EMPOWERING THE FUTURE: A LITERACY RATE ANALYSIS FOR A BETTER FUTURE TOMORROW

NAAN MUDHALVAN

PROJECT REPORT

Submitted By

RITHISH KUMAR K (611220104116)

ROSHINI JK (611220104118)

SABARI V (611220104119)

SANGANIDHI S (611220104122)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

KNOWLEDGE INSTITUTE OF TECHNOLOGY,

SALEM-637504

ANNA UNIVERSITY::CHENNAI 600 025

EMPOWERING THE FUTURE: A LITERACY RATE ANALYSIS FOR A BETTER FUTURE TOMORROW

NAAN MUDHALVAN

PROJECT REPORT

Submitted By

RITHISH KUMAR K (611220104116)

ROSHINI JK (611220104118)

SABARI V (611220104119)

SANGANIDHI S (611220104122)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

KNOWLEDGE INSTITUTE OF TECHNOLOGY,

SALEM-637504

ANNA UNIVERSITY::CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report titled **"EMPOWERING THE FUTURE: A LITERACY RATE ANALYSIS FOR A BETTER FUTURE TOMORROW"** is the bonafide work of **"RITHSH KUMAR K (611220104116), ROSHINI JK(611220104118), SABARI(611220104119), SANGANIDHI S (611220104122)"** who carried out the project work under my supervision.

SIGNATURE	SIGNATURE
Dr. V. KUMAR M.E., Ph.D.,	Mr. J. MURUGESAN B.E., M.E.,
HEAD OF THE DEPARTMENT	FACULTY MENTOR
PROFESSOR	ASSISTANT PROFESSOR
DEPARTMENT OF COMPUTER	DEPARTMENT OF INFORMATION
SCIENCE AND ENGINEERING	TECHNOLOGY
KNOWLEDGE INSTITUTE OF TECHNOLOGY	KNOWLEDGE INSTITUTE OF TECHNOLOGY
KAKAPALAYAM	KAKAPALAYAM
SALEM - 637504	SALEM- 637504

SPOC

HEAD OF THE DEPARTMENT

ACKNOWLEDGEMENT

At the outset, we express our heartfelt gratitude to **GOD,** who has been our strength to bring this project to light.

At this pleasing moment of having successfully completed our project, we wish to convey our sincere thanks and gratitude to our beloved president

Mr. C. BALAKRISHNAN, who has provided all the facilities to us.

We would like to convey our sincere thanks to our beloved Principal

Dr. PSS. SRINIVASAN, for forwarding us to do our project and offering adequate duration in completing our project.

We express our sincere thanks to our Head of the Department **Dr. V. KUMAR,** Department of Computer Science and Engineering for fostering the excellent academic climate in the department.

With deep sense of gratitude, we extend our earnest and sincere thanks to our SPOC **Mr. T. KARTHIKEYAN,** Assistant Professor, Department of Computer Science and Engineering for his guidance and encouragement during this project.

We express our pronounced sense of thanks with deepest respect and gratitude to our project guide **Mr. J. MURUGESAN**, Assistant Professor, Departmentof Information Technology for her valuable and precious guidance andfor having amicable relation.

We would also like express our thanks to all the faculty members of our department, friends and students who helped us directly and indirectly in all aspects of the project work to get completed successfully.

TABLE OF CONTENTS

ABSTRACT

ABSTRACT

The literacy rate in India in 2022 is examined in this research. An important factor in determining a country's degree of development is literacy. An individual's ability to communicate through reading and writing is referred to as literacy. Any population's literacy rate calculates the proportion of people over a given age who are literate. The percentage of adults over the age of fifteen who are literate is known as the literacy rate. Some emerging nations are attempting to raise the literacy rate, including Bangladesh, Nepal, Laos, and India. In the past ten years, India's literacy rate has increased significantly. India still has lower levels of literacy than many other nations, though.

A high literacy rate (or low illiteracy rate) indicates the presence of a primary education system and/or literacy programs that have made it possible for a significant portion of the population to learn how to use the written word (and perform basic arithmetic calculations) in daily life and to continue learning. A literate person is a valuable asset to the prosperity of a country. To ensure that people have the complex communication and critical thinking abilities required to succeed in the workplace and a global economy because a high literacy rate is crucial.

LIST OF FIGURES

LIST OF ABBREVIATIONS

ABBREVIATIONS	EXPANSIONS
UT	Union Territory
CSV	Comma Separated Values
API	Application Programming Interface
SOAP	Simple Object Access Protocol
WSDL	Web Services Description Language
XML	Extensive Markup Language
HTML	Hypertext Markup Language
CSS	Cascading Style Sheet

INTRODUCTION

CHAPTER -1

INTRODUCTION

1.1 PROJECT OVERVIEW

Data analytics is a method of applying quantitative and qualitative techniques to analyze data, aiming for valuable insights. With the help of data analytics, we can explore data (exploratory data analysis) and we can even draw conclusions about our data (confirmatory data analysis). In this project, we will fetch the dataset from the external API. The extracted dataset is checked for null values. Using the IBM Cognos Analytics tool data pre-processing process is done and a cleaned data module is created. Using a cleaned data module data exploration is carried out. Using those exploration ideas dashboards, reports, and stories are created. Finally, the dashboard, report, and story are linked to the webpage.

1.2 PURPOSE

The literacy rate in India in 2022 is examined in this research. An important factor in determining a country's degree of development is literacy. An individual's ability to communicate through reading and writing is referred to as literacy. Any population's literacy rate calculates the proportion of people over a given age literate people over given ages over the age of fifteen who are literate is known as the literacy rate. Some emerging nations are attempting to raise the lite, including Bangladesh, Nepal, Laos, and India, are attempting to raise the literacy rate has increased significantly. India still has lower levels of literacy than many other nations, though. The literacy rate is 77.70%, with literate males at 84.70% and literate

LITERATURE SURVEY

CHAPTER-2

LITERATURE SURVEY

2.1 Literacy Rate Analysis Dashboard [Kavita Sheoron ,2019]

Kavita Sheoron presented a paper on INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 8, ISSUE 08, AUGUST 2019, in which she states that Literacy is characterized as the capability to read and compose a basic message in any language. A more expansive translation is literacy as apprehension and competence in a specific area. The key to literacy is a fundamental comprehension of composed content, the capacity to comprehend someone else talking, and comprehension and the ability to write. Reading and writing are foundation skills. Not solely are they needed for additional study, but they're conjointly crucial in helping us to know and interact with the world around us. Literacy in India is marked by an excellent amount of regional variation from one halfto another. The regional differences in literacy levels within the nation have resulted from the regional diversity in various cultural, economic, and social factors besides a marked distinction within the historical expertise of various regions. India's illiteracy is a prime concern that has numerous factors connected to it. Illiteracy in India is majorly involved with completely different sorts of disparities that exist within the country.There are gender disparity, income variance, state variation, caste disproportion, and technological hurdles which form the literacy rates that exist within the country.

So, the study and analysis of literacy data of India is needed to supply a timely and sophisticated basis for serving to planning and management of education services and to ascertain or contribute to an education system for assortment, organization and utilization of education data.

2.2 Literacy Rate In India In 2022[Khritish Swargiary, Kavita Roy, 2022]

Khritish Swargiary and Kavita Roy presented a paper on ACADEMICIA: An International Multidisciplinary Research Journal ISSN: 2249-7137Vol. 12, Issue 08, August 2022 in which they state that A high literacy rate(or low illiteracy rate) indicates the presence of a primary education system and/or literacy programs that have made it possible for a significant portion of the population to learn how to use the written word (and perform basic arithmetic calculations) in daily life and to continue learning. A literate person is a valuable asset to the prosperity of a country. To ensure that people have the complex communication and critical thinking abilities required to succeed in the workplace and a global economy, a high literacy rate is crucial. Over the past 40 years, India's literacy rate has substantially increased. The National Survey of India's report estimates that India's literacy rate would be 77.7% in 2022. 73% of people in 2011 were literate. 4% more people now live there than according to the most recent census. Although that is quite impressive in comparison to other emerging nations, it still means that almost one in four Indians cannot read or write (compared to about one in eight people worldwide). India's most literate state is Kerala. Kerala has a literacy rate of 96.2%. India will achieve universal literacy, according to UNESCO, in 2060

2.3 Literacy Rate at Primary Level: Identification of Causes and Impacts[Mariam Javed, Dr. Qaisar Abbas et al ,2021]

Mariam Javed, Dr. Qaisar Abbas and Dr. Shafqat Husssain presented a paper on Pakistan Social Sciences Review April-June 2021, Vol. 5, No. 2 [492-506] in which they state that Illiteracy greatly hinders the economic and social progress of a person and a country. Education allows one to seek and pursue opportunities. People who have been to school or have a good education have the skill and intelligence to make good investment decisions and advance a country's growth agenda. Hence, illiteracy hinders the development of the country (Saqib& Ahmad, 2014). Literacy is an integral part of our lives. The results of low literacy are far-reaching and affect all areas of our daily lives. As people's needs change, so do the waysilliteracy affects people. Here's a sample of how low literacy affects us as individuals and as a community (Qureshi, 2013). Literacy affects income, employment, and financial wellbeing (Chaudhry et al., 2006). A variety ofliteracy skills are intertwined with basic and complex financial and decision-making tasks. Financial literacy requires the ability to use multiple kinds of literature at the same time: prose, documents, and numbers. For many, lack of literacy and lack of financial literacy makes itdifficult for them and their families to lead better lives (Hussain & Salfi, 2011). Most teachers saw themselves as responsible for dropping out of school due to corporal punishment and inattention to students. Given that literacy is an indispensable tool for individuals and states to compete in thenew global knowledge economy, many positions are vacant due to a lack of properly trained staff to maintain them; Without the basic tools necessary to achieve the objectives, people who are not sufficiently literatecannot participate fully and equally in social and political discourse

(Din e tal., 2011). Moreover, the investigation of Kim et al., (2014)revealed that low literacy is a serious health and safety problem at home and in the workplace. From reading the dosage instructions on a medicinebottle to interpreting plans and instructions, understanding the signs and warnings of hazardous substances, to maps and diagrams that follow the list. When there is a need for literacy in written language, numbers or diagrams, and symbols, adults with literacy problems are at risk; these riskscan be life-threatening. Now it seems imperative to look into the context of illiteracy and its impact on the community.

2.4 Analysis And Forecast Of Literacy Rates In India[Vaidehi Nimje, Aboli Kulkarni Et Al, 1996]

Vaidehi Nimje, Aboli Kulkarni, and Prajakta Kulkarni presented a paper on JETIR December 2018, Volume 5, Issue 12 in which they state that In this research paper, the principle feature for forecasting literacy is considered to be the Population of a region. Hence, the projection of future population trends is carried out first and then a predictive algorithm is used to forecast the literacy rate. The total population, male population and female population of the state of Chhattisgarh is projected using a statistical method called logistic curve method. This method is used when the growth rate of the population due to births, deaths and migrations happen under normal situations and it is not subjected to any extraordinary changes like natural disasters, war or epidemic, etc. The growth curve characteristics of living things in limited space and economic opportunity is followed by population. The curve obtained when the population of a region is plotted with respect to time, under normal conditions looks like an S-shaped curve that is known as a logistic curve. From these projected populations, literacy

rate is forecasted using a data mining method of multiple regressions for the state. The multiple linear regression is used to explain the relationship between one dependent variable which is continuous and two or more independent variables. Here, literacy rate is the dependent variable which is predicted using multiple regression upon the independent variable- male population and female population which are obtained from projections.

2.5 Research Hot Spots of Teachers' Information Literacy and Visualization Analysis of Theme Evolution in China[Li Yang, Mengnan Zhu et al,2020]

Li Yang, Mengnan Zhu, and Yaojun Zhang presented a paper on 2020 International Symposium on Advances in Informatics, Electronics and Education (ISAIEE) in which they state that In the new media age in which the big data, AI and other digital media are highly developed, the problems such as information explosion, unfair distribution of information have come up. Teachers and students lose their subjectivity when facing so much information because of a lack of critical thinking. With the popularity of online-teaching after the epidemic, information literacy has become more and more prominent in daily teaching. The present researches on information literacy emphasize on the co-word analysis and visual presentation, but lack systematic and overall analysis on literature quantity, hot spots and evolving paths. Thus, this paper undergoes visualization analysis with the help of such spectrum software tools as UCINET, Gephi, VOSviewer and Pajek. The high-frequency keywords are found out through building the keyword matrix, and high-frequency keywords co-occurrence knowledge map and social network structure map will be drawn so that the research hot spots and characteristics of teachers' information literacy in China can be analyzed.

IDEATION & PROPOSED SOLUTION

CHAPTER-3
IDEATION & PROPOSED SOLUTION

3.1 PROBLEM STATEMENT DEFINITION

Problem Statement (PS)	**I am (Customer)**	**I'm trying to**	**But**	**Because**	**Which makes me feel**
PS-1	a content writer	publish an article on the country's literacy rate	the data is insufficient	A lot of regional surveys are left un calculated	frustrated
PS-2	an education -alist	analyze the reasons behind the downfall of literacy	the data available is inaccurate	the existing data is in appropriate to evaluate.	confused
PS-3	an educational officer	update the literacy rate	it takes a long time to respond	the server's current version is not enough to handle more data	Dis-appointed

3.2 EMPATHY MAP CANVAS

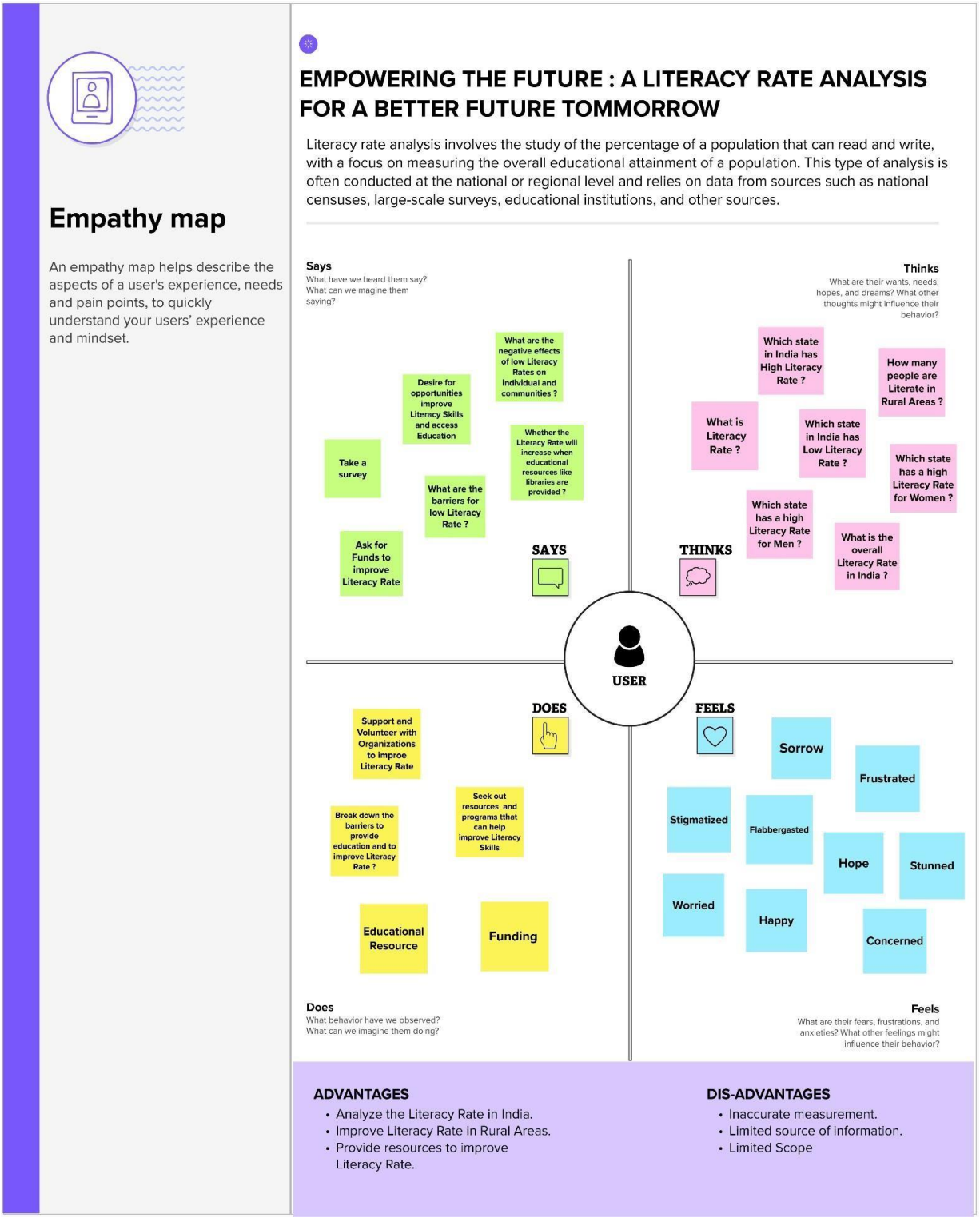


Fig- 3.2.1 Empathy map canvas

3.3 IDEATION & BRAINSTORMING

Fig- 3.3.1 Ideation & Brainstorming

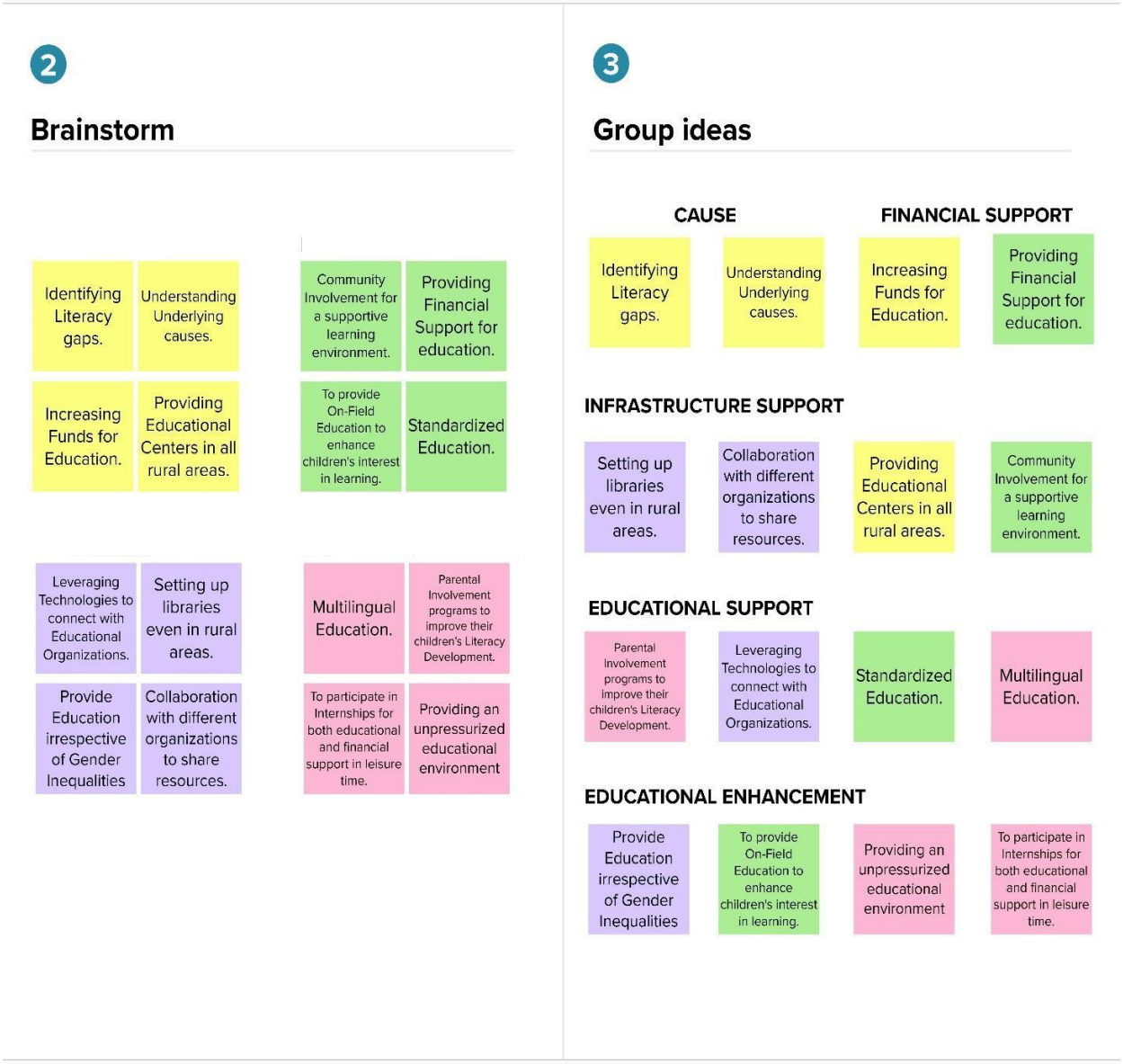


Fig-3.3.2 Ideation & Brainstorming

Fig-3.3.3 Ideation & Brainstorming

3.4 PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Literacy rate analysis involves the study of the percentage of a population that can read and write, with a focus on measuring the overall educational attainment of a population. This type of analysis is often conducted at the national or regional level and relies on data from sources such as national censuses, large-scale surveys, educational institutions, and other sources. The results of literacy rate analysis can be used to inform policy and decision-making at the national and local level, and to guide efforts to improve education and literacy in a given population. This type of analysis is important for understanding the current state of education and literacy in a given area, and for identifying areas where improvements are needed.

2.	Idea / Solution description	This project deals with the analysis of Literacy Rates in different states of India based on 680 factors. We are focusing on finding the top five factors and the least five factors that influence the literacy rate of a given state. Also, we predicted the literacy rate based on features and compared them with the available literacy rates and it was found to be accurate up to 93%. In our effort, we have tried to predict the Literacy Rates of each state using a reduced set of features.
3.	Novelty / Uniqueness	Currently the data available is inadequate and inaccurate to take any necessary decision to cover the literacy rate. By implementing our project, one may be able to know about the literacy rate from various regions without facing any troubles.

4.	Social Impact / Customer Satisfaction	For the content writing people, our project will be very useful to publish their articles with accurate data. People who are at the side of education(educationalists) will be able to analyze the ups and downs of the literacy rate and they may be able to know the reasons behind the downfall. Government Officers may work freely without any tension from data in-appropriation.
5.	Business Model (Revenue Model)	Educational officers and ministers need an accurate literacy rate. By using our development model, it will be very easy for them to pass new laws and take important decisions on the literacy rate of the nation.
6.	Scalability of the Solution	The scalability of our project is very huge, especially covering the people on the education and human welfare development side.

REQUIREMENT ANALYSIS

CHAPTER-4

REQUIREMENT ANALYSIS

4.1 Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	**Dataset**	Dashboard uses dataset from Cognos Cloud.
FR-2	**Analysis**	Data is pre-processed and cleaned. After cleaning the exploration process is carried out
FR-3	**Visualization**	Visualization of the prediction is shown in the dashboard created using IBM Cognos Analytics

4.2 Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Dashboards are created in order to display the length of stay analysis in a visual manner. So, the analyzed can be easily understood.
NFR-2	**Security**	All the datasets used and visualized in the dashboard cannot be downloaded or accessed by external sources.
NFR-3	**Reliability**	The dashboard created after the analysis process will be more reliable and shows the result clearly and effectively.
NFR-4	**Performance**	The analysis has more accuracy.
NFR-5	**Availability**	analyzed data will be available for some time after the analyzation
NFR-6	**Scalability**	This system will analyze the length of stay of all kinds of users.

PROJECT DESIGN

CHAPTER-5

PROJECT DESIGN

5.1 DATA FLOW DIAGRAM

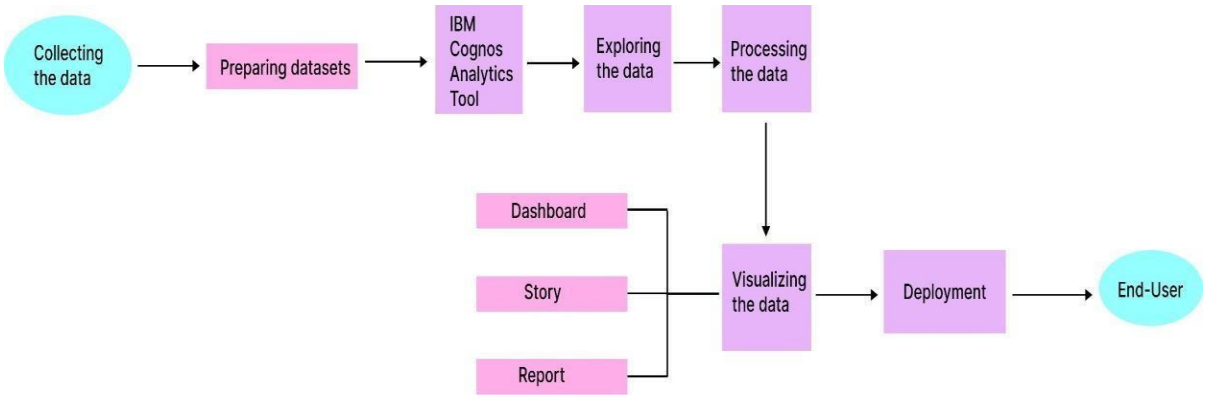


Fig 5.1.1 Data Flow Diagram

5.2 SOLUTION & TECHNICAL ARCHITECTURE

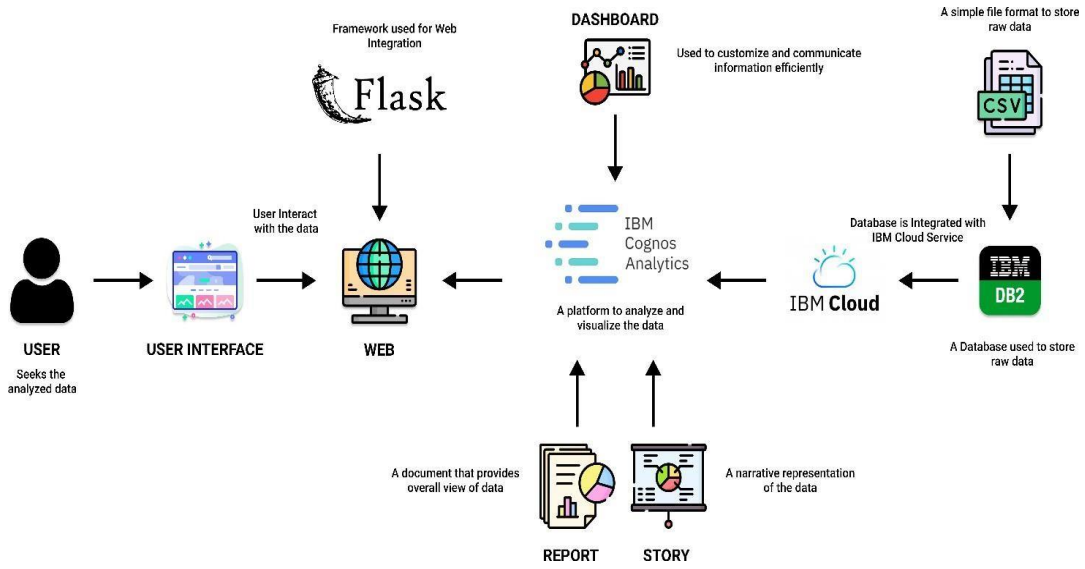


Fig 5.2.1 Solution Architecture

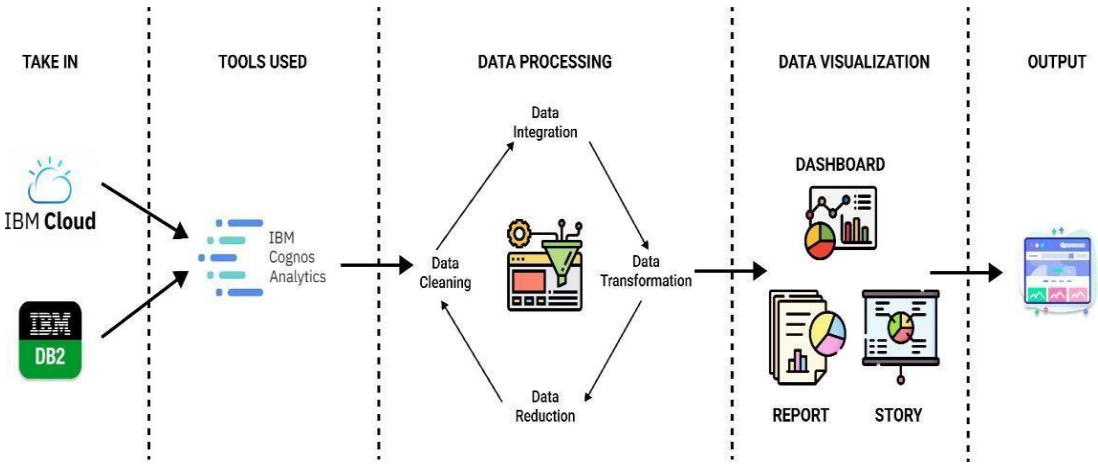


Fig-5.2.2 Technical Architecture

Table-1: Components & Technologies

S. No	Component	Description	Technology
1.	User Interface	The user can access the Dashboard using a web application	IBM Cognos Analytics, HTML, CSS.
2.	Data Processing	The data from the dataset is pre-processed	Java / Python
3.	Cloud Database	Database Service on Cloud	IBM DB2
4.	Data visualization	The data is visualized in different forms	IBM Cognos Analytics
5.	Web Integration	An API used for web integration	Flask

Table-2: Application Characteristics

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source frameworks used	IBM Cognos Analytics
2.	Security Implementations	Request authentication using Encryptions	Encryptions.
3.	Scalable Architecture	Scalability consists of 2-tiers	Dashboard – IBM Cognos Analytics Database Server – IBM Cloud
4.	Availability	The application is available for cloud users	IBM Cloud Hosting
5.	Performance	The user views data visualization of the data	IBM Cognos Analytics

5.3 USER STORIES

User Type	Functional Require-ment (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Team Member
Customer	Dashboard	USN-1	As a user, I can preview the datasets uploaded to the dashboard	I can explore the raw data	Medium	Roshini JK
	Dashboard	USN-2	As a user, I can be able to view the visualizations that can be done in the dashboard	I can access various operations on the dashboard	Medium	Rithish Kumar K
	View	USN-3	As a user, I can view the literacy details	I can view the visual data and the result of the summary	Medium	Sanganidhi S

Admin	Prepare	USN-5	As an admin, I will prepare the error-free dataset	I can be able to provide an accurate dataset	High	Sabari V
	Analyze	USN-5	As an admin, I will analyze the given dataset	I can analyze the dataset	High	Sanganidhi S

CODING &SOLUTIONING

CHAPTER – 6

CODING & SOLUTIONING

6.1 Feature 1

It is a hectic process to find accurate data for regional literacy data specifically. But we are provided with a dataset that almost solves the data insufficiency problem. At first, we upload the dataset to IBM Cognos Analytics and create a comparison using an exploration tool to frame with different visualizations. Using those Visualizations, we can analyze the literacy rate among men, women, children, men with schooling, and women with schooling. In IBM Cognos Analytics, the cleaning of data is also easy because it has built-in options for processing the data.

6.2 Feature 2

It is easy for an analyst to analyze the data of a specific region manually. But when data from multiple regions of states are combined together it becomes difficult foran analyst to analyze the data. IBM Cognos tool makes the analyzing process easy when the dataset holds data from multiple regions of states. We can easily create visualizations that can be easily understood by the users.

RESULTS

CHAPTER – 7

RESULTS

7.1 PERFORMANCE METRICS

The column chart visualization was created for Men, Women, and Children. Then we created visualizations that summarize Men, Women, and Children by Urban and Rural areas. Also, we created columns that visualize men with schooling (Ages 15-49) and women with schooling(Ages 15-49). Therefore IBM Cognos Analytics creates visualizations that give an accurate count or percentage of the data.

ADVANTAGES & DIADVANTAGES

CHAPTER – 8

ADVANTAGES & DISADVANTAGES

8.1 ADVANTAGES

- Lower costs—reduces maintenance due to complete report coverage and azero-footprint environment.
- Faster results—shorten reporting time due to seamless integration andadaptive authoring.
- Improved decision-making—reports and dashboards present data in easily-understood formats.
- Adaptive authoring automatically adjusts the report layout when objects are added, moved, or removed.
- Ability to work with data using familiar business terms.
- Ability to use a variety of charts—crosstabs, bar or 3D bar, pie or doughnut, line, gauge, funnel, scatter, dot density, waterfall, and so forth.
- High-performance data access across all sources.
- Complete connectivity regardless of environment.
- Open architecture that leverages XML, SOAP, and WSDL.

- Multiple export formats—Excel, Portable Document Format (PDF), Extensible Markup Language (XML), Hypertext Markup Language (HTML), and Comma Separated Value (CSV).
- Multilingual capabilities automatically deliver reports in the users' working language.
- Ability to integrate seamlessly with the Selling and Fulfillment Foundation, without the user having to log in to the application again.

8.2 DISADVANTAGES

- Its data visualization features require configuration to integrate with third-party tools.
- The user interface may not be the most intuitive, we feel that there is room for improvement.

CONCLUSION

CHAPTER – 9

CONCLUSION

The goal of this project is to analyze the literacy dataset. The provided dataset is first checked for null values and the columns with null values are identified using Python. The dataset is uploaded to the database using the IBM cloud and the database is connected to the IBM Cognos Analytics tool. In the IBM Cognos Analytics tool, the data module option is selected and the dataset is pre-processed (null values are replaced with valid values. Using this cleaned data module data exploration process is carried out, in which different visualizations are created. An interactive dashboard, report, and story are created in the IBM Cognos Analytics tool using the cleaned data module. Finally, the created dashboard, report, and story are embedded in the webpage by fixing the frame code in the html code.

FUTURE SCOPE

CHAPTER -10

FUTURE SCOPE

In future, we would like to add more parameter metrics along with this project. It can be developed using Python and machine learning algorithms. After developing the code we can analyze the result accurately. Then we added the pages to our website. When we connect the website, we are visualization the dataset not only for literacy it will fit all types of datasets. But only in the form of a CSV file it accepts. we can easy to visualize the dashboard, report, and story helping people to understand in better ways.

APPENDIX

CHAPTER – 11

APPENDIX

A.1 SOURCE CODE

HTML CODE:

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Literacy Rate Analysis</title>
    <link rel="stylesheet" href="{{ url_for('static', filename='css/app.css') }}">
</head>
<body>
    <div class="header">
<video autoplay loop muted class="back-video"
```

```
            <source src="{{ url_for('static', filename='media/Sequence
01.mp4') }}" type="video/mp4">
        </video>
        <h2 class="logo">Empowering the Future:<br>A Literacy Rate
Analysis for a Better Tomorrow</h2>

      <nav>
          <ul class="nav-links">
              <li><a href="{{ url_for('index') }}">HOME</a></li>
              <li><a href="{{ url_for('dashboard')
}}">DASHBOARD</a></li>
              <li><a href="{{ url_for('report') }}">REPORT</a></li>
              <li><a href="{{ url_for('story') }}">STORY</a></li>
          </ul>
      </nav>
    </div>
    <div class="Section">
      <section >
          <p>
```

Welcome to our web application focused on promoting literacy and education in India!

Literacy plays a crucial role in determining a country's level of development, and India recognizes its significance in fostering growth and progress. Our research examines the literacy rate in India in 2022, highlighting its importance as a key factor in a nation's advancement. The ability to communicate through reading and writing is a fundamental aspect of literacy. It reflects an individual's capacity to engage with the written word and is measured by the proportion of people over a certain age who possess this skill. Although this represents a significant improvement over the past decade, India still lags behind many other countries in terms of literacy levels.

A high literacy rate is indicative of a well-functioning primary education system and successful literacy programs. It empowers individuals to use the written word effectively in their daily lives, enables basic arithmetic calculations, and fosters a culture of lifelong learning. Literate individuals are invaluable assets to a nation's prosperity, possessing the necessary communication and critical thinking skills required for success in the workplace and the global

India has made remarkable progress in raising its literacy rate over the past four decades. The National Survey of India estimates

a literacy rate of 77.7% in 2022, compared to 73% in 2011. This growth is even more impressive considering that the population has increased by 4% since the last census. However, it is important to note that despite these advancements, approximately one in four Indians still face challenges in reading and writing, a higher proportion than the global average. Looking ahead, UNESCO projects that India will achieve universal literacy by 2060, demonstrating a commitment to ensuring every citizen has access to quality education and the ability to read and write.

Our web application aims to contribute to the ongoing efforts in promoting literacy in India. We provide resources, tools, and information to support individuals, communities, and organizations in pursuing education and improving literacy levels. Together, let's build a future where everyone can unlock their full potential through literacy and knowledge.

</section>

</body>

</html>

dashboard.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Dashboard Page</title>
    <link rel="stylesheet" href="{{ url_for('static', filename='css/dashboard.css') }}">
</head>
<body>
    <h1>DASHBOARD</h1>
    <div class="iframe1">
        <iframe src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2FLiteracy_Rate_2021_Dashboard&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;mode=das
```

```
hboard&amp;subView=model0000018814ef35db_00000002" width="1350" height="900" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>

    </div>

</body>

</html>
```

report.html

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Report Page</title>

    <link rel="stylesheet" href="{{ url_for('static', filename='css/report.css') }}">

</head>

<body>

    <h1>REPORT</h1>
```

```
    <div class="iframe2">
        <iframe
src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FIndiaLit
eracyRateReport&amp;closeWindowOnLastView=true&amp;ui_appbar=fal
se&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=run&a
mp;format=HTML&amp;prompt=false" width="1350" height="1300"
frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
    </div>
</body>
</html>
```

story.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Story Page</title>
```

```
        <link rel="stylesheet" href="{{ url_for('static',
filename='css/story.css') }}">
    </head>
    <body>
        <h1>STORY</h1>
        <div class="iframe3">
            <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=story&amp;pathRef=.
my_folders%2FLiteracyRate_Story&amp;closeWindowOnLastView=true&
amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&
amp;action=view&amp;sceneId=model0000018818d973ff_00000002&amp
;sceneTime=0" width="1350" height="900" frameborder="0"
gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
        </div>
    </body>
    </html>
```

CSS CODE:

app.css

```
@import
url('https://fonts.googleapis.com/css2?family=Roboto&display=swap');
@import
url('https://fonts.googleapis.com/css2?family=Cherry+Cream+Soda&displa
y=swap');

*{
    box-sizing: border-box;
    margin: 0;
    padding: 0;
}

body{
    margin: 10px 50px;
    color: white;
}

li, a{
    cursor: pointer;
    font-family: Roboto, sans-serif;
    font-weight: 500;
```

```
    font-size: 16px;
    color: white;
    text-decoration: none;
}

.header{
    font-family: Roboto, sans-serif;
    display: flex;
    justify-content: space-between;
    align-items: center;
    align-content: center;
    padding: 30px 10px;
    background-color: rgba(255, 255, 255, 0.119);
}

p{
    font-family: Roboto, sans-serif;
}

.back-video{
    width: 100vw;
    height: 100vh;
    object-fit: cover;
    position: fixed;
    left: 0;
    right: 0;
```

```
    top: 0;
    bottom: 0;
    z-index: -1;
}

.logo{
    font-family: 'Cherry Cream Soda';
    cursor: pointer;

    overflow: hidden;
    white-space: nowrap;
    animation: typing 5s steps(40) ;
}
@keyframes typing {
    from { width: 0; }
    to { width: 64%; }
}
.nav-links{
    list-style: none;
}

.nav-links li{
    display: inline-block;
    padding: 0px 20px 0px 0px;
    border-right: 1px solid wheat;
}
```

```
.nav-links li a{
    transition: all 0.3s ease 0s;
}

.nav-links li a:hover{
    color: wheat;
}

.Section {
    padding: 30px 30px;
    background-color: rgba(255, 255, 255, 0.119);
    margin-top: 5%;
    width: 100%;
    border-radius: 10px;
.nav-links li a {
    position: relative;
}

.nav-links li a:after {
    content: '';
    position: absolute;
    left: 0;
    bottom: -2px;
    width: 0;
    height: 2px;
    background-color: wheat;
```

```
    transition: width 0.3s ease-in-out;
}

.nav-links li a:hover:after {
    width: 100%;
}
.Section p{
    line-height: 1.5pc;
    text-align:justify;
    font-size: larger;

}

.a {
    text-indent: 75px;
}
.b {
    text-indent: 150px;
}
```

dashboard.css

```
@import
url('https://fonts.googleapis.com/css2?family=Cherry+Cream+Soda&displa
y=swap');
body{
    background-color: black;
```

```
}
h1{
    font-family: 'Cherry Cream Soda';
    color: white;
    text-align: center;
    font-size: 50px;
}

.iframe1{
    border: 2px solid gray;
    padding: 20px 30px;
    display: flex;
    align-items: center;
    justify-content: center;
}
```

report.css

```
@import
url('https://fonts.googleapis.com/css2?family=Cherry+Cream+Soda&displa
y=swap');

body{
    background-color: black;
}
h1{
```

```
    font-family: 'Cherry Cream Soda';
    color: white;
    text-align: center;
    font-size: 50px;

}
.iframe2{
    border: 2px solid gray;
    padding: 20px 30px;
    display: flex;
    align-items: center;
    justify-content: center;
}
```

story.css

```
@import
url('https://fonts.googleapis.com/css2?family=Cherry+Cream+Soda&displa
y=swap');

body{
    background-color: black;
}
h1{
    font-family: 'Cherry Cream Soda';
    color: white;
```

```
    text-align: center;
    font-size: 50px;

}

.iframe3{
    border: 2px solid gray;
    padding: 20px 30px;
    display: flex;
    align-items: center;
    justify-content: center;
}
```

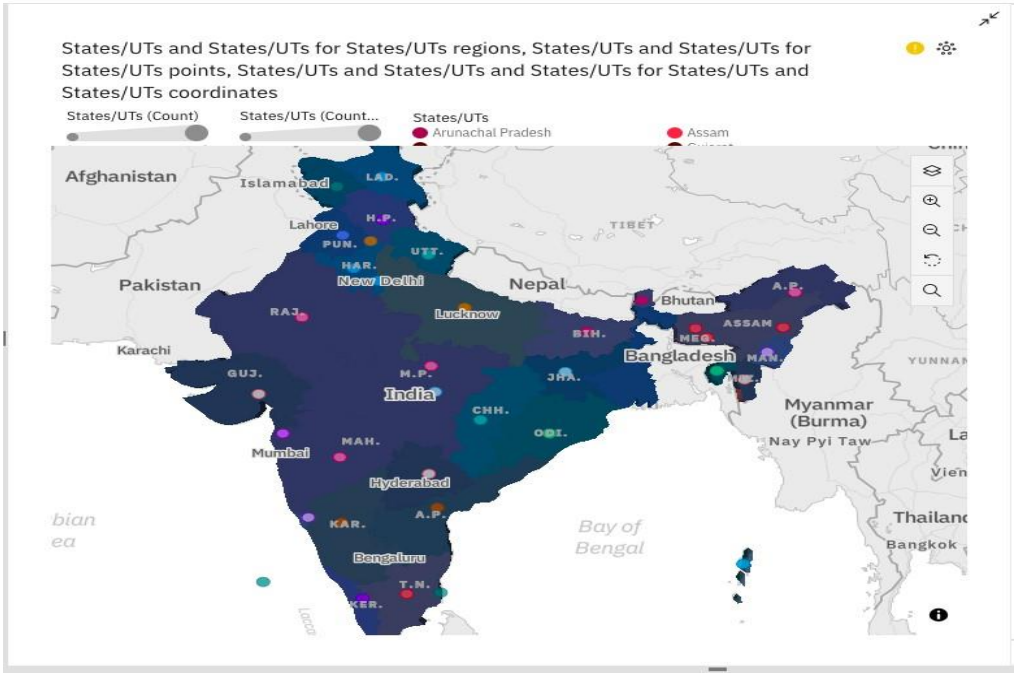
FLASK CODE :

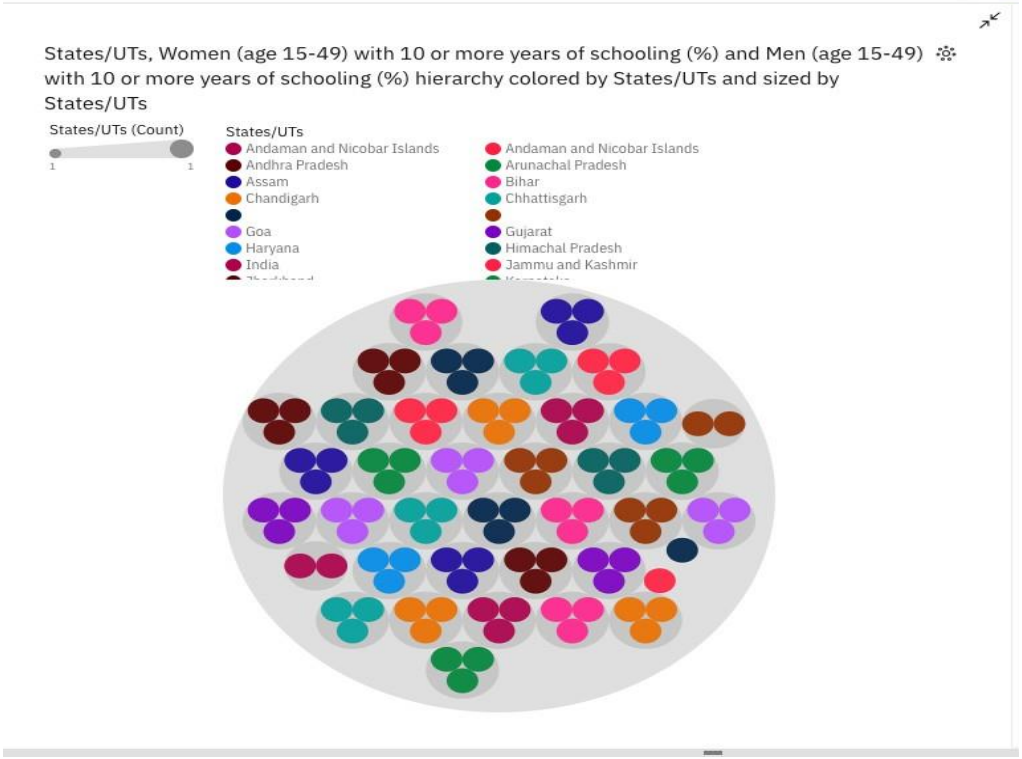
app.py

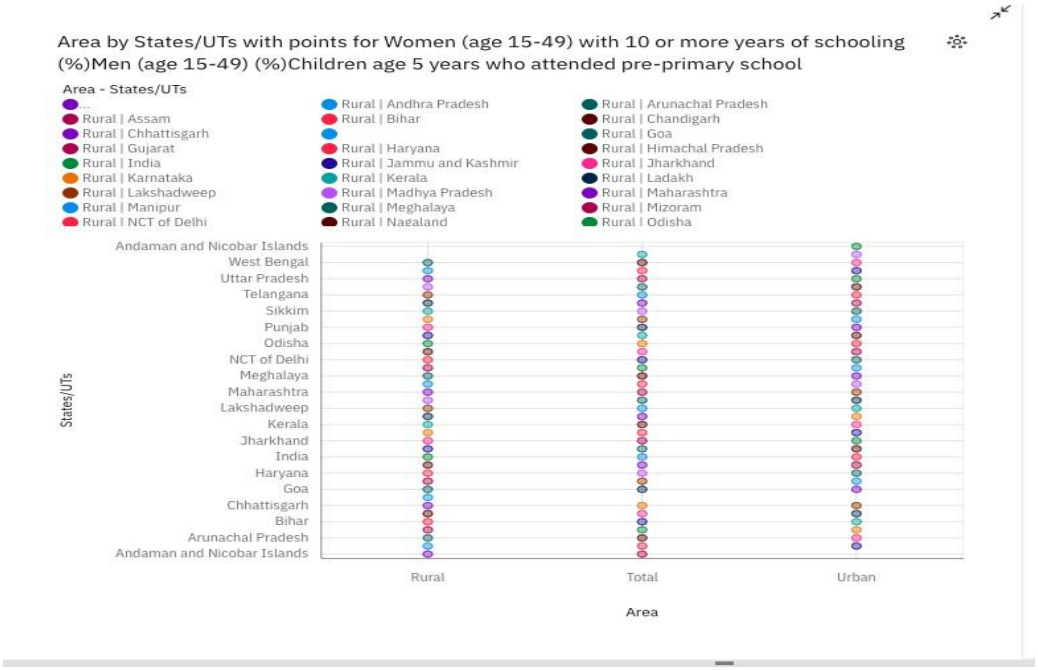
```
from flask import Flask, render_template
app = Flask(__name__)
@app.route('/',methods=["GET", "POST"])
def index():
    return render_template('index.html')
@app.route('/Dashboard',methods=["GET", "POST"])
def dashboard():
    return render_template('dashboard.html')
@app.route('/Report',methods=["GET", "POST"])
def report():
    return render_template('report.html')
@app.route('/Story',methods=["GET", "POST"])
def story():
    return render_template('story.html')
if__name___== "__main__":
    app.run(debug=True)
```

A2 HOMEPAGE

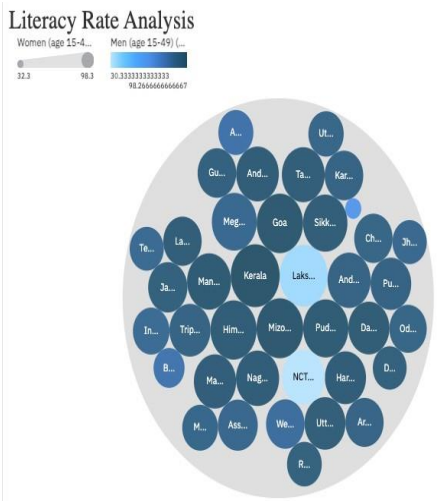
DASHBOARD


States/UTs and States/UTs for States/UTs regions, States/UTs and States/UTs for States/UTs points, States/UTs and States/UTs and States/UTs for States/UTs and States/UTs coordinates
States/UTs (Count)
States/UTs (Count...
States/UTs
Arunachal Pradesh
Assam
Afghanistan
Islamabad
LAD.
H.P.
Lahore
PUN.
UTT.
HAR.
New Delhi
Pakistan
Nepal
Bhutan
A.P.
RAJ.
Lucknow
BIH.
ASSAM
MEG.
Karachi
Bangladesh
MAN.
GUJ.
M.P.
India
JHA.
CHH.
ODI.
Myanmar
(Burma)
Nay Pyi Taw
MAH.
Mumbai
Hyderabad
A.P.
KAR.
Bengaluru
T.N.
Bay of
Bengal
Bangkok

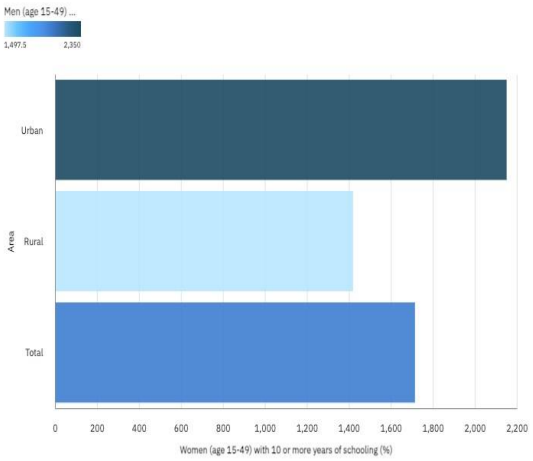

States/UTs, Women (age 15-49) with 10 or more years of schooling (%) and Men (age 15-49) with 10 or more years of schooling (%) hierarchy colored by States/UTs and sized by States/UTs
States/UTs (Count)
States/UTs
Andaman and Nicobar Islands
Andhra Pradesh
Assam
Chandigarh
Goa
Haryana
India
Andaman and Nicobar Islands
Arunachal Pradesh
Bihar
Chhattisgarh
Gujarat
Himachal Pradesh
Jammu and Kashmir



REPORT

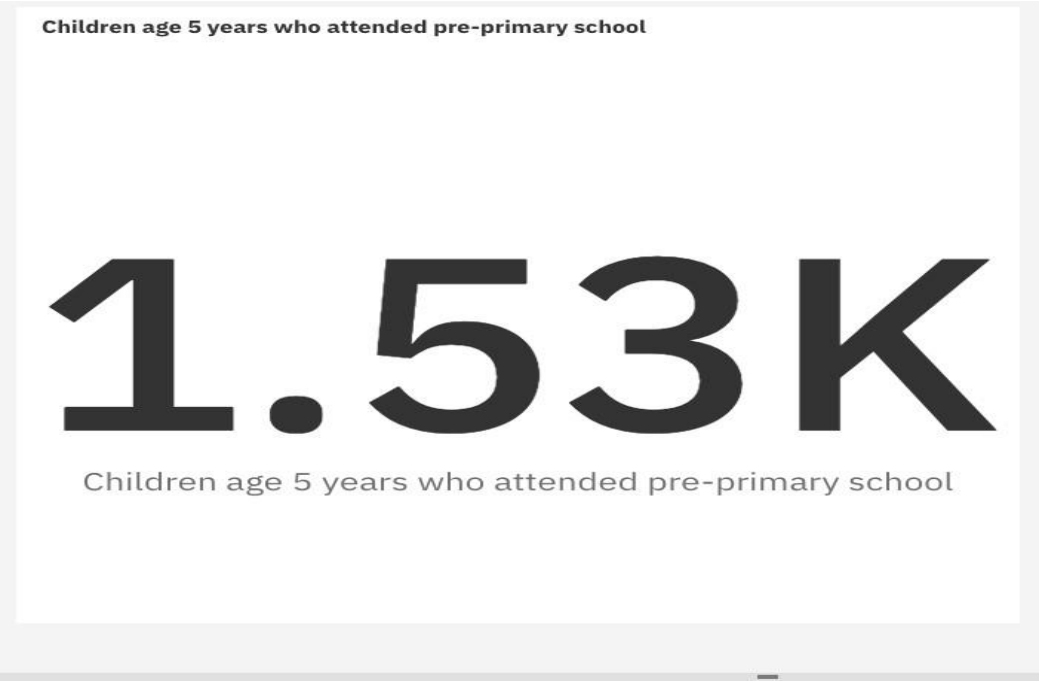


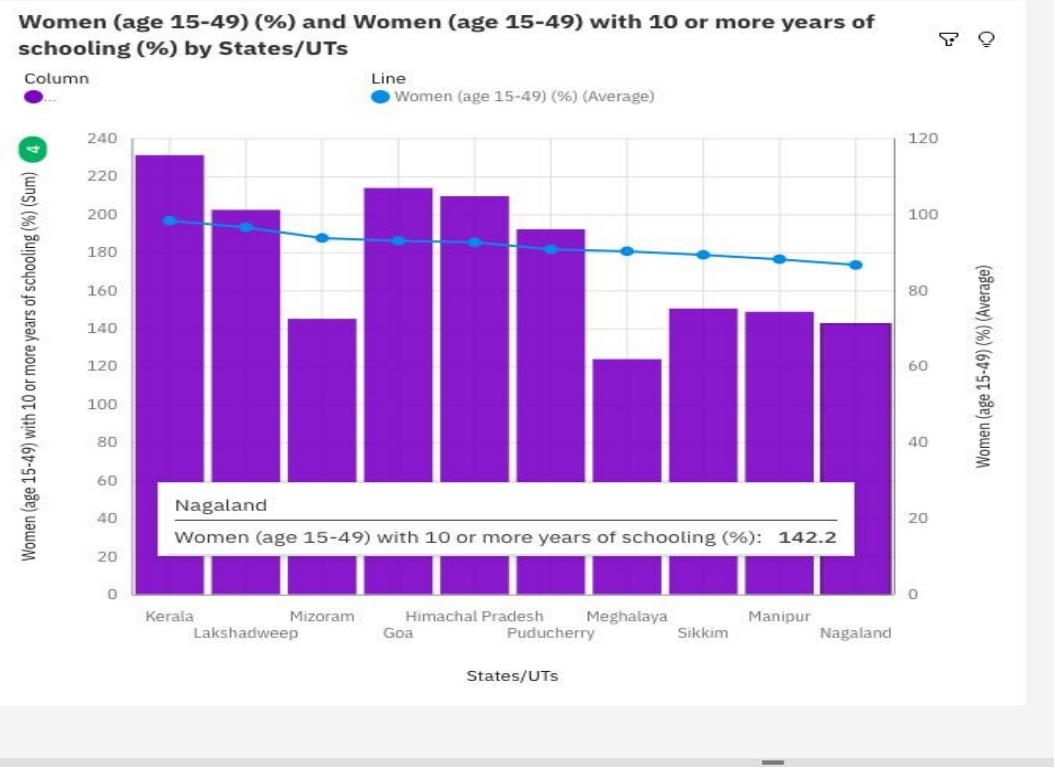
STATES BY WOMENS AGE COLORED BY MENS AGE

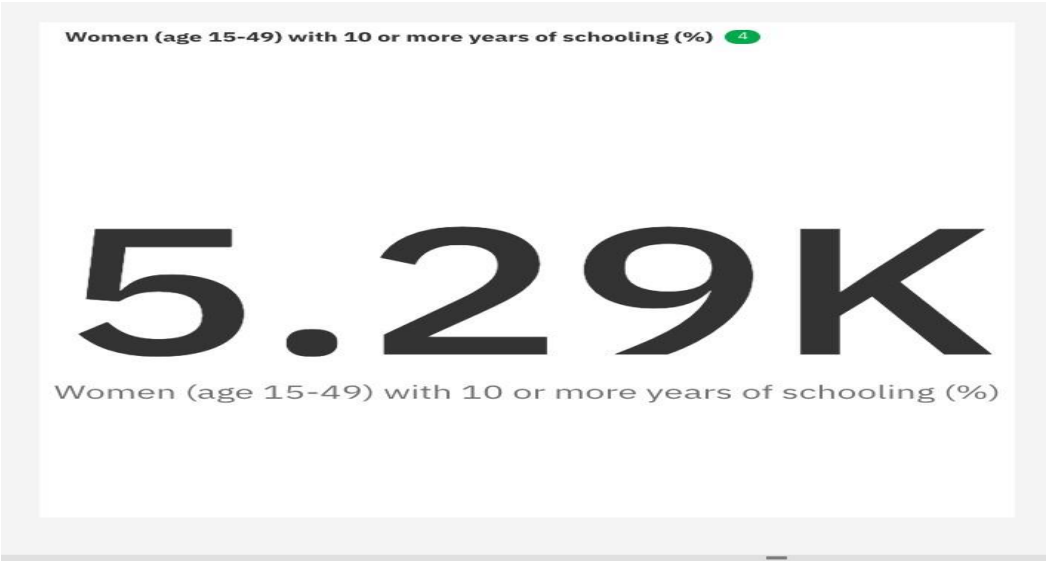


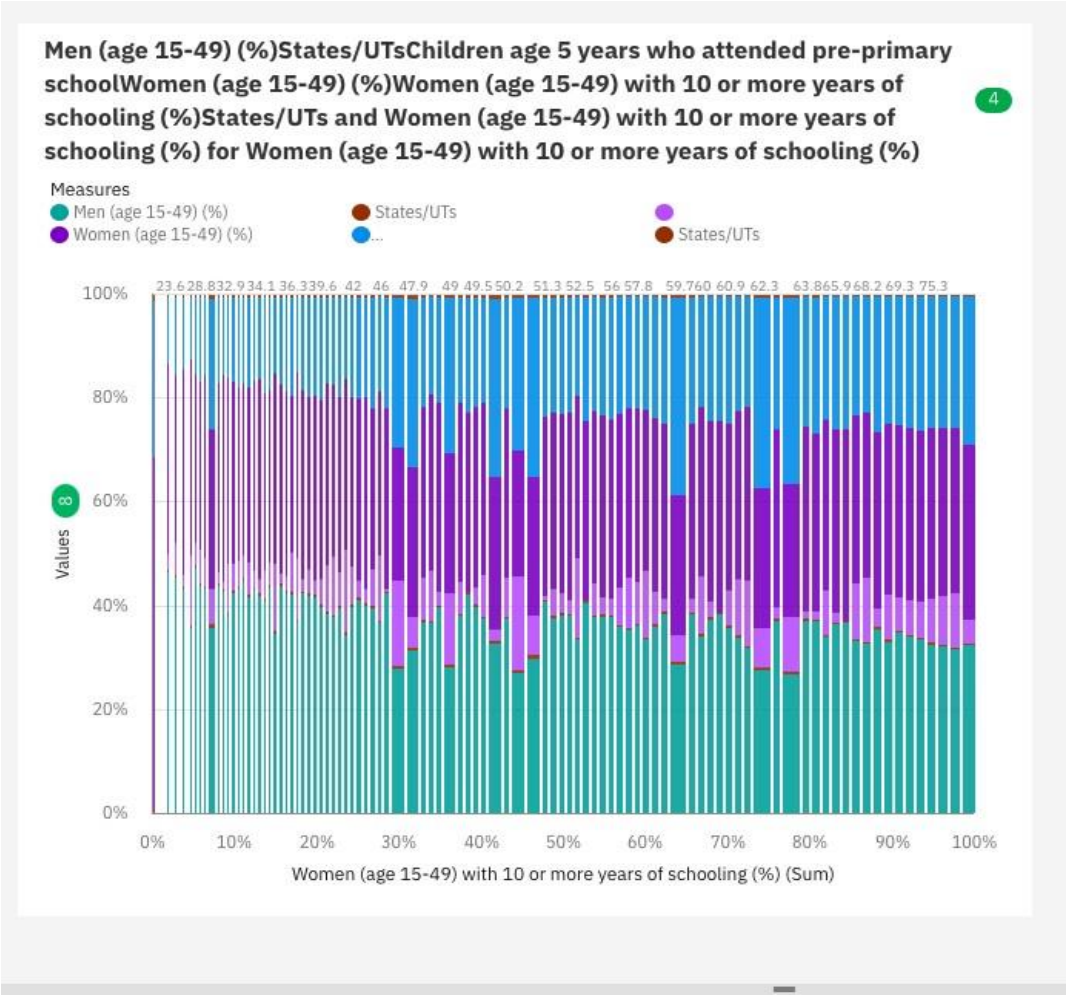
AREAS BY WOMENS AGE(15-49)

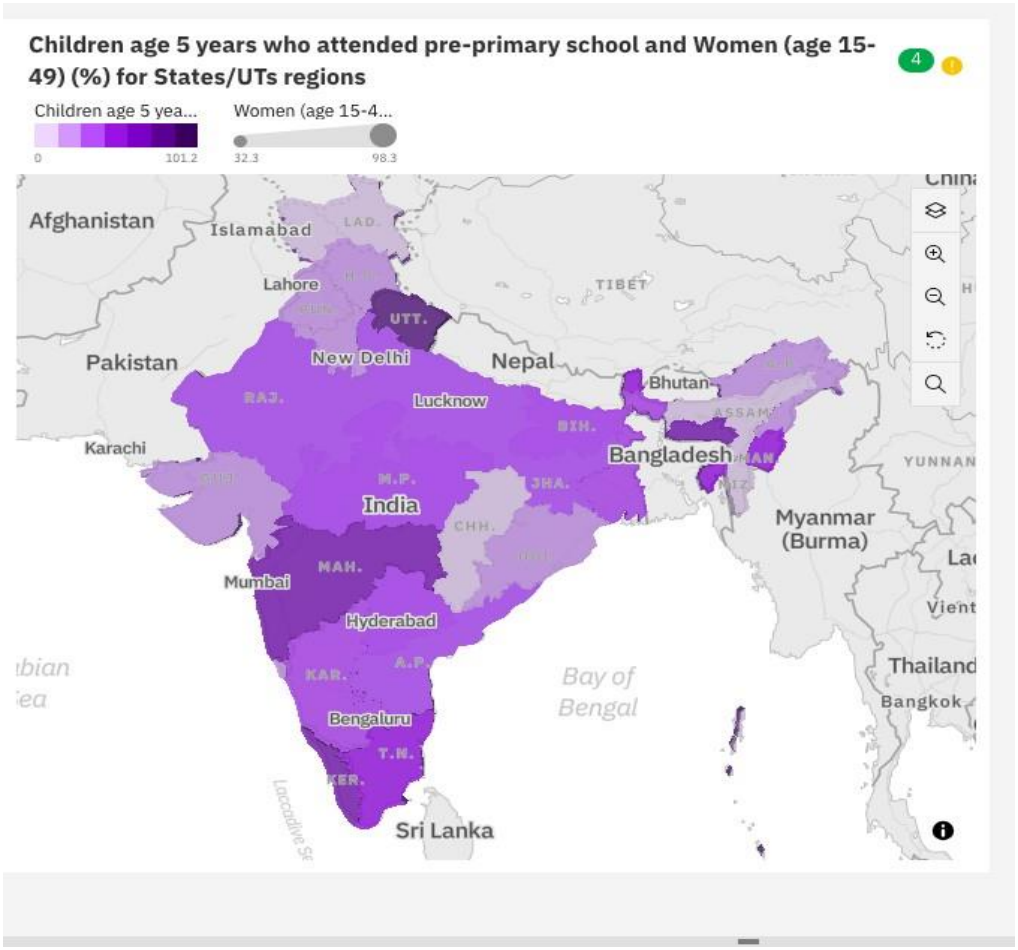
EXPLORATION:



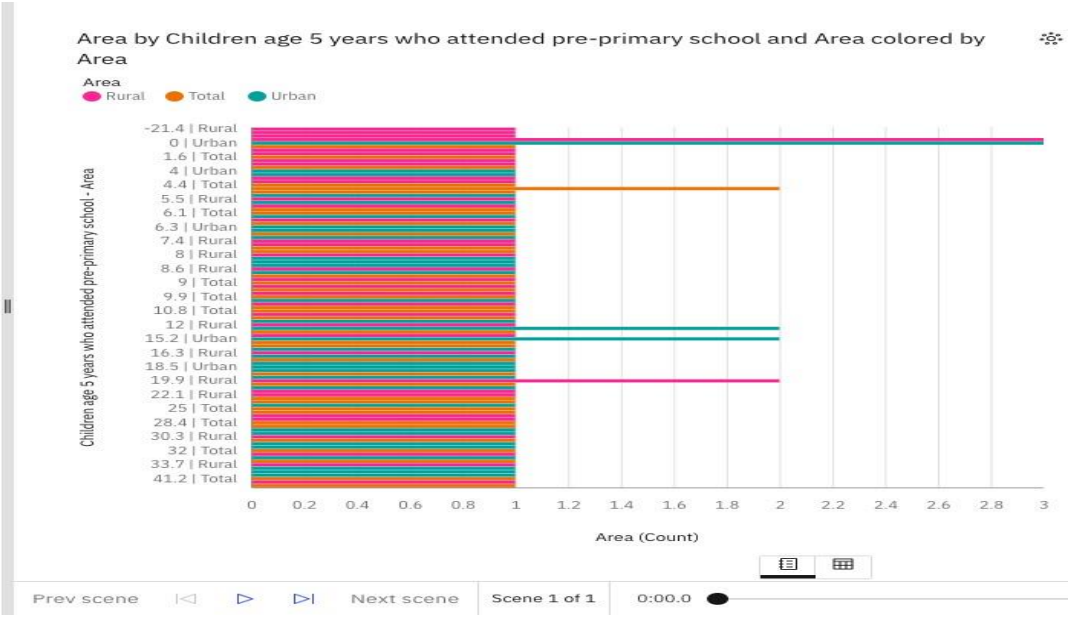


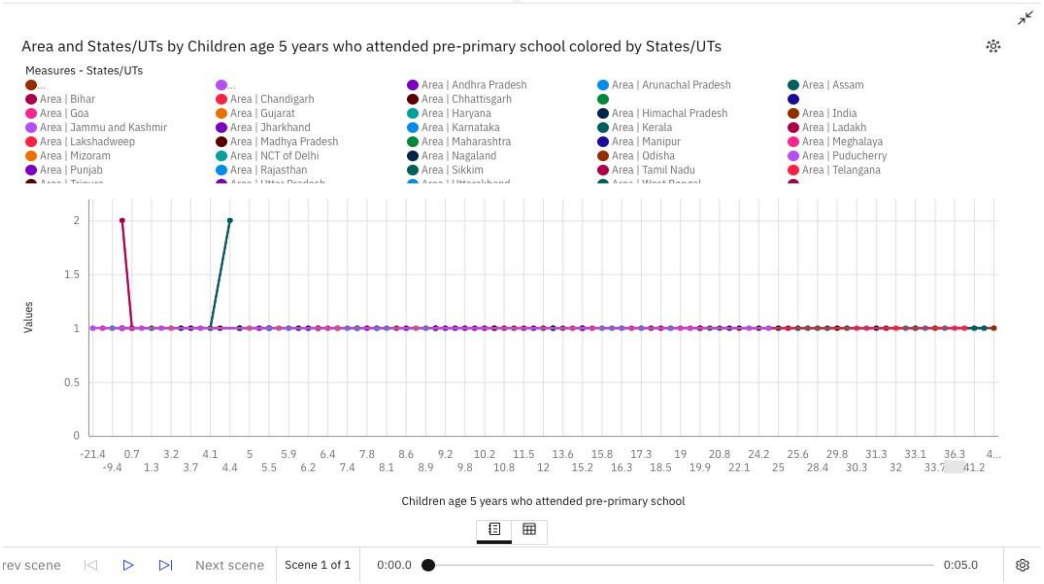

Women (age 15-49) with 10 or more years of schooling (%)
4
5.29K
Women (age 15-49) with 10 or more years of schooling (%)

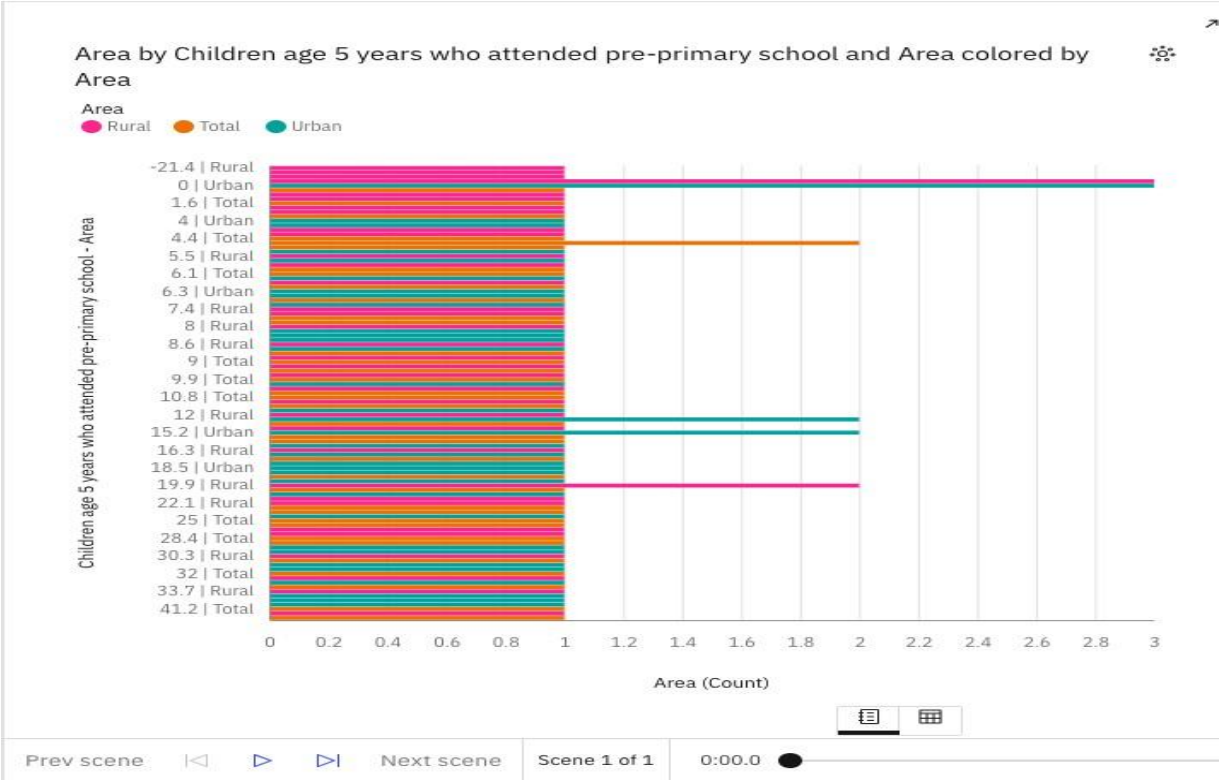

Men (age 15-49) (%)States/UTsChildren age 5 years who attended pre-primary schoolWomen (age 15-49) (%)Women (age 15-49) with 10 or more years of schooling (%)States/UTs and Women (age 15-49) with 10 or more years of schooling (%) for Women (age 15-49) with 10 or more years of schooling (%)
4
Measures
Men (age 15-49) (%)
States/UTs
Women (age 15-49) (%)
...
States/UTs
23.6 28.8 32.9 34.1 36.3 39.6 42 46 47.9 49 49.5 50.2 51.3 52.5 56 57.8 59.7 60 60.9 62.3 63.8 65.9 68.2 69.3 75.3
100%
80%
60%
40%
20%
0%
8
Values
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Women (age 15-49) with 10 or more years of schooling (%) (Sum)

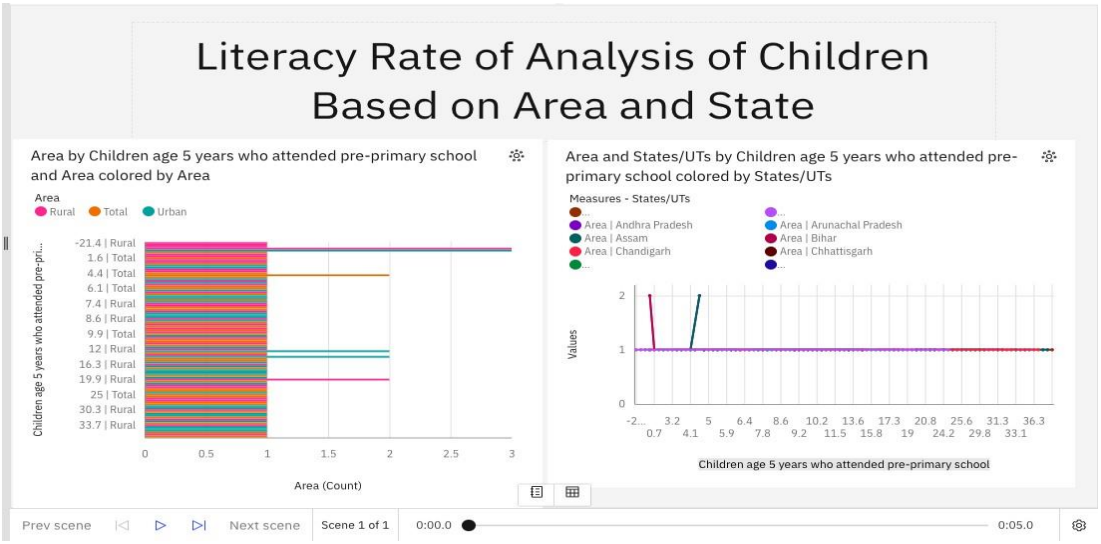

Children age 5 years who attended pre-primary school and Women (age 15-49) (%) for States/UTs regions
Children age 5 yea...
0
101.2
Women (age 15-4...
32.3
98.3
Afghanistan
Islamabad
Lahore
Pakistan
New Delhi
Nepal
Bhutan
Lucknow
Karachi
Bangladesh
India
Myanmar (Burma)
Mumbai
Hyderabad
Bengaluru
Sri Lanka
Bay of Bengal
Thailand
Bangkok
TIBET
YUNNAN

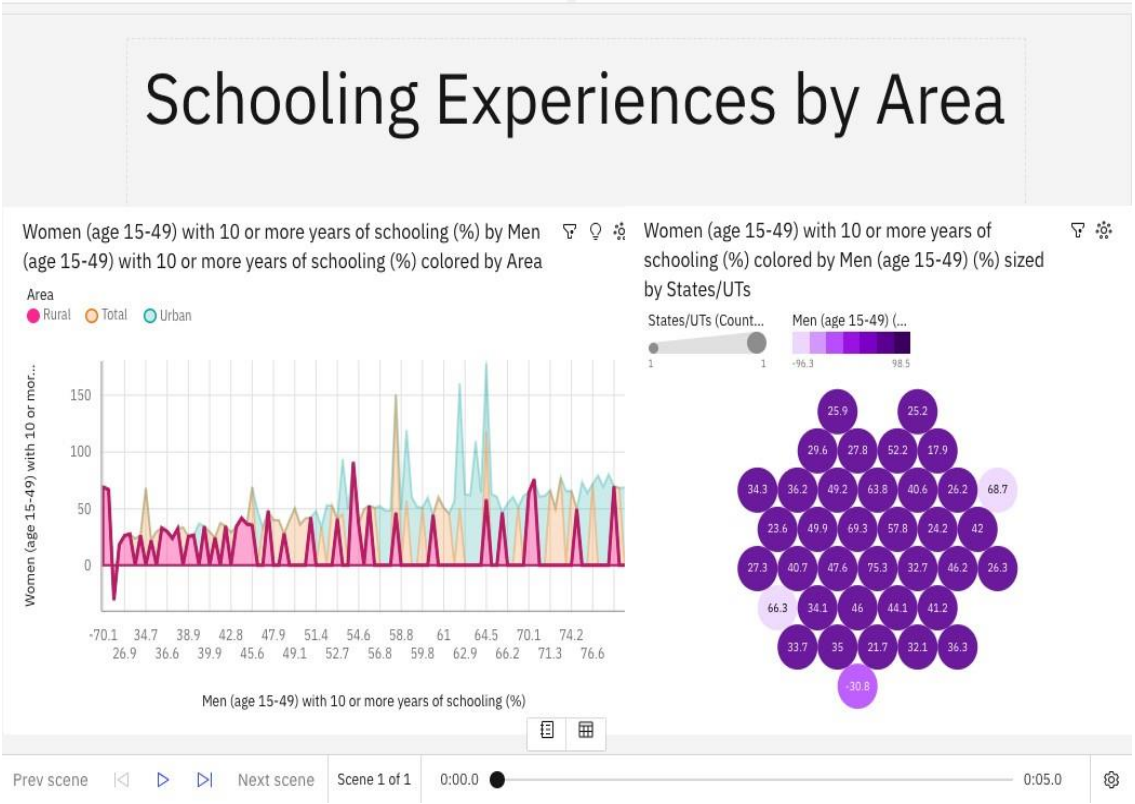
STORY

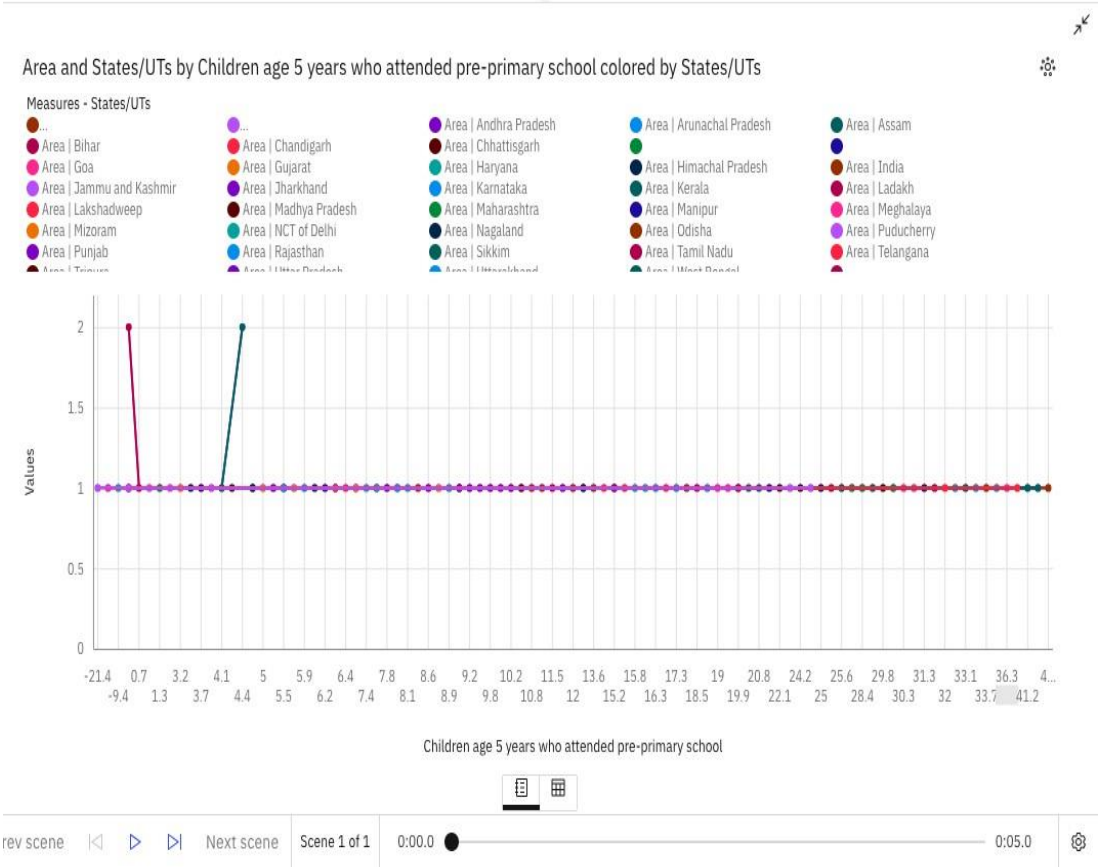

Area by Children age 5 years who attended pre-primary school and Area colored by Area
Area
Rural
Total
Urban
Children age 5 years who attended pre-primary school - Area
-21.4 | Rural
0 | Urban
1.6 | Total
4 | Urban
4.4 | Total
5.5 | Rural
6.1 | Total
6.3 | Urban
7.4 | Rural
8 | Rural
8.6 | Rural
9 | Total
9.9 | Total
10.8 | Total
12 | Rural
15.2 | Urban
16.3 | Rural
18.5 | Urban
19.9 | Rural
22.1 | Rural
25 | Total
28.4 | Total
30.3 | Rural
32 | Total
33.7 | Rural
41.2 | Total
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3
Area (Count)
Prev scene
Next scene
Scene 1 of 1
0:00.0


Area and States/UTs by Children age 5 years who attended pre-primary school colored by States/UTs
Measures - States/UTs
Area | Andhra Pradesh
Area | Arunachal Pradesh
Area | Assam
Area | Bihar
Area | Chandigarh
Area | Chhattisgarh
Area | Goa
Area | Gujarat
Area | Haryana
Area | Himachal Pradesh
Area | India
Area | Jammu and Kashmir
Area | Jharkhand
Area | Karnataka
Area | Kerala
Area | Ladakh
Area | Lakshadweep
Area | Madhya Pradesh
Area | Maharashtra
Area | Manipur
Area | Meghalaya
Area | Mizoram
Area | NCT of Delhi
Area | Nagaland
Area | Odisha
Area | Puducherry
Area | Punjab
Area | Rajasthan
Area | Sikkim
Area | Tamil Nadu
Area | Telangana
Values
Children age 5 years who attended pre-primary school
rev scene
Next scene
Scene 1 of 1
0:00.0
0:05.0


Area by Children age 5 years who attended pre-primary school and Area colored by Area
Area
Rural
Total
Urban
Children age 5 years who attended pre-primary school - Area
Area (Count)
Prev scene
Next scene
Scene 1 of 1
0:00.0


Literacy Rate of Analysis of Children Based on Area and State
Area by Children age 5 years who attended pre-primary school and Area colored by Area
Area
Rural
Total
Urban
Children age 5 years who attended pre-pri...
-21.4 | Rural
1.6 | Total
4.4 | Total
6.1 | Total
7.4 | Rural
8.6 | Rural
9.9 | Total
12 | Rural
16.3 | Rural
19.9 | Rural
25 | Total
30.3 | Rural
33.7 | Rural
0
0.5
1
1.5
2
2.5
3
Area (Count)
Area and States/UTs by Children age 5 years who attended pre-primary school colored by States/UTs
Measures - States/UTs
Area | Andhra Pradesh
Area | Arunachal Pradesh
Area | Assam
Area | Bihar
Area | Chandigarh
Area | Chhattisgarh
Values
2
1
0
-2...
3.2
5
6.4
8.6
10.2
13.6
17.3
20.8
25.6
31.3
36.3
0.7
4.1
5.9
7.8
9.2
11.5
15.8
19
24.2
29.8
33.1
Children age 5 years who attended pre-primary school
Prev scene
Next scene
Scene 1 of 1
0:00.0
0:05.0


Schooling Experiences by Area
Women (age 15-49) with 10 or more years of schooling (%) by Men (age 15-49) with 10 or more years of schooling (%) colored by Area
Area
Rural
Total
Urban
Women (age 15-49) with 10 or mor...
150
100
50
0
-70.1
26.9
34.7
36.6
38.9
39.9
42.8
45.6
47.9
49.1
51.4
52.7
54.6
56.8
58.8
59.8
61
62.9
64.5
66.2
70.1
71.3
74.2
76.6
Men (age 15-49) with 10 or more years of schooling (%)
Women (age 15-49) with 10 or more years of schooling (%) colored by Men (age 15-49) (%) sized by States/UTs
States/UTs (Count...
1
1
Men (age 15-49) (...
-96.3
98.5
25.9
25.2
29.6
27.8
52.2
17.9
34.3
36.2
49.2
63.8
40.6
26.2
68.7
23.6
49.9
69.3
57.8
24.2
42
27.3
40.7
47.6
75.3
32.7
46.2
26.3
66.3
34.1
46
44.1
41.2
33.7
35
21.7
32.1
36.3
-30.8
Prev scene
Next scene
Scene 1 of 1
0:00.0
0:05.0


Area and States/UTs by Children age 5 years who attended pre-primary school colored by States/UTs
Measures - States/UTs
Area | Andhra Pradesh
Area | Arunachal Pradesh
Area | Assam
Area | Bihar
Area | Chandigarh
Area | Chhattisgarh
Area | Goa
Area | Gujarat
Area | Haryana
Area | Himachal Pradesh
Area | India
Area | Jammu and Kashmir
Area | Jharkhand
Area | Karnataka
Area | Kerala
Area | Ladakh
Area | Lakshadweep
Area | Madhya Pradesh
Area | Maharashtra
Area | Manipur
Area | Meghalaya
Area | Mizoram
Area | NCT of Delhi
Area | Nagaland
Area | Odisha
Area | Puducherry
Area | Punjab
Area | Rajasthan
Area | Sikkim
Area | Tamil Nadu
Area | Telangana
Values
2
1.5
1
0.5
0
-21.4 0.7 3.2 4.1 5 5.9 6.4 7.8 8.6 9.2 10.2 11.5 13.6 15.8 17.3 19 20.8 24.2 25.6 29.8 31.3 33.1 36.3
-9.4 1.3 3.7 4.4 5.5 6.2 7.4 8.1 8.9 9.8 10.8 12 15.2 16.3 18.5 19.9 22.1 25 28.4 30.3 32 33.7 41.2
Children age 5 years who attended pre-primary school
rev scene
Next scene
Scene 1 of 1
0:00.0
0:05.0

GITHUB LINK & PROJECT DEMO VIDEO:

https://github.com/2k20cse117/NaanMudhalvan_DataAnalytics_NM2023TMID01965.git

https://drive.google.com/file/d/1a9eri9ZSFwWcNHL3F-INnHuBpEaVIeAg/view?usp=sharing