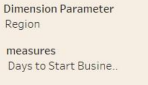
With the help of Parameters, create a chart where the user can either select one of the following Dimensions:

- Country
- Region

And either one of the following Measures:-

- Days to Start Business
- Internet Usage
- Infant Mortality Rate

The chart should also change depending upon the value.



ABSTRACT

During this internship project, I developed two distinct datasets for analysis:

1. Entertainment Industry Analysis
2. India Rainfall Analysis

The **Entertainment Industry Analysis** focuses on identifying trends in budget allocation, movie releases, and the correlation between ratings, providing insights to support strategic decision-making for a movie review company. This analysis helps uncover patterns that influence financial performance and audience reception in the entertainment sector.

The **India Rainfall Analysis** investigates long-term trends, seasonal variations, and state-wise distribution of rainfall. It also examines the impacts of climate change and detects extreme weather events, offering valuable insights into regional weather patterns and helping inform decisions related to agriculture, disaster preparedness, and climate adaptation.

Both analyses aim to provide actionable insights by utilizing data-driven approaches, supporting decision-makers with evidence-based findings.

Project:1

Entertainment Industry Analysis Report

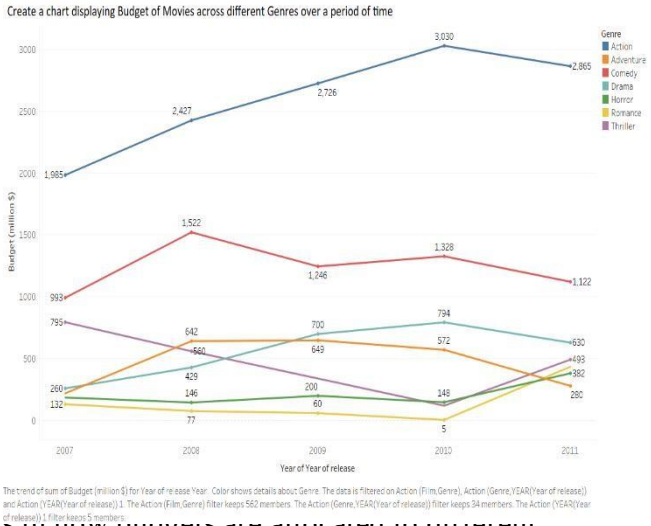
Objective:

This project provides an analysis of movie rating (by audience and critics), movie budgets, and the number is movies released under various genres from the years 2007 to 2011. The analysis aims to uncover trends in budgets allocation, movie releases, and rating correlation to support strategic decision-making for the movie revie company.

Insights:

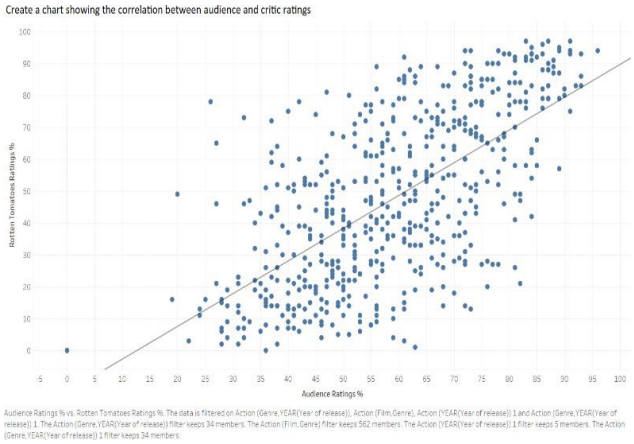
Budget of Movies across Different Genres Over a period of Time:

- **Action** movie had consistently high budget, peaking in 2010 at $2,736 million.
- **Comedy** and **Drama** genres showed moderate and stable budget allocations, with Drama peaking in 2009.
- **Horror** had the lowest budget across all years, indicating a clear difference in financial backing compared to other genres.



This analysis provides an understanding of the trends in how budgets are allocated to different genres, reflecting the industry's focus on action-packed blockbusters during this period.

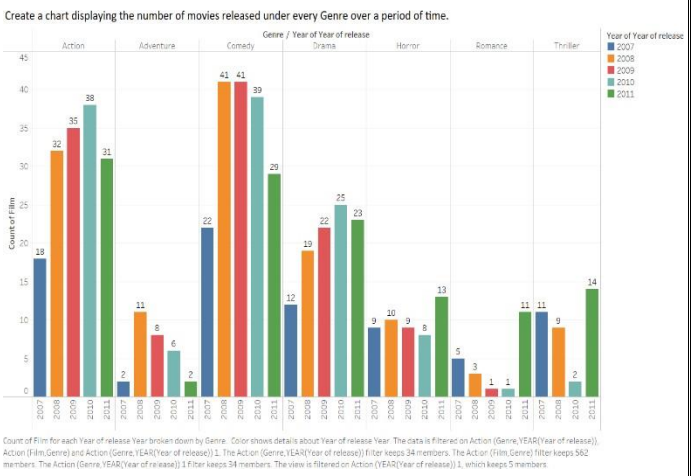
Correlation Between Audience and Critic Ratings:



1. There is a **positive correlation** between audience and critic ratings, as shown by the upward trend in a scatter plot.
2. This suggest that movies, well-received by critics tend to be liked by audiences as well though there are exceptions were divergence betweenthe two exists.

This analysis is crucial for understanding how audience preferences align with expert opinions, providing valuable insight for the movie review company.

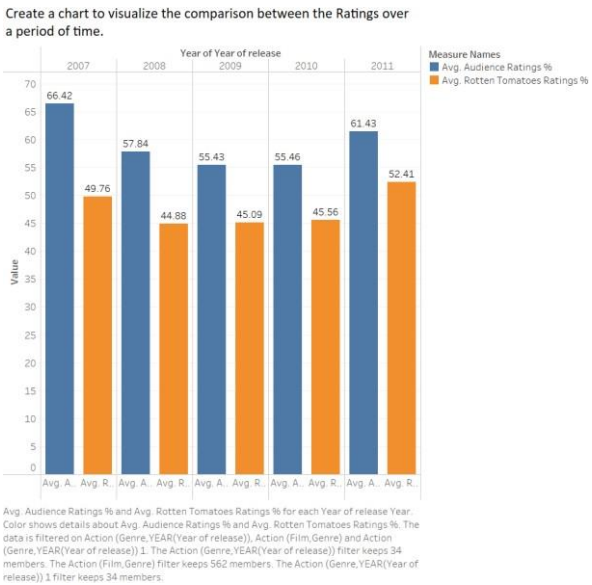
Number of Movies Released per Genre Over Time:



- The **Comedy** genre consistently saw the most releases, peaking in 2009 with **41 films**.
- **Comedy** also remained a popular genre with high number of releases each year.
- other genres, such as **Horror** and **Thriller**, saw sewer releases, with he later hitting its lowest in 2011.

This trend indicates that Drama and Comedy were dominant genres in terms of production volume during this time.

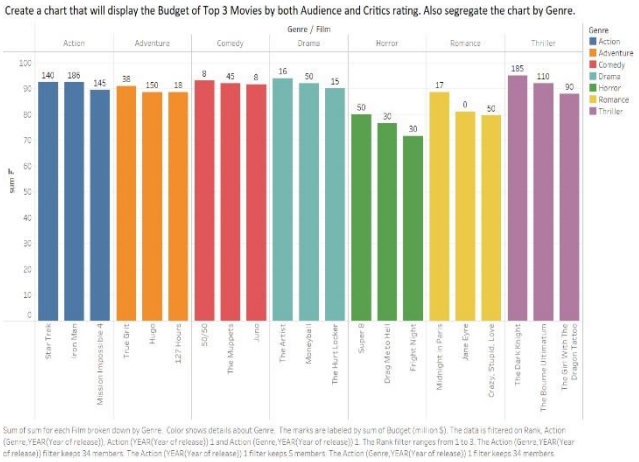
Comparison of Audience vs Critic Ratings Over Time:



- The chart shows that audience ratings tended to be **higher than critic ratings** in most years.
- 2010 saw a significant difference where audience ratings were much higher (**61.43%) compared to critic ratings (**45.56%).

This comparison highlights the differing perspectives between general viewers and professional critics over the years.

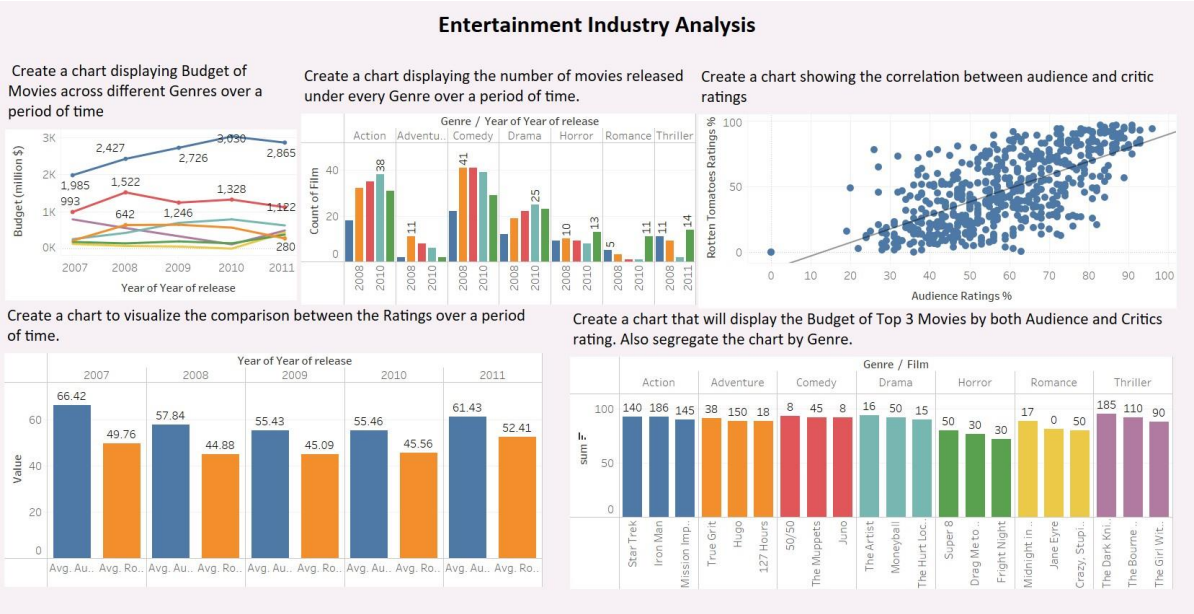
Budget of Top 3 Movies by Both Audience and Critic Ratings (Segregated by Genre):



- **Action** and **Adventure** movies such as *Star Trek* and *Mission Impossible* had the highest budgets.
- Genres like **Comedy** and **Drama** featured slightly lower-budget top-performing movies.
- **Thriller** movies like *The Girl With The Dragon Tattoo* had notable budget allocations, reflecting their significant production costs.

This analysis provides valuable insight into which genres are more likely to attract higher budgets for top-rated films.

Dashboard:



A dashboard was created that combines all the charts described above, giving a holistic view of the movie industry between 2007 and 2011. This dashboard allows stakeholders to quickly visualize and compare the trends in movie budgets, audience and critic ratings, as well as the number of releases across different genres.

Link:https://public.tableau.com/views/EntertainmentIndustryAnalysisProject/ProjectDashboard?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

The analysis reveals several key trends in the entertainment industry from 2007 to 2011:

1. **Action** and **Adventure** movies consistently commanded higher budgets.

2. **Drama** and **Comedy** were the most frequently produced genres.

3. Audience and critic ratings generally correlated, though audience ratings tended to behigher on average.

4. Top-rated movies, regardless of genre, often had substantial budgets.

Conclusion:

This combined analysis offers a detailed look into the entertainment industry's dynamics over a five-year period. The high budgets allocated to Action and Adventure films, the correlation between audience and critic ratings, and the dominance of Drama and Comedy in movie releases highlight key industry trends. The insights derived from this analysis can help the movie review company refine its strategic focus, aligning content with audience preferences and market tendencies.

Project: 2

INDIA RAINFALL ANALYSIS

Objective:

India, a country heavily reliant on agriculture, experiences diverse rainfall patterns across its vast geographical expanse. Understanding these patterns is crucial for effective water resource management, agricultural planning, and disaster preparedness. This analysis delves into the intricate details of India's rainfall, examining long-term trends, seasonal variations, state-wise distribution, climate change impacts, and the detection of extreme weather events.

Dataset: Indian States Monthly RainFall From 1901 to 2017

Dataset Explanation:

The following are present in the dataset.

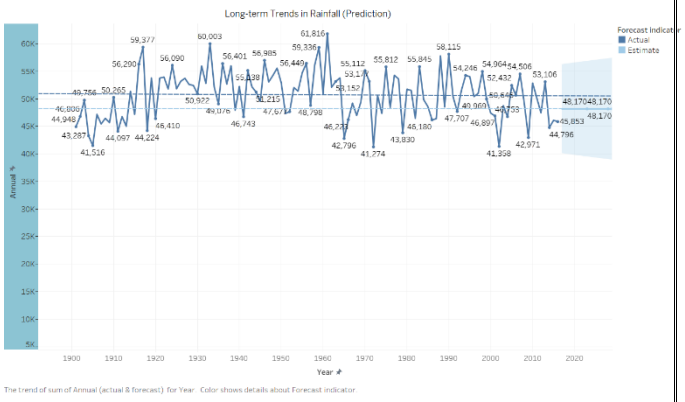
1. **States/UTs:** List of States and Union Territories of India.
2. **YEAR:** Year from 1907 to 2017 for each State/UT
3. **JAN-DEC:** Columns containing monthly rainfall data for each month spanning from January to December
4. **ANNUAL:** Contains the total rain for each state for each year

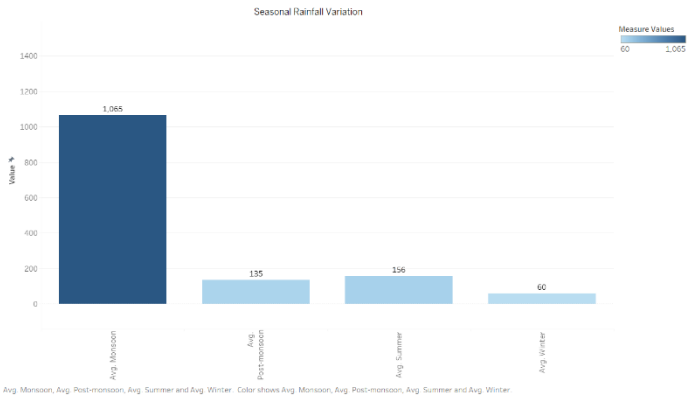
Tableau File Link: India Rain Analysis | Tableau Public

Insight:

Long-Term Trends:

- The analysis reveals a general upward trend in average annual rainfall, suggesting potential climate change impacts.
- However, regional variations exist, with some areas experiencing more significant increases than others.



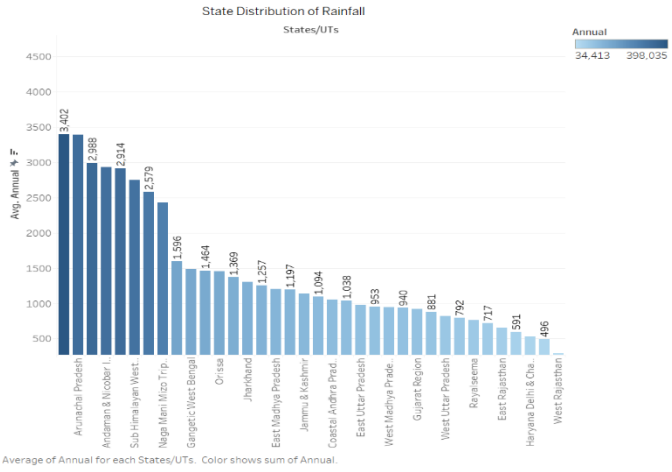


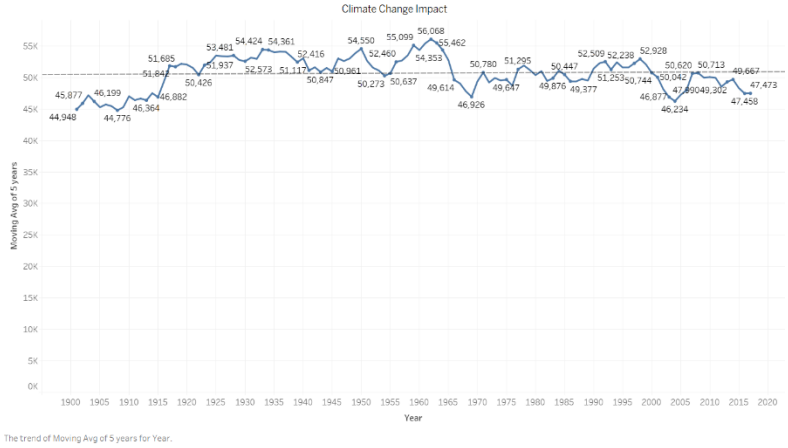
Seasonal Rainfall Variation:

- Monsoon season consistently receives the highest average rainfall, followed by winter and summer.
- Seasonal variability is significant, with some years experiencing extreme rainfall events or droughts.

State Distribution of Rainfall:

- Arunachal Pradesh receives the highest average annual rainfall, while Rajasthan receives the lowest.
- Regional disparities in rainfall are evident, with coastal areas generally receiving higher precipitation than inland regions.



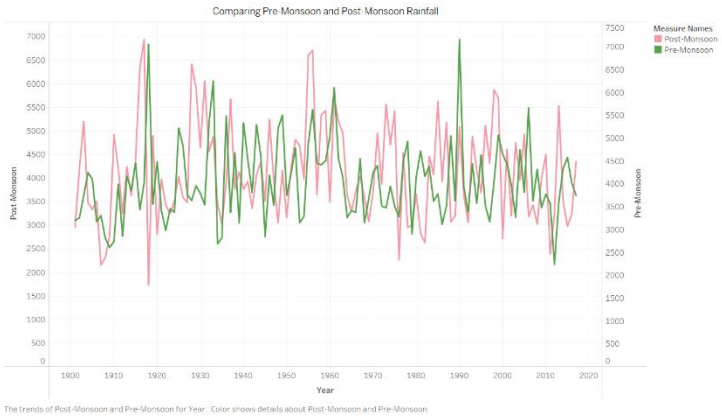


Climate Change Impact:

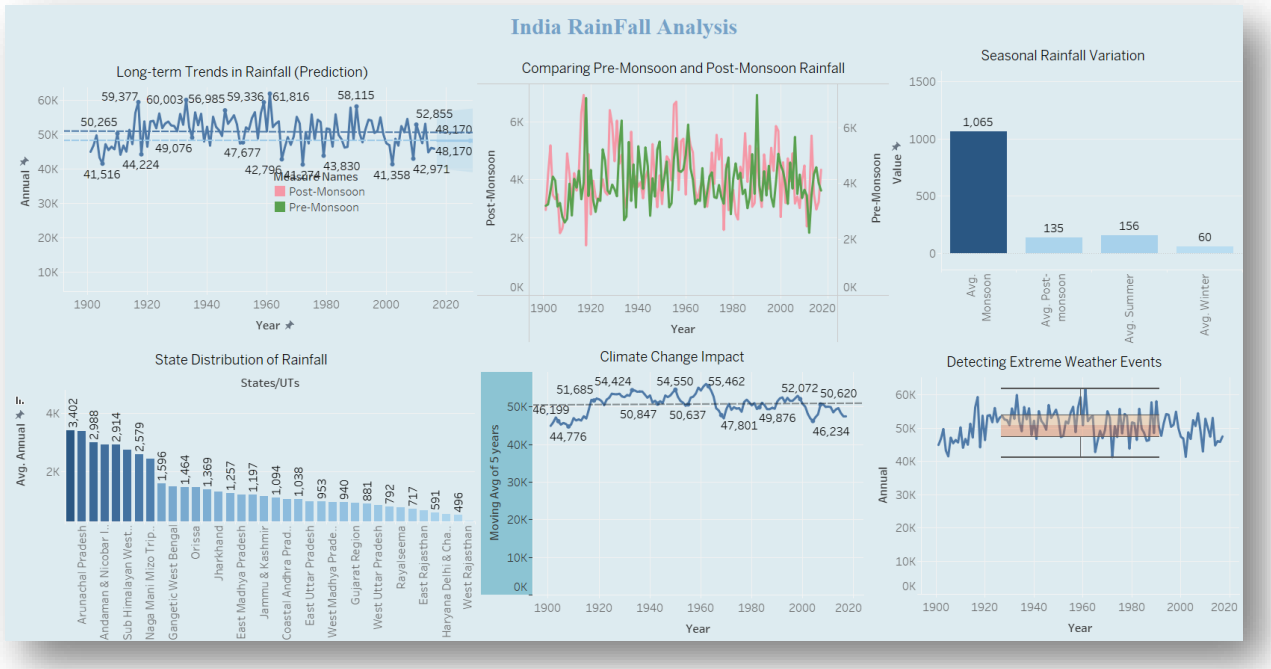
- The observed increase in average annual rainfall aligns with climate change projections.
- Further research is needed to definitively attribute the observed changes to climate change and to quantify its future impacts.

Detecting Extreme Weather Events:

- The analysis identifies years with extreme rainfall events, such as heavy rainfall or droughts.
- Understanding the frequency and intensity of these events is crucial for risk assessment and disaster preparedness.



Dashboard:



Overall, this analysis provides valuable insights into India's complex rainfall patterns and their implications for water resource management, agricultural planning, and climate change adaptation. It highlights the need for continued monitoring and research to better understand and address the challenges posed by rainfall variability and extreme weather events.

Link: [India Rain Analysis | Tableau Public]

Conclusion:

The India Rainfall Analysis provides a comprehensive assessment of rainfall patterns in India, encompassing long-term trends, seasonal variations, state-wise distribution, climate change impacts, and extreme weather events. The findings reveal a general upward trend in average annual rainfall, suggesting potential climate change influences. However, significant regional variations and seasonal fluctuations persist. Understanding these patterns is crucial for effective water resource management, agricultural planning, and disaster preparedness. By identifying areas vulnerable to extreme weather events and assessing the potential impacts of climate change, this analysis can inform policymakers and communities in developing strategies to mitigate risks and promote sustainable development.

SKILLS AND KNOWLEDGE ACQUIRED

Several valuable skills were developed during the internship:

1. **Technical skills:**
    - **Data Cleaning and Transformation:** Developed proficiency in using Excel andTableau Prep for data cleaning and transformation task.
    - **Tableau:** Gained in-depth knowledge of Tableau for building dashboards, creatingcalculated fields, and using filers effectively.
    - **Data Analysis:** Acquired skills in identifying key trends and correlations withinlargest datasets.
2. **Soft skills:**
    - **Problem-Solving:** Encountered various data challenges, such as missing values,and applied problem-solving techniques to address them.
    - **Communication:** Improved communication skills by presenting data-driveninsights to a non-audience.
    - **Time Management:** Successfully managed multiple task, such as data cleaning,analysis, and visualization, within the given time frame.

CHALLENGES FACED

1. **Data Inconsistencies:**
    - **Challenge:** The raw data contained several inconsistencies, such as missing values and duplicate records.
    - **Solution:** Used Tableau Prep to clean the dataset by addressing inconsistencies andformatting the data appropriately.
2. **Dashboard Performance:**
    - **Challenge:** The large dataset resulted in slow-loading dashboards.
    - **Solution:** Performance was optimized by using data extracts and simplifyingcomplex calculations in Tableau.
3. **Complex Datasets:**
    - Some datasets were large and unstructured requiring substantial cleaning and preprocessing.
4. **Understanding Client Needs:**
    - Translating client requirements into effective visualizations was challenging andrequired close collaboration with the project team.

Key Learning and Contributions

Key Learning:

- Hands-on experience was gained in cleaning, analyzing, and visualizing data.
- Advanced Tableau features, such as calculated fields and interactive filters, wereused to create effective visualizations.
- A deeper understanding was acquired of how data can be leveraged to improvedecision-making in educational data

Contributions:

- Interactive dashboards were created to analyze student performance and attendance.
- Insights were provided to help educational institutions identify trends and areas forimprovement.

CONCLUSION

My internship at Cognitive *i* IT Solutions (P) Ltd was an invaluable experience that not only enhanced my technical skills but also gave me practical insights into the importance of data-driven decision-making. The skills I developed, particularly in data visualization using Tableau, have been crucial in working with complex datasets and presenting clear, actionable insights.

Building on this experience, I plan to apply these skills to two key projects: **Entertainment Industry Analysis** and **Rainfall Analysis for India**. The Entertainment Industry Analysis will involve examining trends in movies and general categories, while the Rainfall Analysis project will focus on analyzing rainfall patterns across various Indian states, using historical data to identify trends and anomalies. Leveraging the techniques I learned during the internship such as data cleaning, visualization, and storytelling I aim to create interactive dashboards that provide valuable insights.

These visualizations will help decision-makers and researchers better understand regional rainfall trends, enabling informed decisions in agriculture, disaster management, and resource allocation.

This internship has given me the confidence and technical expertise to tackle such projects, blending my theoretical knowledge with practical experience to solve real-world challenges.