Tableau insight: Unemployment rate in India during covid-19

Project description:

Unemployment is a serious problem which is being experienced by most of countries throughout the globe. Nevertheless, in the developed nations it was experienced in its severe form at the time of the great depression (1930's) while in the developing nations it was after the Second World war (1945).

In India Unemployment is considered a curse of development particularly the literate unemployed. In India, any person working about 8 hours a day 273 days annually is considered as employed on a standard person- year basis. Thus, a person to be called an employed person must get meaningful work for a minimum of 2184 hours in a year. The person, who does not get work for this duration, is known as an unemployed person.

Problem statement:

The objective of the project is how the lockdown affects employment opportunities and how the unemployment rate increases during Covid-19.

Analysing the dataset to get insights of

1. **How Covid-19 affects the employment**
2. **How far the unemployment rate will go**

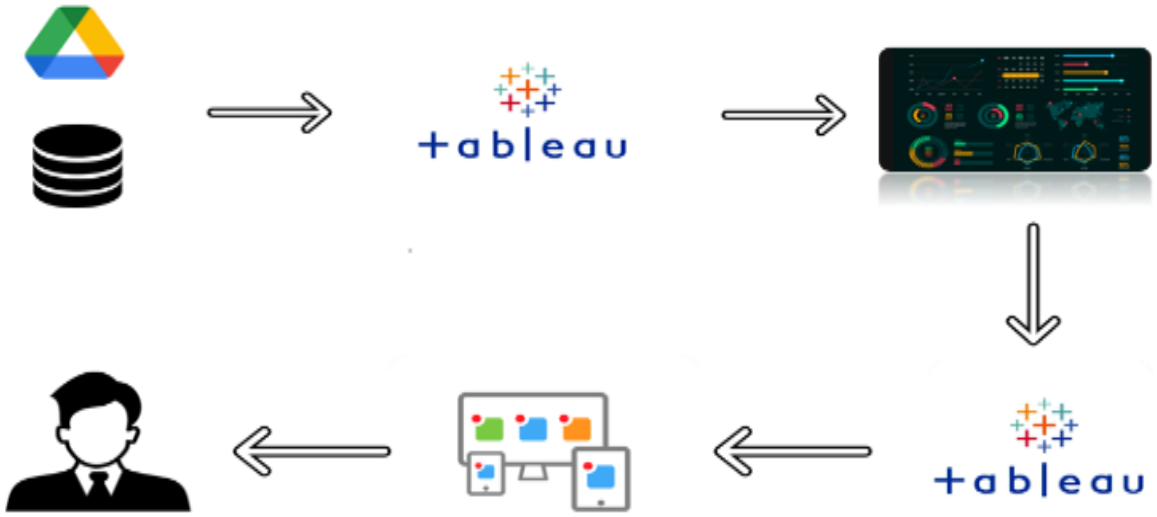
Social impact:

The visualizations of India's unemployment rate during the Covid-19 pandemic can shed light on the socio-economic challenges challenge faced by the population.

Business impact:

For business operating in India, especially those reliant on consumer spending, understanding the unemployment rate during Covid-19 is crucial for strategic planning and decision-making.

Technical architecture:



Project Flow

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

- **Data Collection & Extraction from Database**
  - **o Collect the dataset,**
  - **o Connect data with Tableau**
- **Data Preparation**
  - **o Prepare the Data for Visualization**
- **Data Visualizations**
  - **o No of Unique Visualizations**
- **Dashboard**
  - **o Responsive and Design of Dashboard**
- **Story**
  - **o No of Scenes of Story**
- **Performance Testing**
  - **o Amount of Data Loaded**
  - **o Utilization of Data Filters**
  - **o No of Calculation Fields**
  - **o No of Visualizations/ Graphs**
- **Web Integration**
  - **o Dashboard and Story embed with UI With Flask**
- **Project Demonstration & Documentation**
  - **o Project Documentation-Step by step project development procedure**

Milestone 1: Data Collection & Extraction from Dtabase

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer started research questions, test hypothesis, and evaluate outcomes and generate insights from the data.

Activity 1: Collect the dataset

Please use the link to download the dataset1: link

Please use the link to download the dataset2: link2

Activity 1.1: Understanding the dataset

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

Column Description of the Dataset:

- **Date= Date which the unemployment rate observed**
- **Area= Areas which are rural and urban**
- **Region= States in India**
- **Estimated Unemployment Rate(%)= Percentage of people unemployed in each states of India**
- **Estimated Employed= Percentage of people employed**
- **Estimated Labour Participation Rate(%)= Labour force participation rate by dividing the number of people actively participating in the labour force by the total number of people eligible to participate in the labour force**
- **Frequency= Measuring frequency(Monthly)**

Milestone 2: Data Preparation

Activity 1: Prepare the Data for Visualizations

Preparing the data for visualizations involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

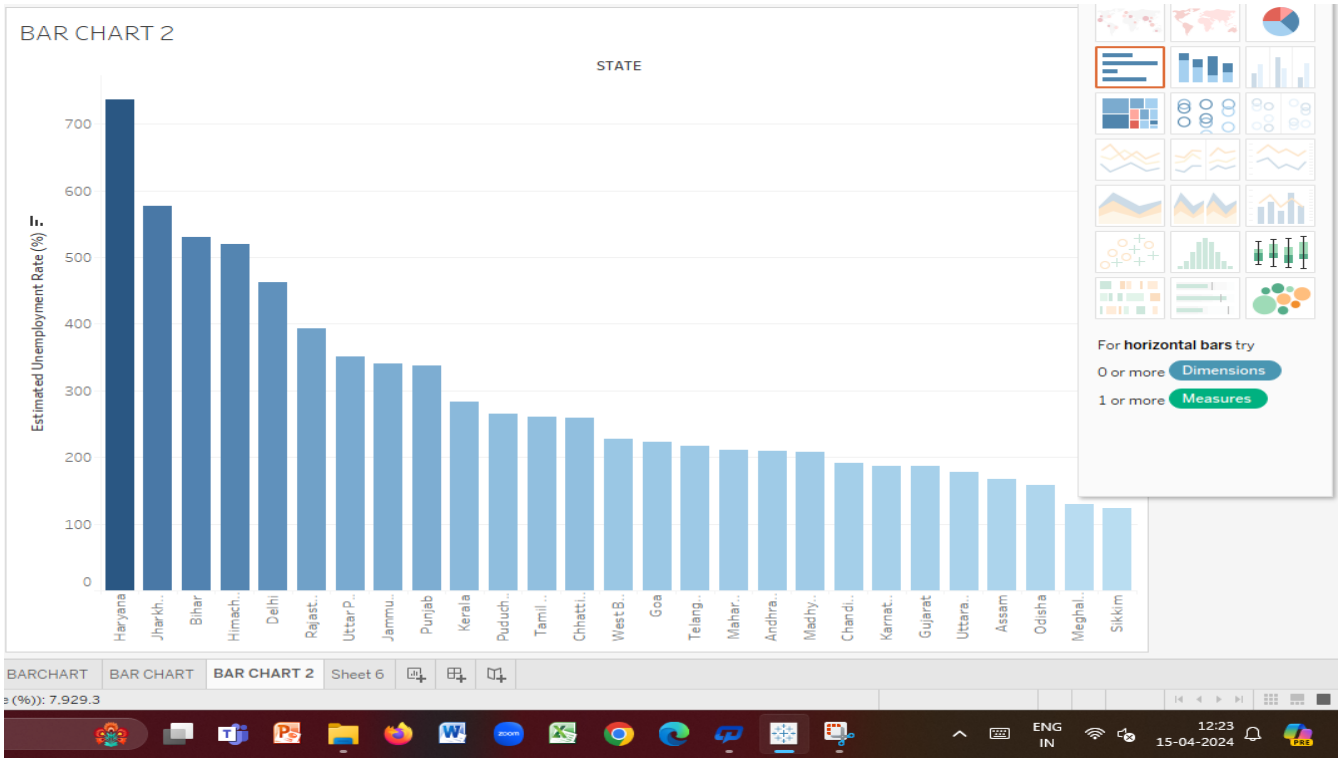
Milestone 3: Data Visualization

Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

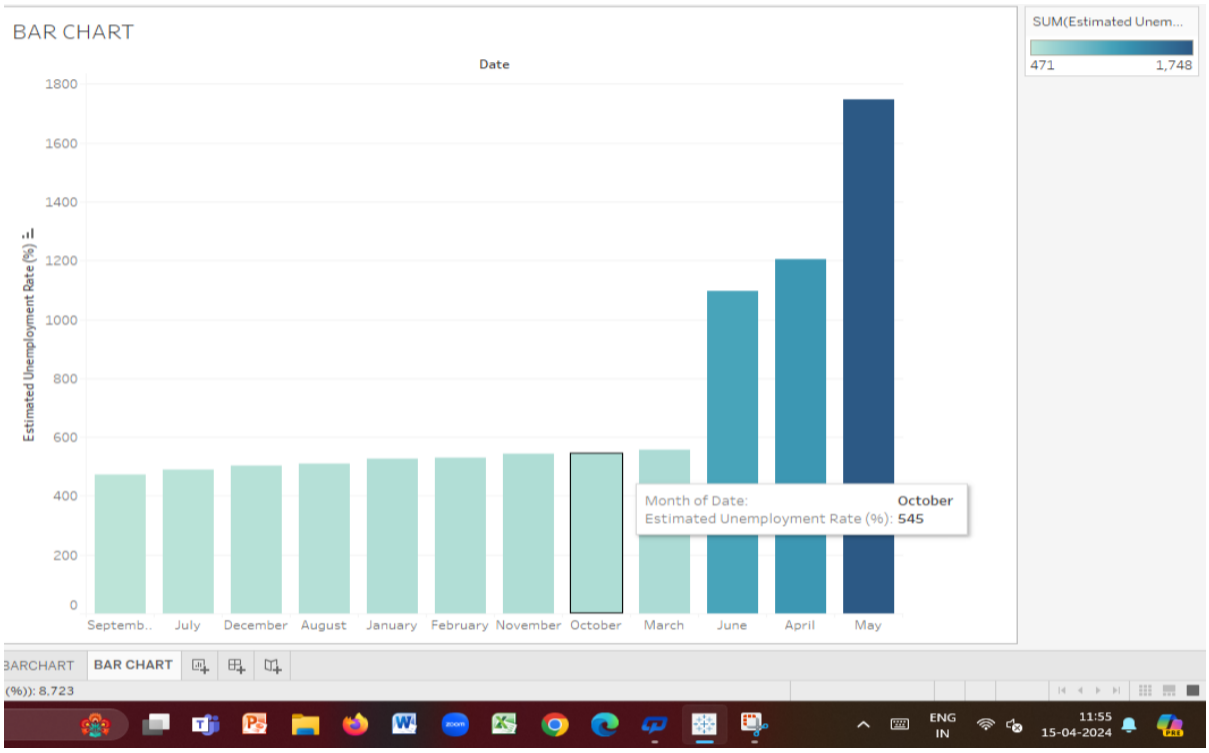
Activity 1: No of Unique Visualizations

The number of unique visualizations that can be created with a given dataset Some common types of visualizations that can be used to analyse the unemployment, employment, labour rate . Visualisations include bar charts, stacked bar charts, funnel chart, pie chart, dual line chart etc. These visualizations can be used to compare performance, track changes over time and relationships between variables, understanding the concept of unemployment during Covid-19 easily.

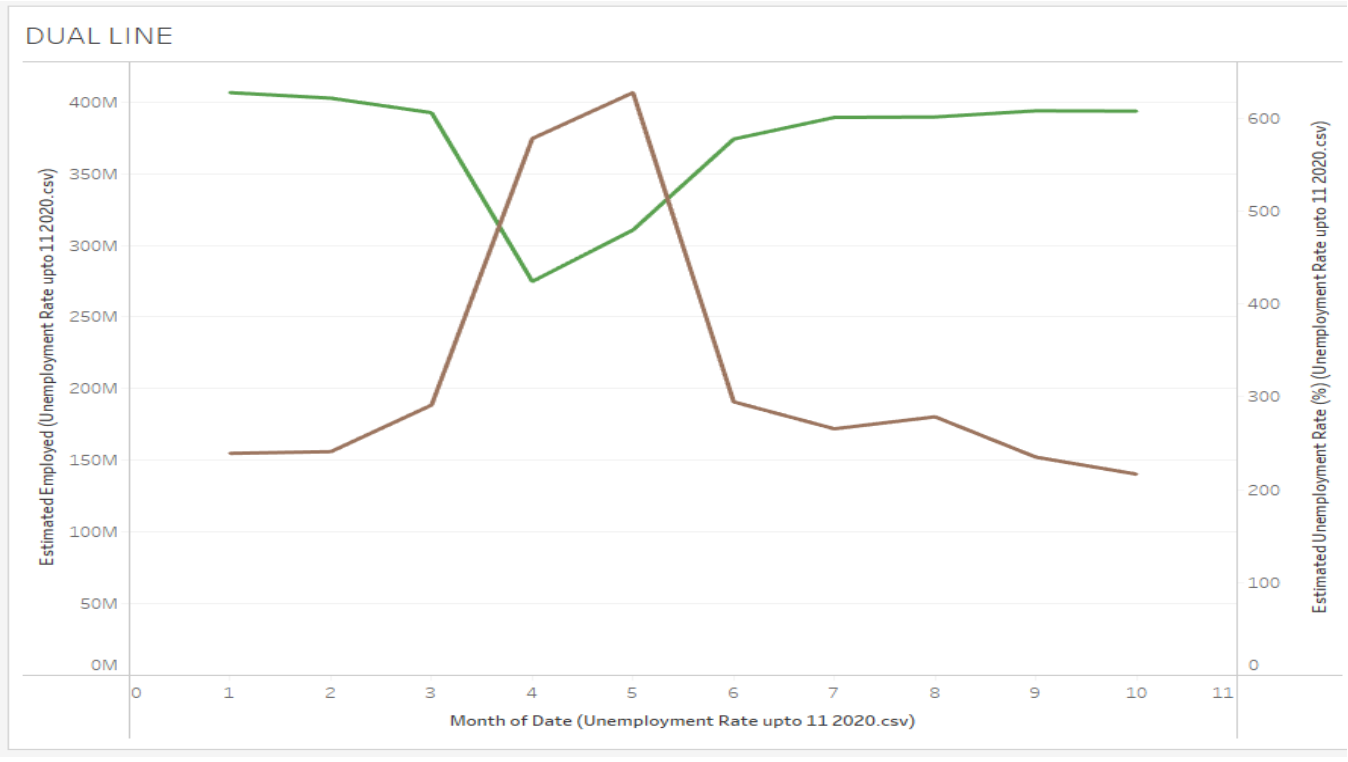
Activity 1.1: Estimated Unemployment rate in each state



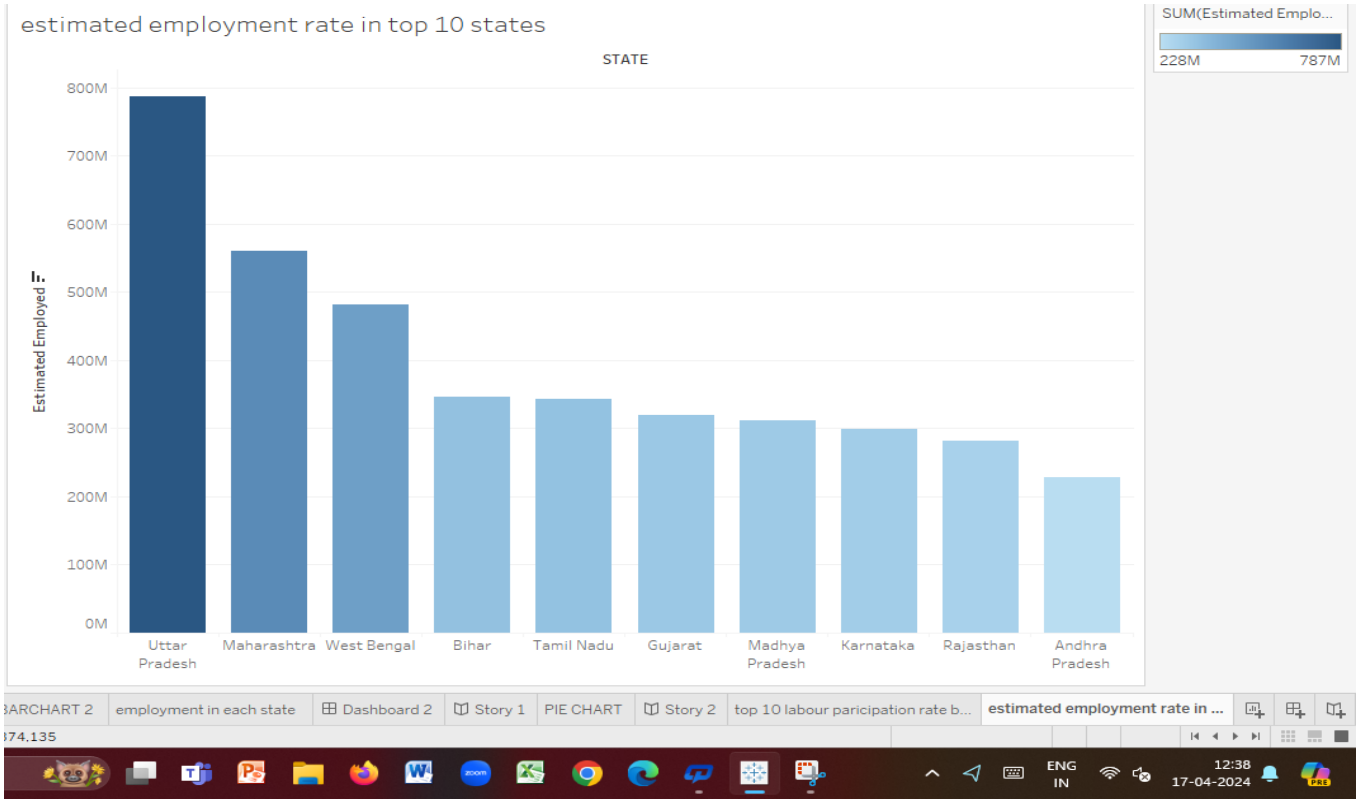
Activity 1.2: Estimated unemployment rate in each month



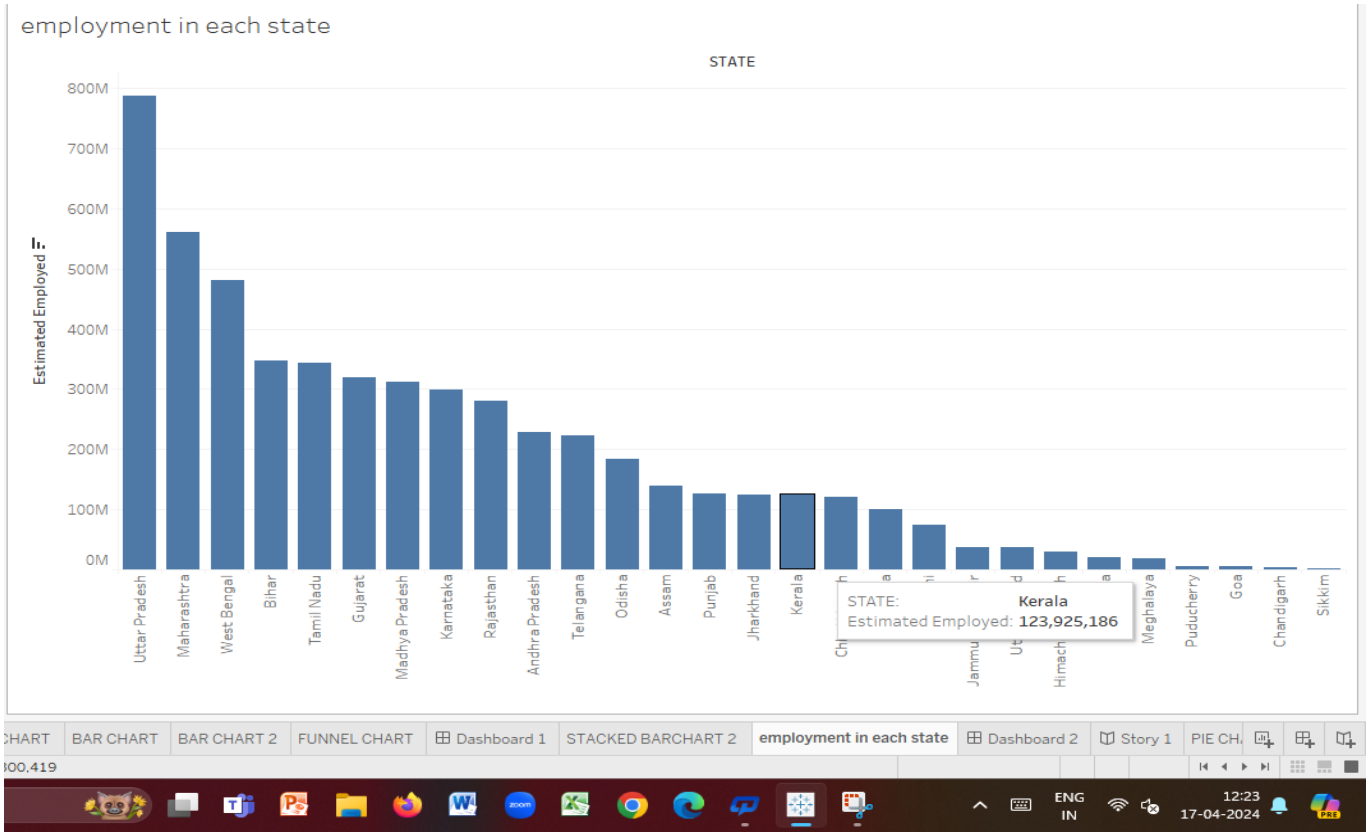
Activity 1.3: Estimated employment and Unemployment rate in month of date



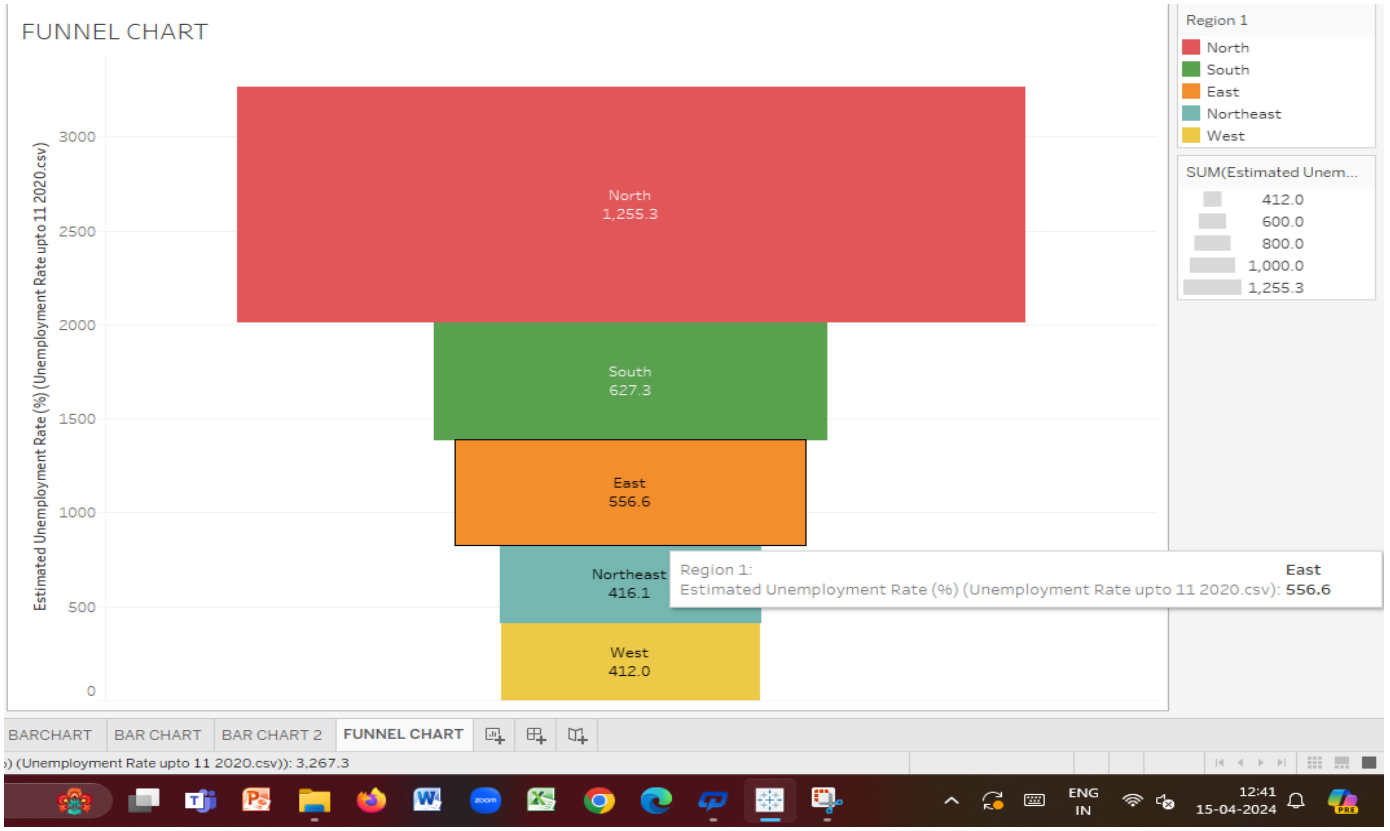
Activity 1.4: Estimated employment rate in top 10 states



Activity 1.5: Estimated employment in each state

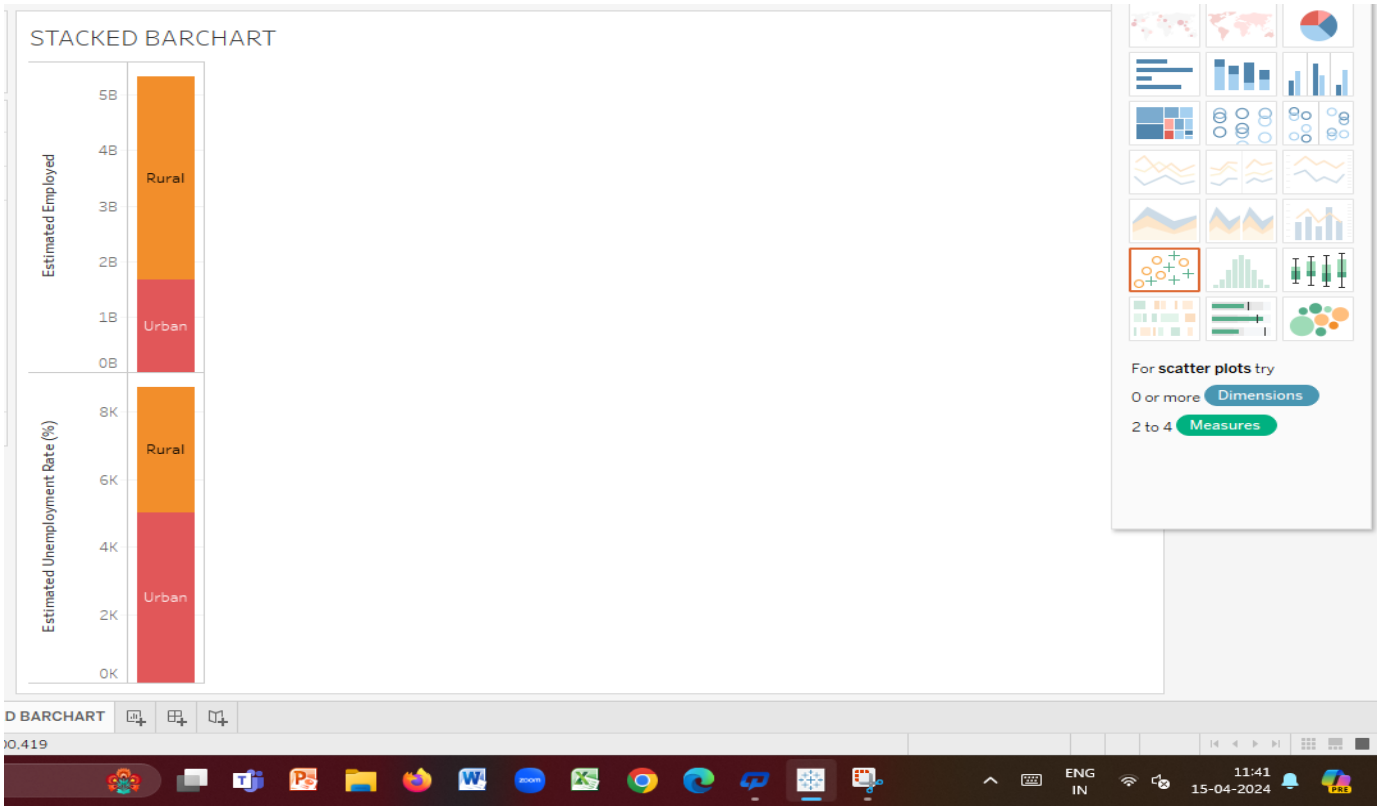


Activity 1.6: Estimated unemployment rate(%) in each region

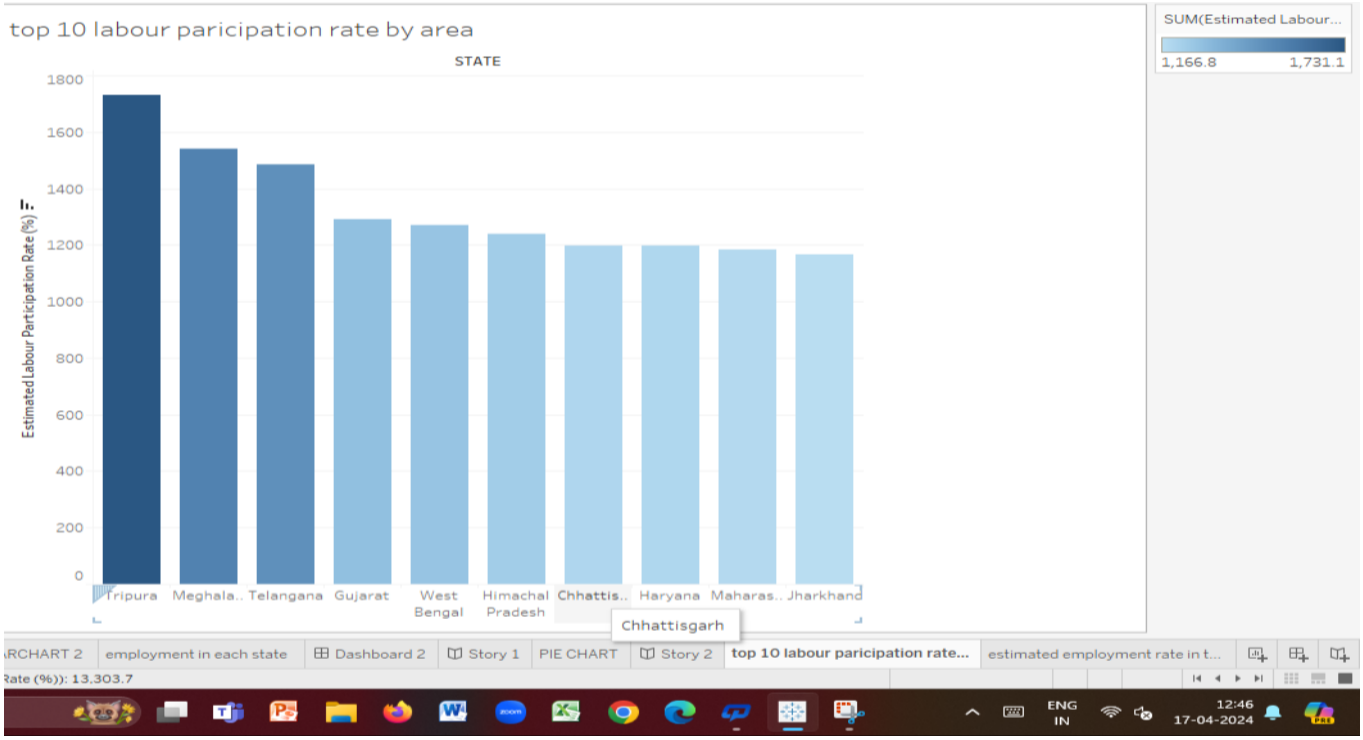


Activity 1.7: Estimated labour participation, unemployment rate up to 11 2020

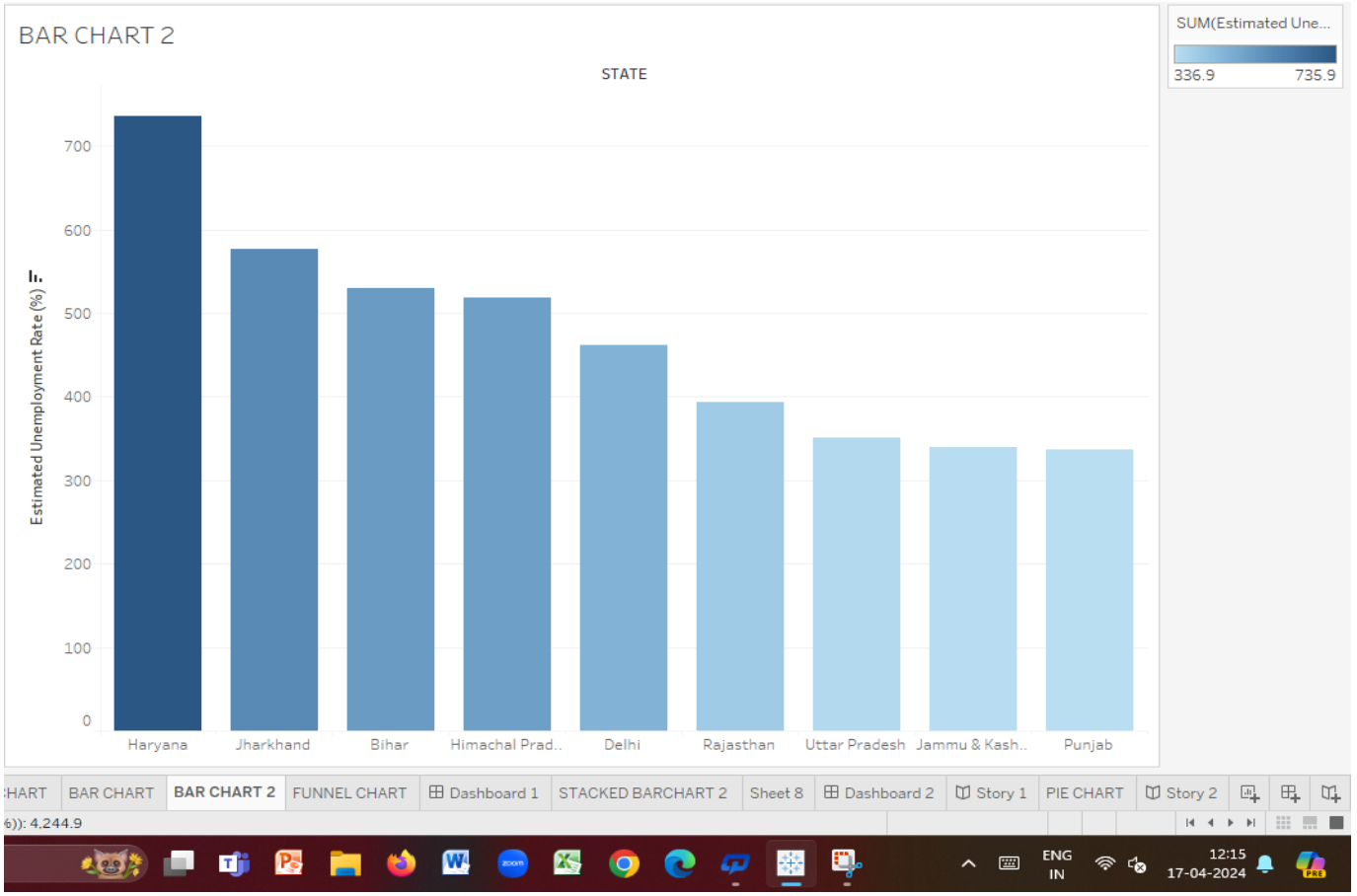
Activity 1.8: Estimated employment and unemployment in rural and urban.



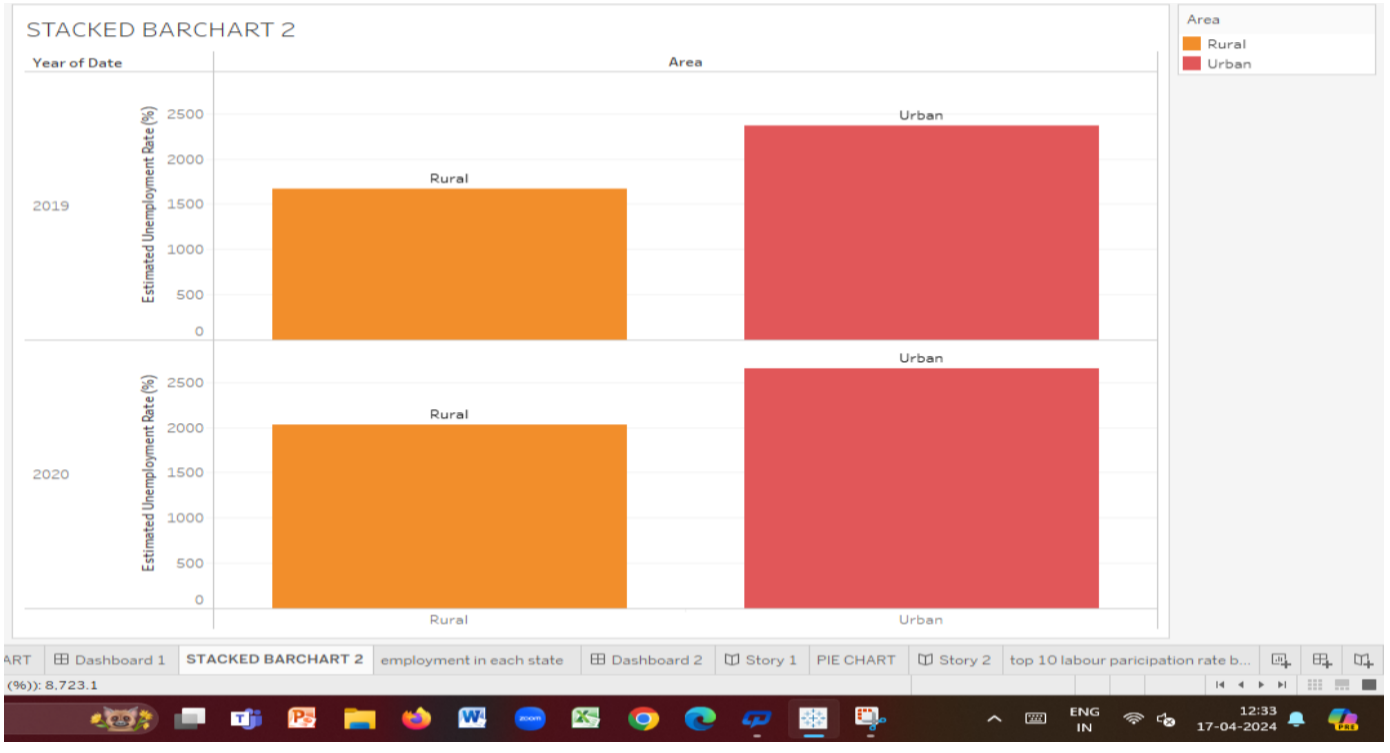
Activity 1.9: Top 10 Labour participation rate by area



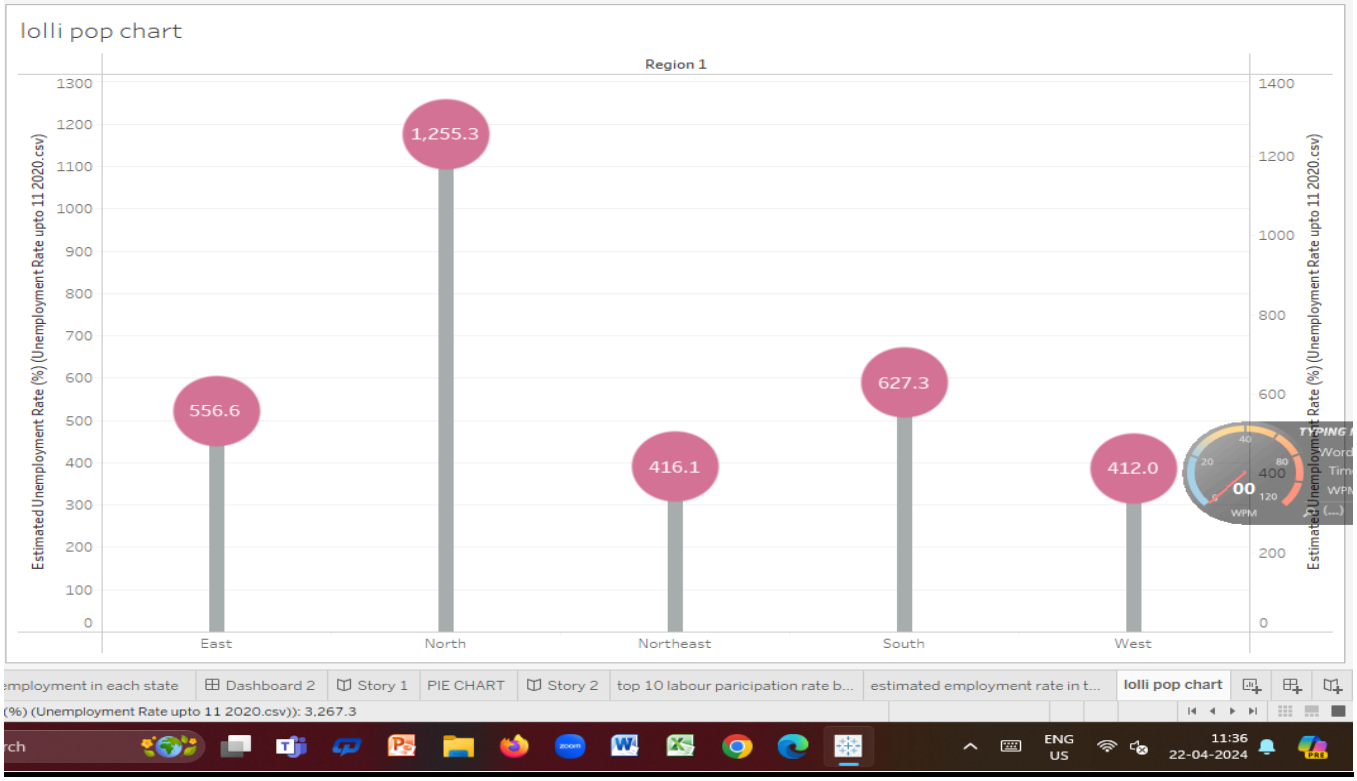
Activity 1.10: Top estimated unemployment rate by state



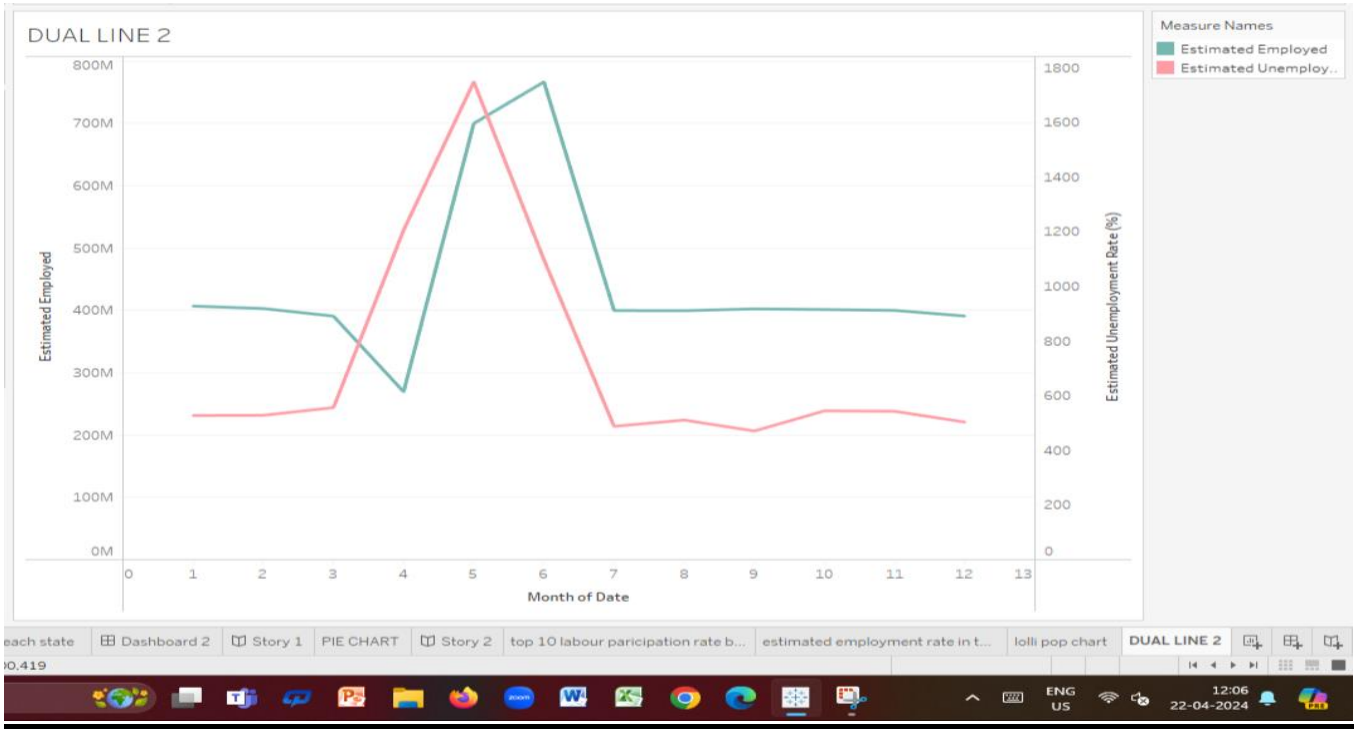
Activity 1.11: Employment and unemployment rate in 2019,2020



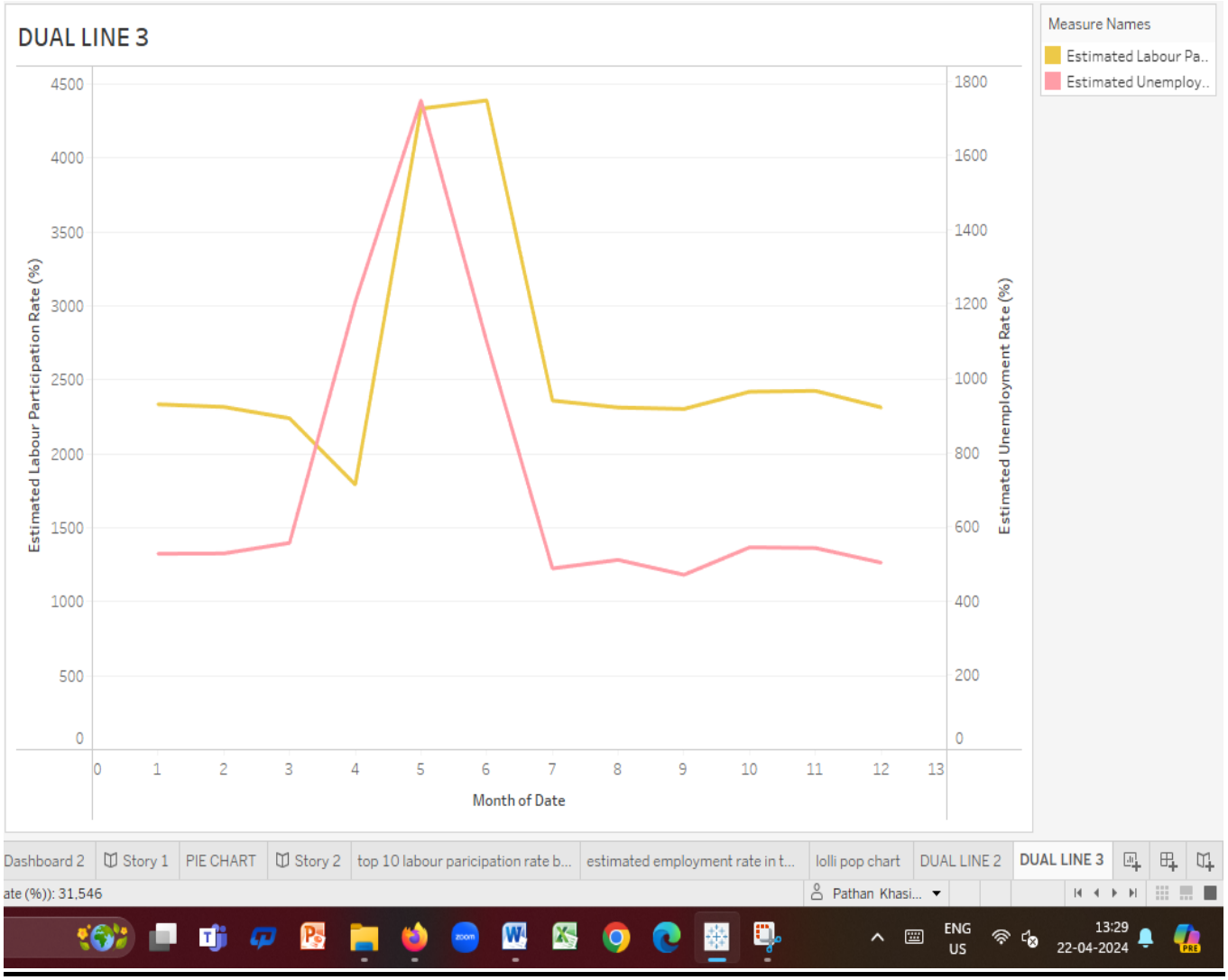
ACTIVITY 1.12: ESTIMATED UNEMPLOYMENT RATE UPTO 11 2020 IN EACH REGION



Activity 1.13: Showing estimated employment and estimated unemployment in dual line



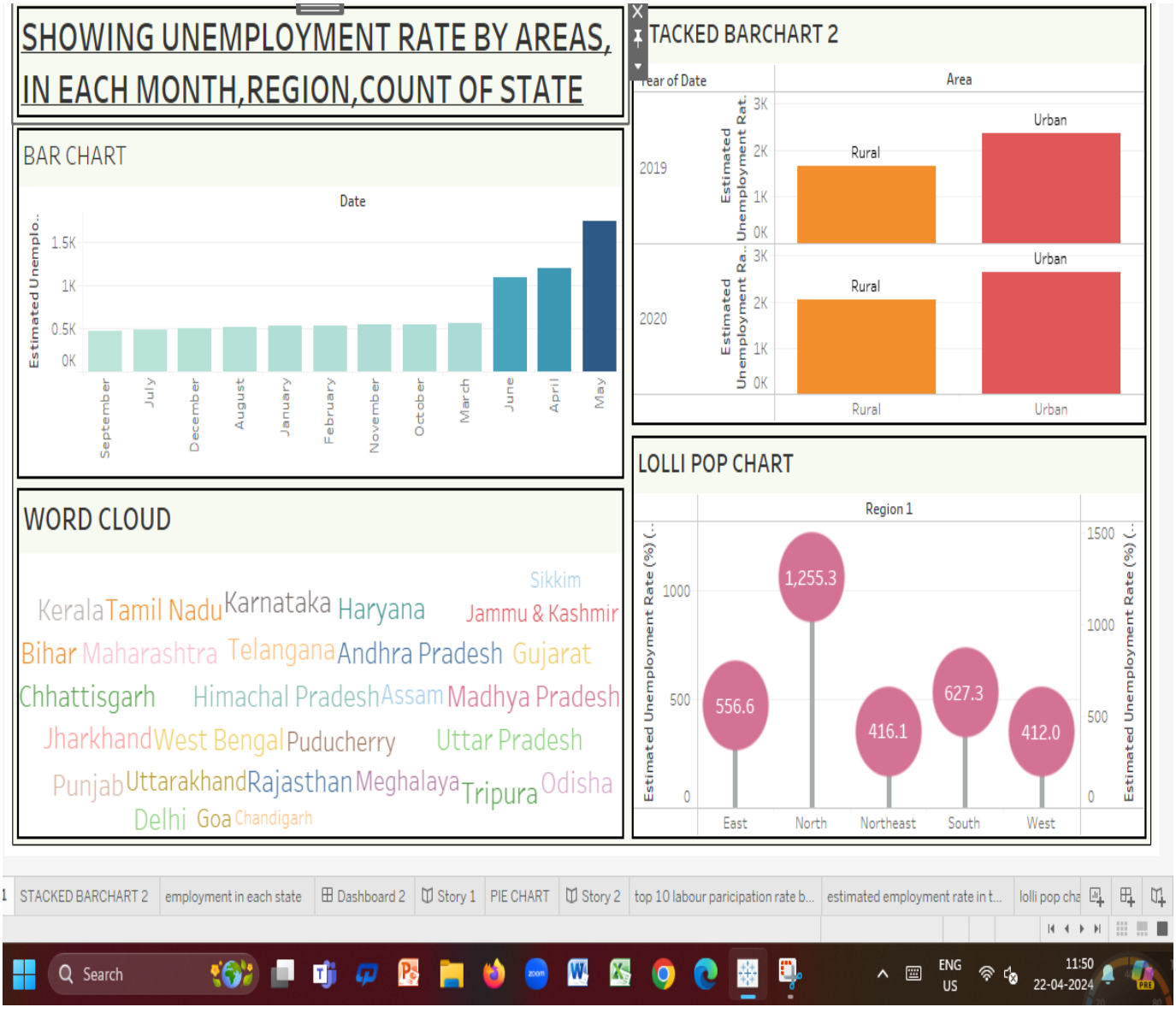
Activity 1.14: Showing Estimated labour participation &unemployment in dual line

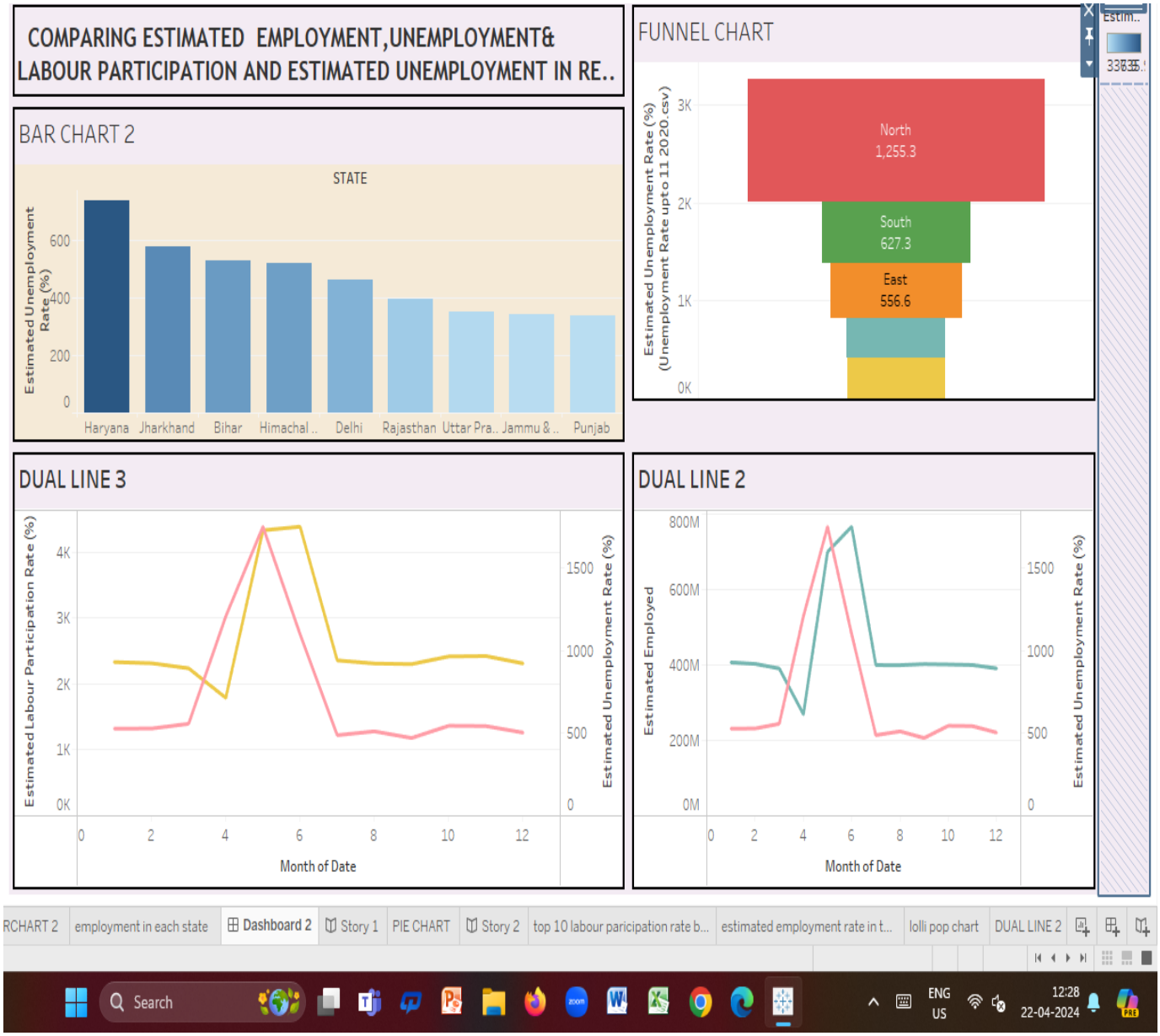


Milestone 4:Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typicallydesigned for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

Activity :1- Responsive and Design of Dashboard

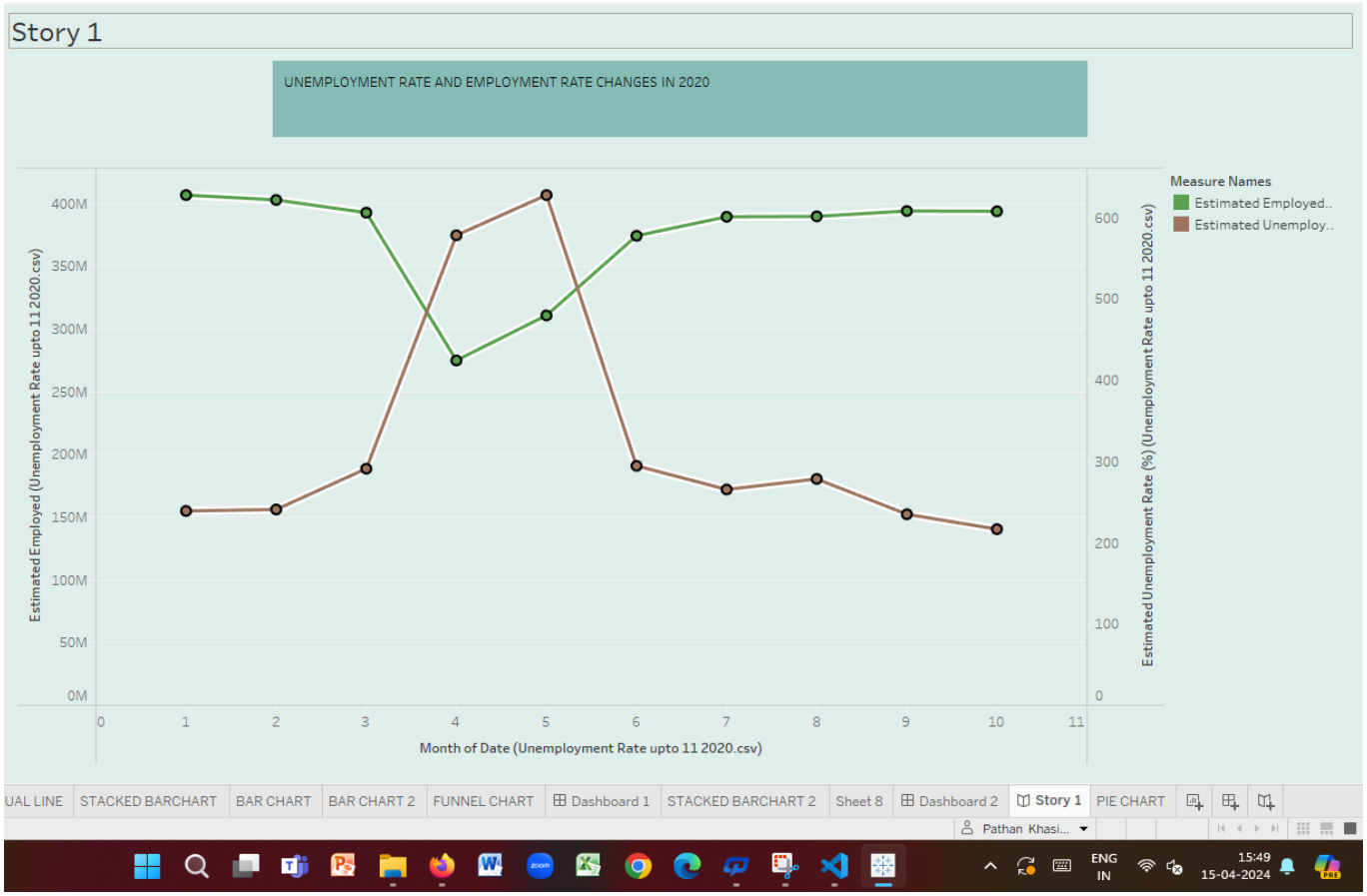




Milestone 5: Story

A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

Activity 1: No of Scenes of Story


Story 1
UNEMPLOYMENT RATE AND EMPLOYMENT RATE CHANGES IN 2020
Measure Names
Estimated Employed..
Estimated Unemploy..
Estimated Employed (Unemployment Rate upto 11 2020.csv)
Estimated Unemployment Rate (%) (Unemployment Rate upto 11 2020.csv)
Month of Date (Unemployment Rate upto 11 2020.csv)
400M
350M
300M
250M
200M
150M
100M
50M
0M
600
500
400
300
200
100
0
0
1
2
3
4
5
6
7
8
9
10
11
UAL LINE
STACKED BARCHART
BAR CHART
BAR CHART 2
FUNNEL CHART
Dashboard 1
STACKED BARCHART 2
Sheet 8
Dashboard 2
Story 1
PIE CHART
Pathan Khasi...
ENG
IN
15:49
15-04-2024

Story 1
UNEMPLOYMENT RATE AND EMPLOYMENT RATE CHANGES IN 2020
ESTIMATED EMPLOYED AND ESTIMATED UNEMPLOYED IN RURAL AND URBAN
SHOWING ESTIMATED UNEMPLOYMENT IN EACH REGION
Area
Rural
Urban
Estimated Employed
5B
4B
3B
2B
1B
0B
Rural
Urban
Estimated Unemployment Rate (%)
8K
6K
4K
2K
0K
Rural
Urban
BAR CHART 2
FUNNEL CHART
Dashboard 1
STACKED BARCHART 2
employment in each state
Dashboard 2
Story 1
PIE CHART
Story 2
top 10 labour paricipation rate b.
Search
ENG
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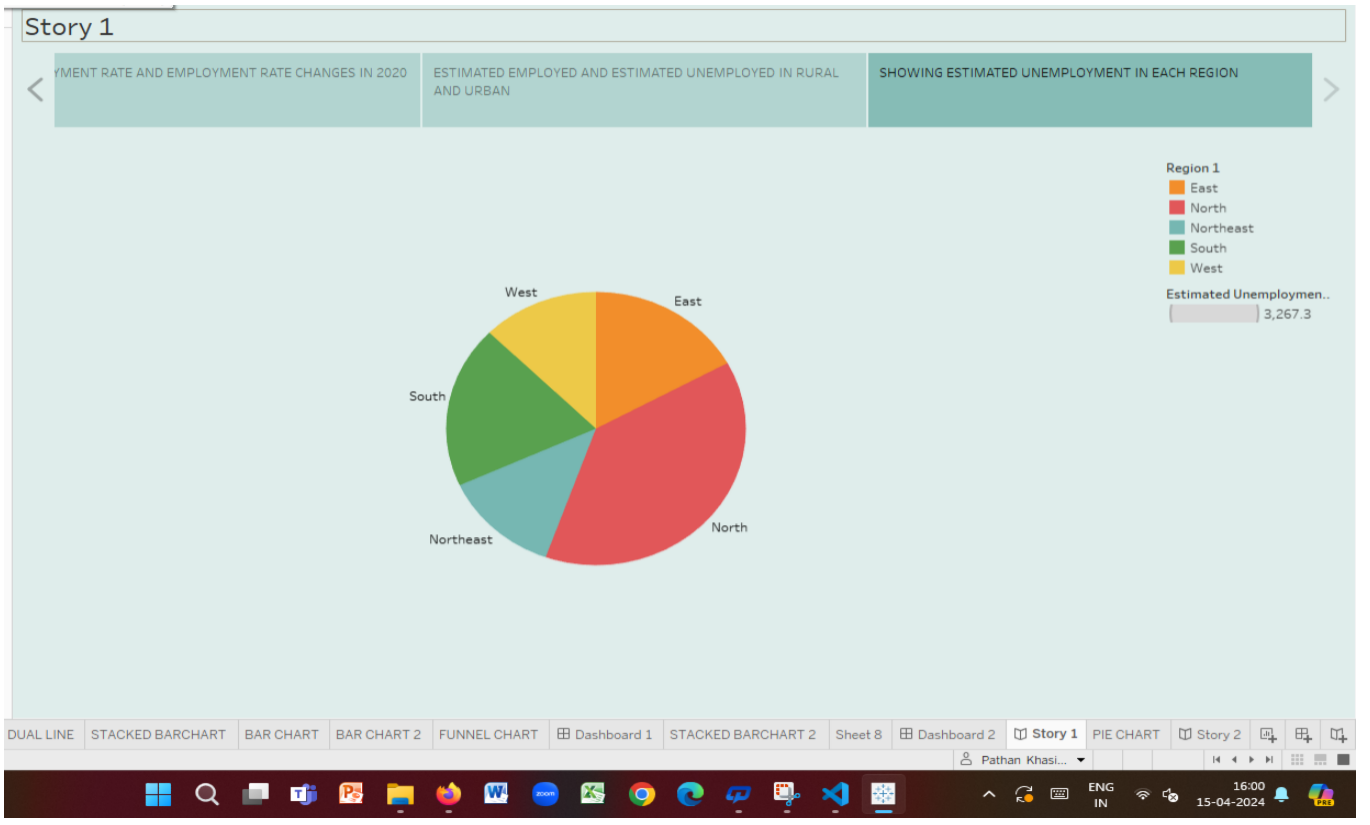
17-04-2024


Story 1
YMENT RATE AND EMPLOYMENT RATE CHANGES IN 2020
ESTIMATED EMPLOYED AND ESTIMATED UNEMPLOYED IN RURAL AND URBAN
SHOWING ESTIMATED UNEMPLOYMENT IN EACH REGION
Region 1
East
North
Northeast
South
West
Estimated Unemploymen..
3,267.3
West
East
South
Northeast
North
DUAL LINE
STACKED BARCHART
BAR CHART
BAR CHART 2
FUNNEL CHART
Dashboard 1
STACKED BARCHART 2
Sheet 8
Dashboard 2
Story 1
PIE CHART
Story 2
Pathan Khasi...
ENG
IN
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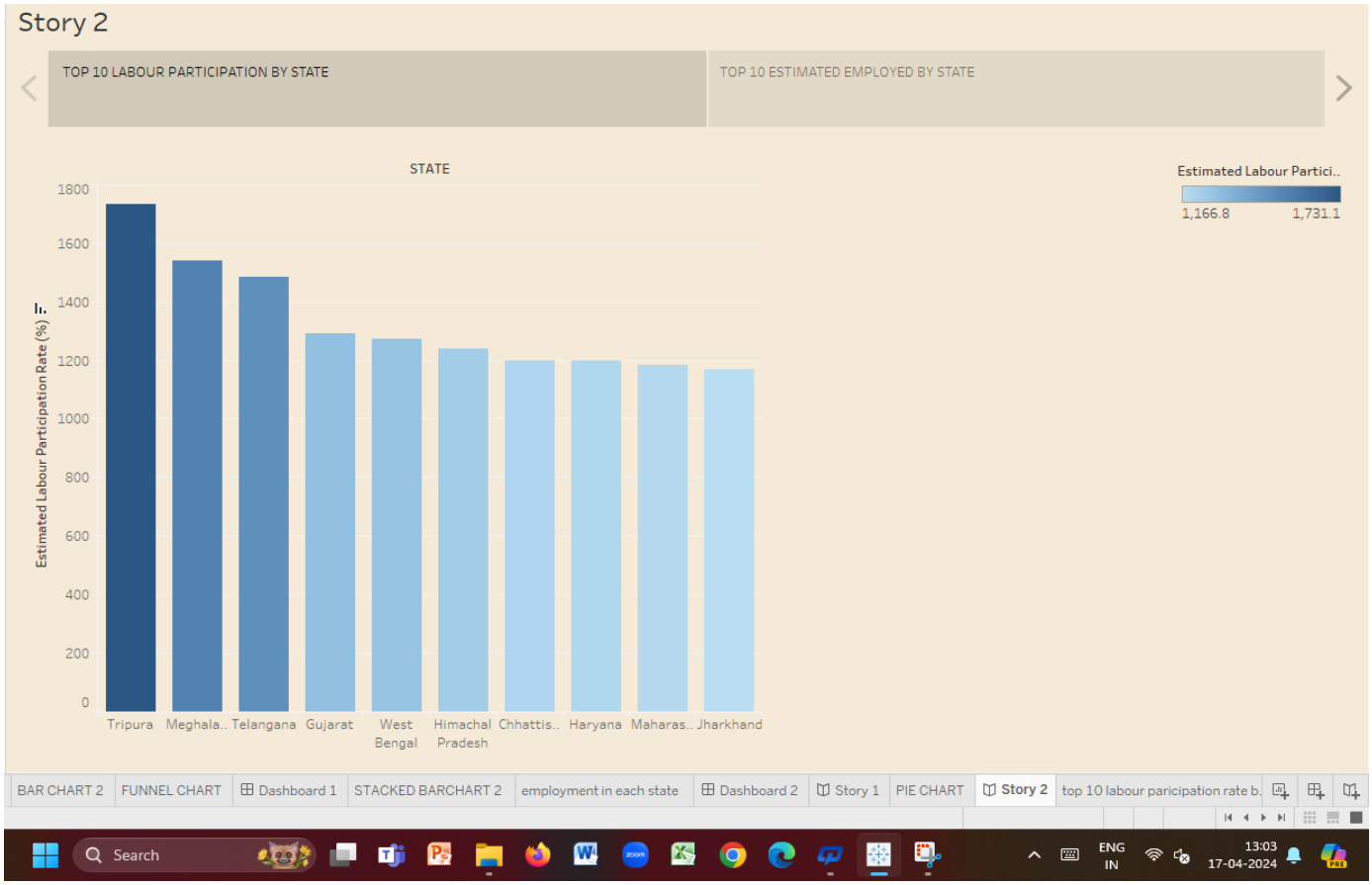
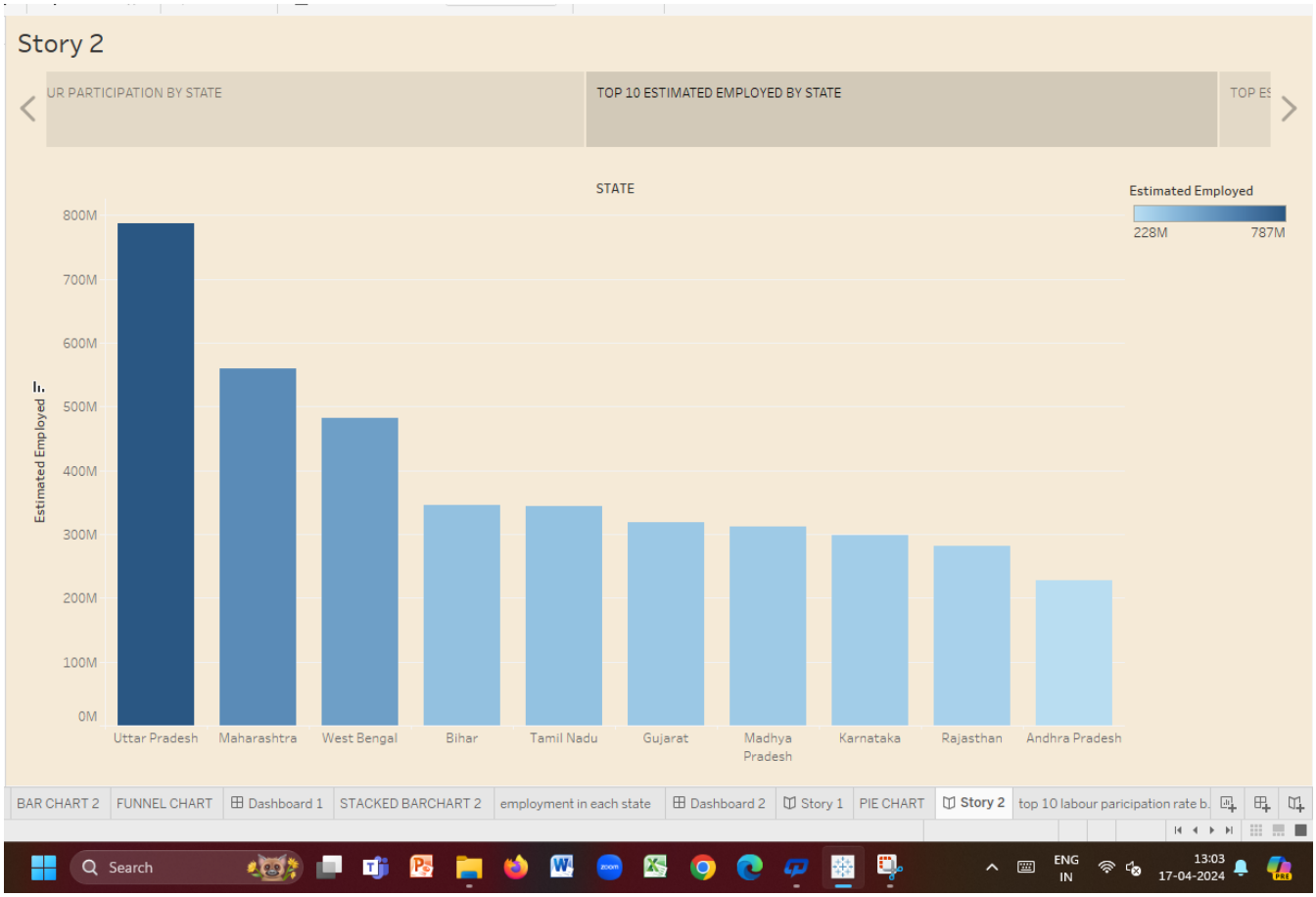
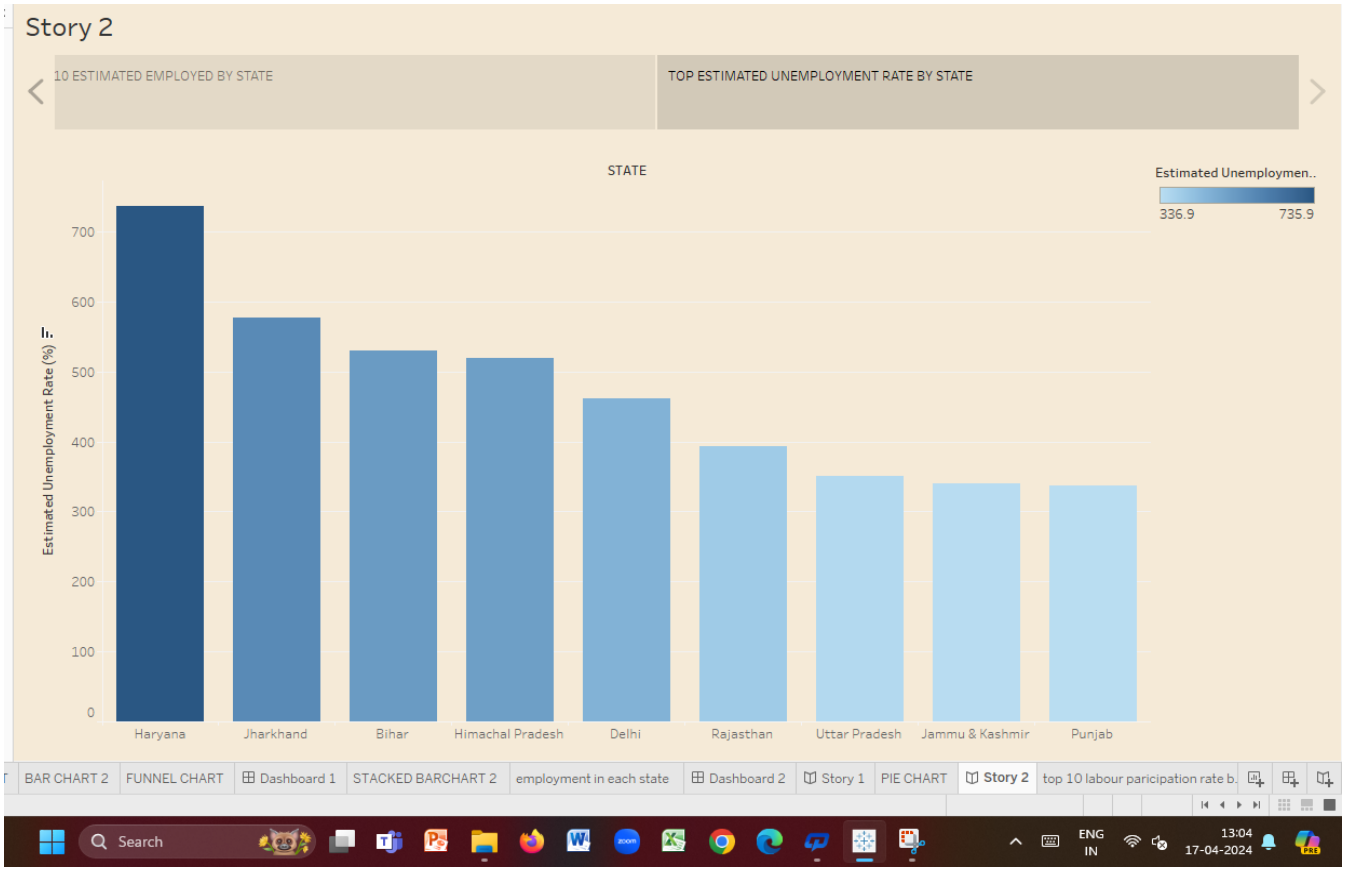
15-04-2024

2nd story


Story 2
TOP 10 LABOUR PARTICIPATION BY STATE
TOP 10 ESTIMATED EMPLOYED BY STATE
STATE
Estimated Labour Partici..
1,166.8
1,731.1
Estimated Labour Participation Rate (%)
1800
1600
1400
1200
1000
800
600
400
200
0
Tripura
Meghala..
Telangana
Gujarat
West Bengal
Himachal Pradesh
Chhattis..
Haryana
Maharas..
Jharkhand
BAR CHART 2
FUNNEL CHART
Dashboard 1
STACKED BARCHART 2
employment in each state
Dashboard 2
Story 1
PIE CHART
Story 2
top 10 labour paricipation rate b.
Search
ENG
IN
13:03
17-04-2024


Story 2
UR PARTICIPATION BY STATE
TOP 10 ESTIMATED EMPLOYED BY STATE
TOP ES
STATE
Estimated Employed
228M
787M
Estimated Employed
800M
700M
600M
500M
400M
300M
200M
100M
0M
Uttar Pradesh
Maharashtra
West Bengal
Bihar
Tamil Nadu
Gujarat
Madhya Pradesh
Karnataka
Rajasthan
Andhra Pradesh
BAR CHART 2
FUNNEL CHART
Dashboard 1
STACKED BARCHART 2
employment in each state
Dashboard 2
Story 1
PIE CHART
Story 2
top 10 labour paricipation rate b.
Search
ENG
IN
13:03
17-04-2024



Milestone 6: Performance Testing

Activity 1: Amount of Data Loaded

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

Fields

Type	Field Name	Phys...	Rem...
Abc	Region (Unemployment Rat...	Unem...	Regio...
	Date (Unemployment Rate u...	Unem...	Date (...
Abc	Frequency (Unemployment ...	Unem...	Frequ...

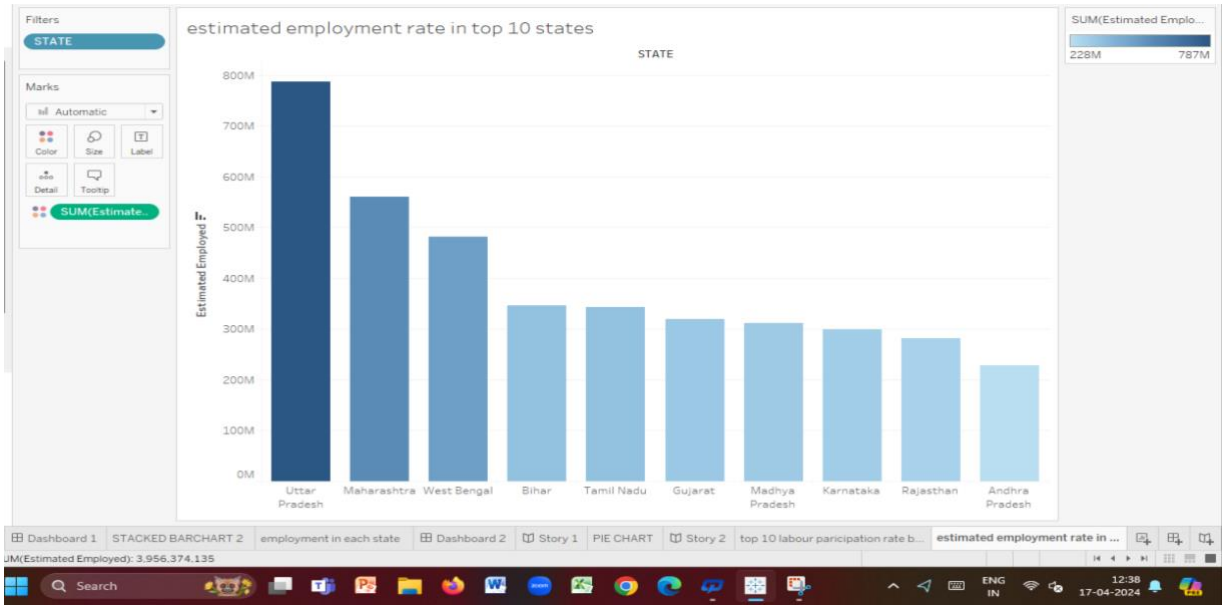
#	Estimated Unemployment R...	Unem...	Estim...
#	Estimated Employed (Unem...	Unem...	Estim...
#	Estimated Labour Participat...	Unem...	Estim...

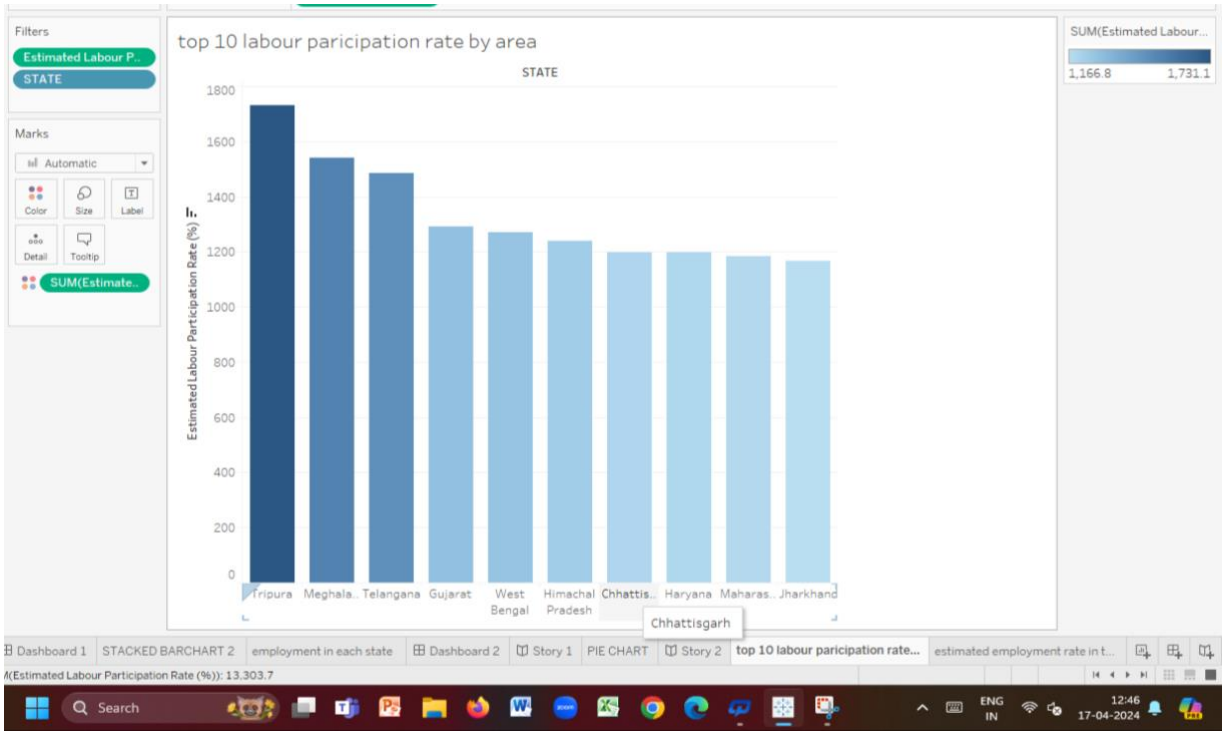
Abc	Region 1	Unem...	Regio...
🌐	Longitude	Unem...	longit...
🌐	Latitude	Unem...	latitude

Activity 2: Utilization of Data Filters

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

Activity 2.1: “Top 10” as a filter


Filters
STATE
Marks
Automatic
Color
Size
Label
Detail
Tooltip
SUM(Estimate..
estimated employment rate in top 10 states
STATE
Estimated Employed
800M
700M
600M
500M
400M
300M
200M
100M
0M
Uttar Pradesh
Maharashtra
West Bengal
Bihar
Tamil Nadu
Gujarat
Madhya Pradesh
Karnataka
Rajasthan
Andhra Pradesh
SUM(Estimated Emplo...
228M
787M
Dashboard 1
STACKED BARCHART 2
employment in each state
Dashboard 2
Story 1
PIE CHART
Story 2
top 10 labour paricipation rate b...
estimated employment rate in ...
UM(Estimated Employed): 3,956,374,135
Search
ENG
IN
12:38
17-04-2024


Filters
Estimated Labour P..
STATE
Marks
Automatic
Color
Size
Label
Detail
Tooltip
SUM(Estimate..
top 10 labour paricipation rate by area
STATE
Estimated Labour Participation Rate (%)
1800
1600
1400
1200
1000
800
600
400
200
0
Tripura
Meghala...
Telangana
Gujarat
West Bengal
Himachal Pradesh
Chhattis...
Haryana
Maharas...
Jharkhand
Chhattisgarh
SUM(Estimated Labour...
1,166.8
1,731.1
Dashboard 1
STACKED BARCHART 2
employment in each state
Dashboard 2
Story 1
PIE CHART
Story 2
top 10 labour paricipation rate...
estimated employment rate in t...
(Estimated Labour Participation Rate (%)): 13,303.7
Search
ENG
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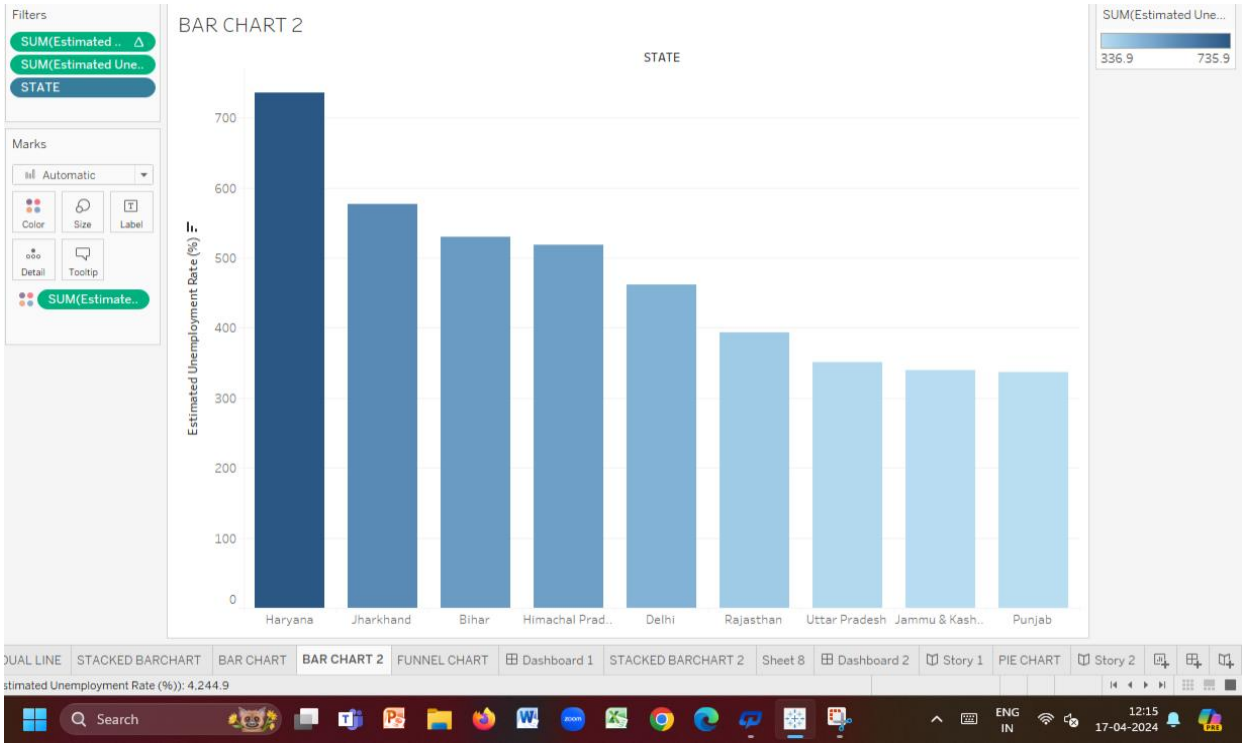
12:46
17-04-2024



Activity 4: No of visualizations/graphs

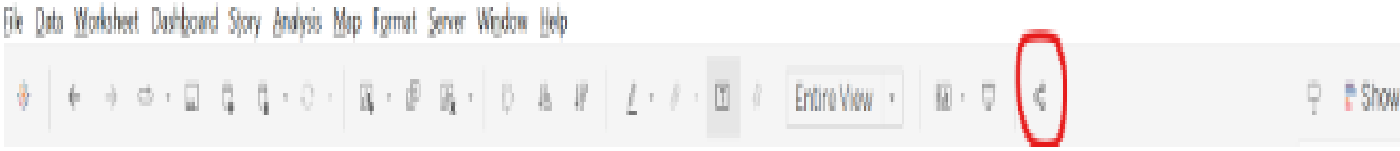
1. **Estimated Unemployment rate in each state**
2. **Estimated Unemployment rate in each month**
3. **Estimated employment and unemployment rate in month of date**
4. **Estimated employment rate in top 10 states**
5. **Estimated employment in each state**
6. **Estimated unemployment rate in each region**
7. **Estimated labour participation, unemployment rate up to 11 2020**
8. **Estimated employment and unemployment in rural and urban**
9. **Top 10 Labour participation rate by area**
10. **Top estimated unemployment rate by state**
11. **Employment and unemployment rate in 2019,2020**
12. **Estimated unemployment rate up to 11 2020 in each region**
13. **Showing estimated employment and unemployment in dual line**
14. **Showing estimated labour participation and unemployment in dual line**

Milestone 7: Web integration

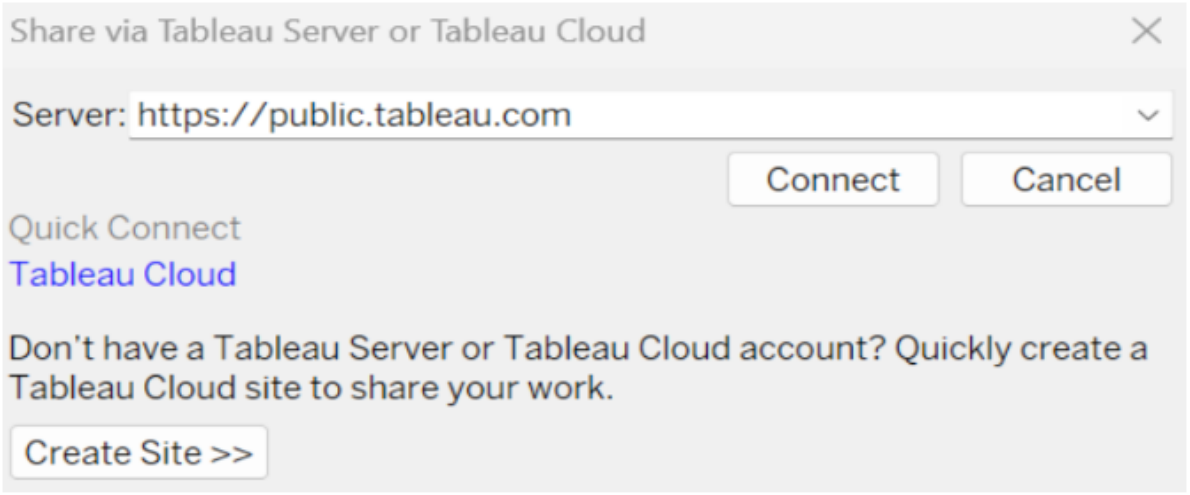
Publishing helps us to track and monitor key performance metrics, to communicate results and progress help a publisher stay informed ,make better decisions, and communicate their performance to others.

Publishing dashboards and stories to tableau public

Step 1: Go to Dashboard/story, click on share button on the top ribbon



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



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

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

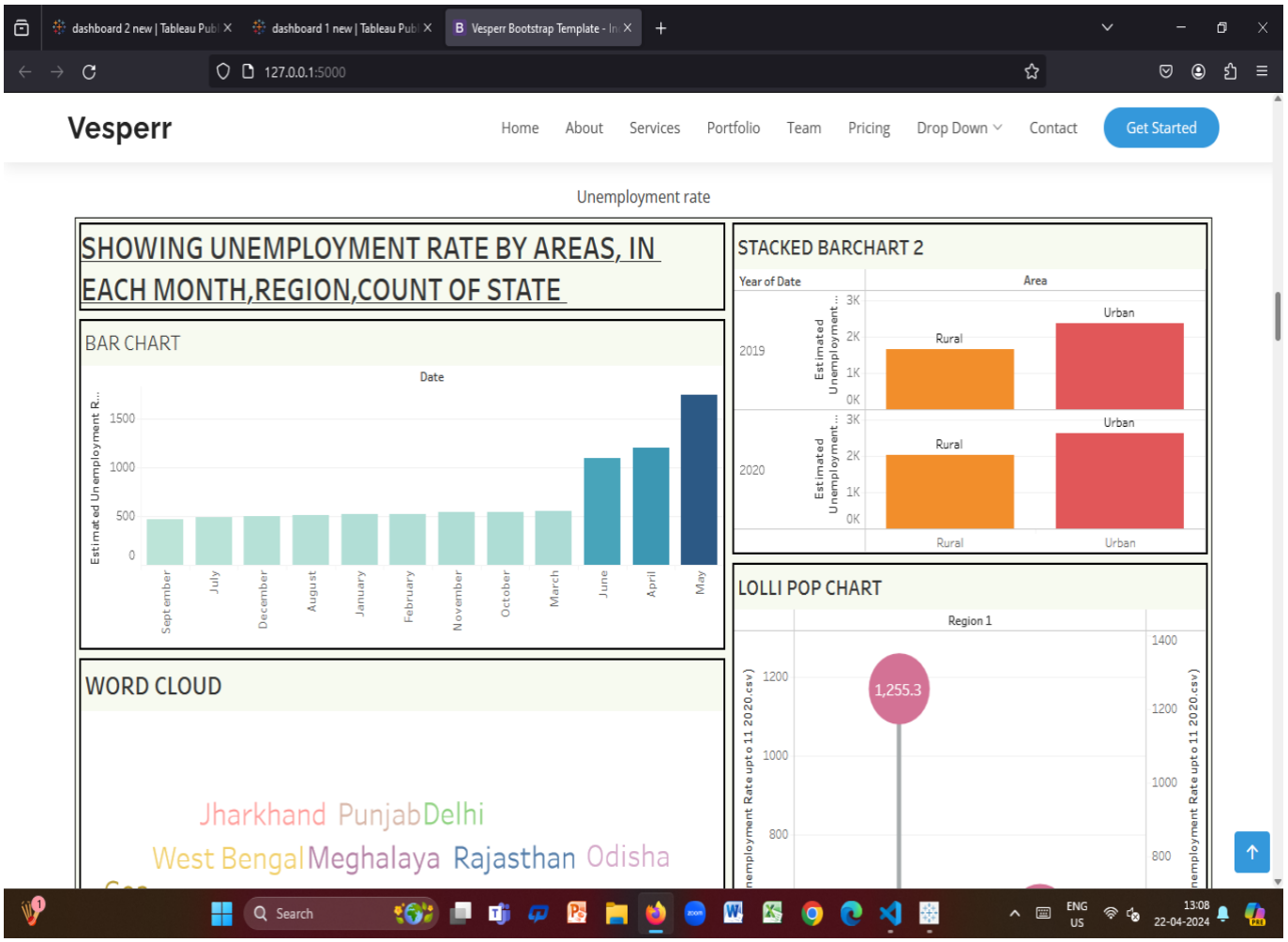
Note: While publishing the visualization to the public, the respective sheet will get published when you click on share option.

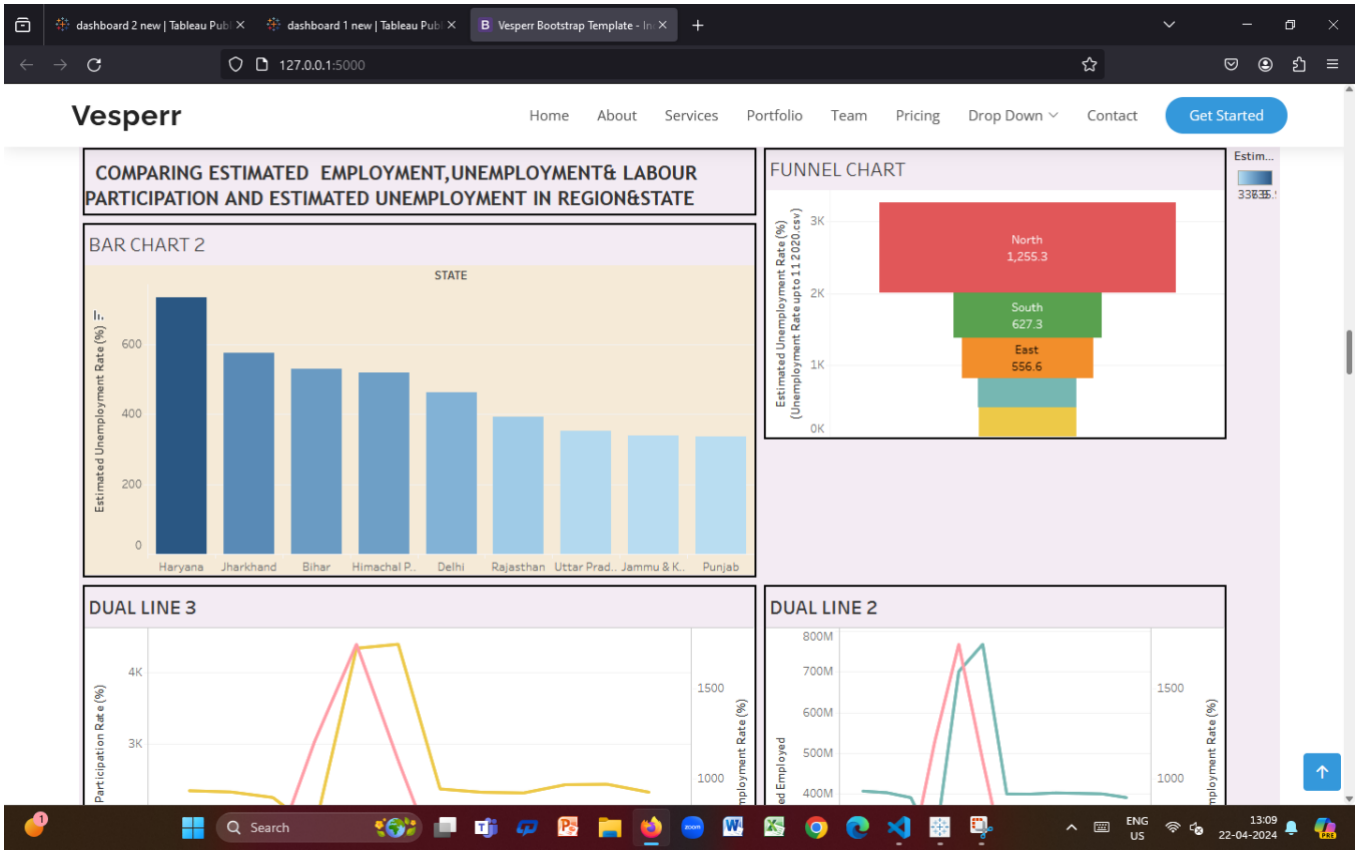
<u>Activity 1: Dashboard and Story embed with UI with Flask</u>

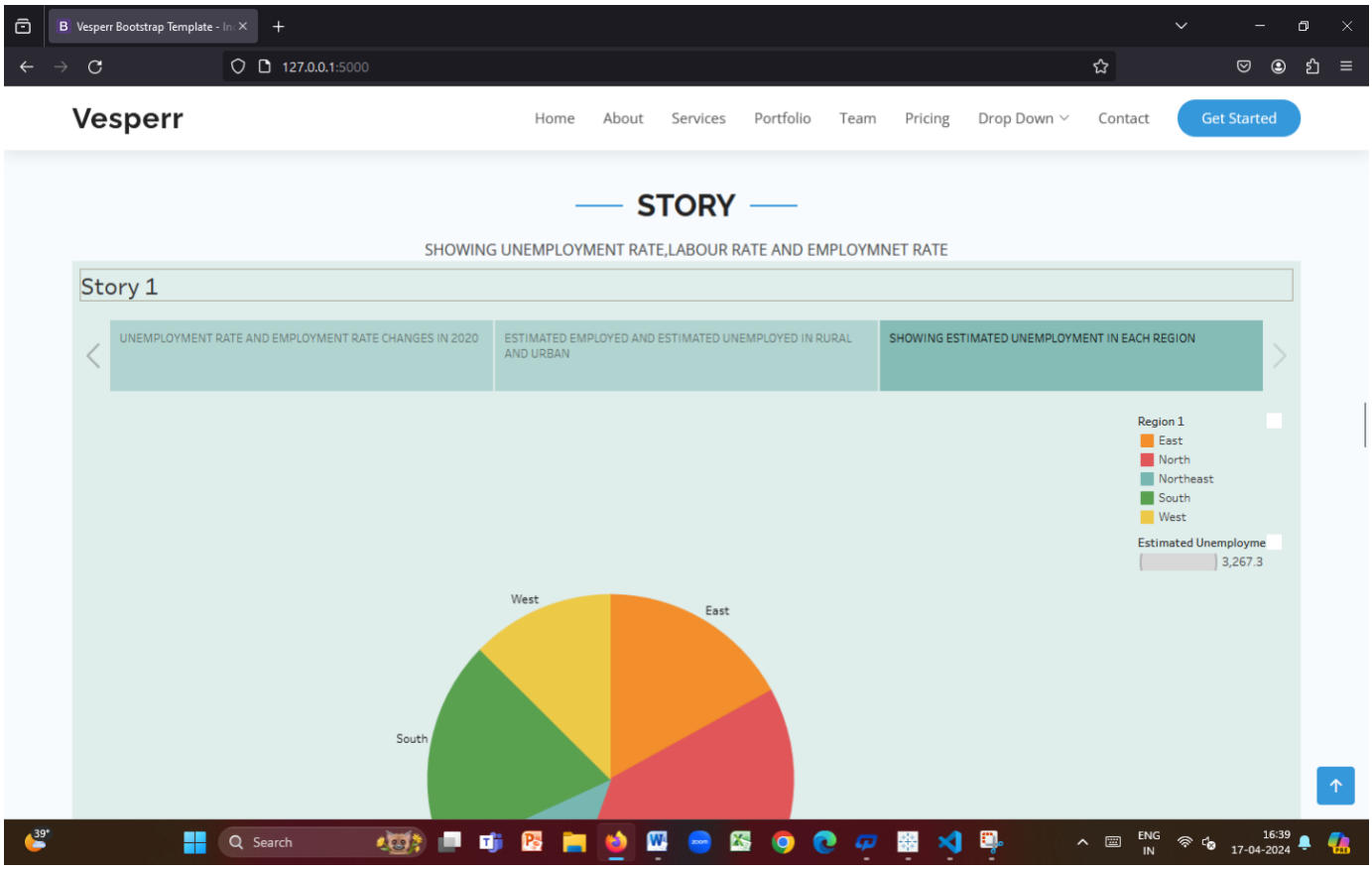
Welcome | flaskfile.py | index.html | style.css

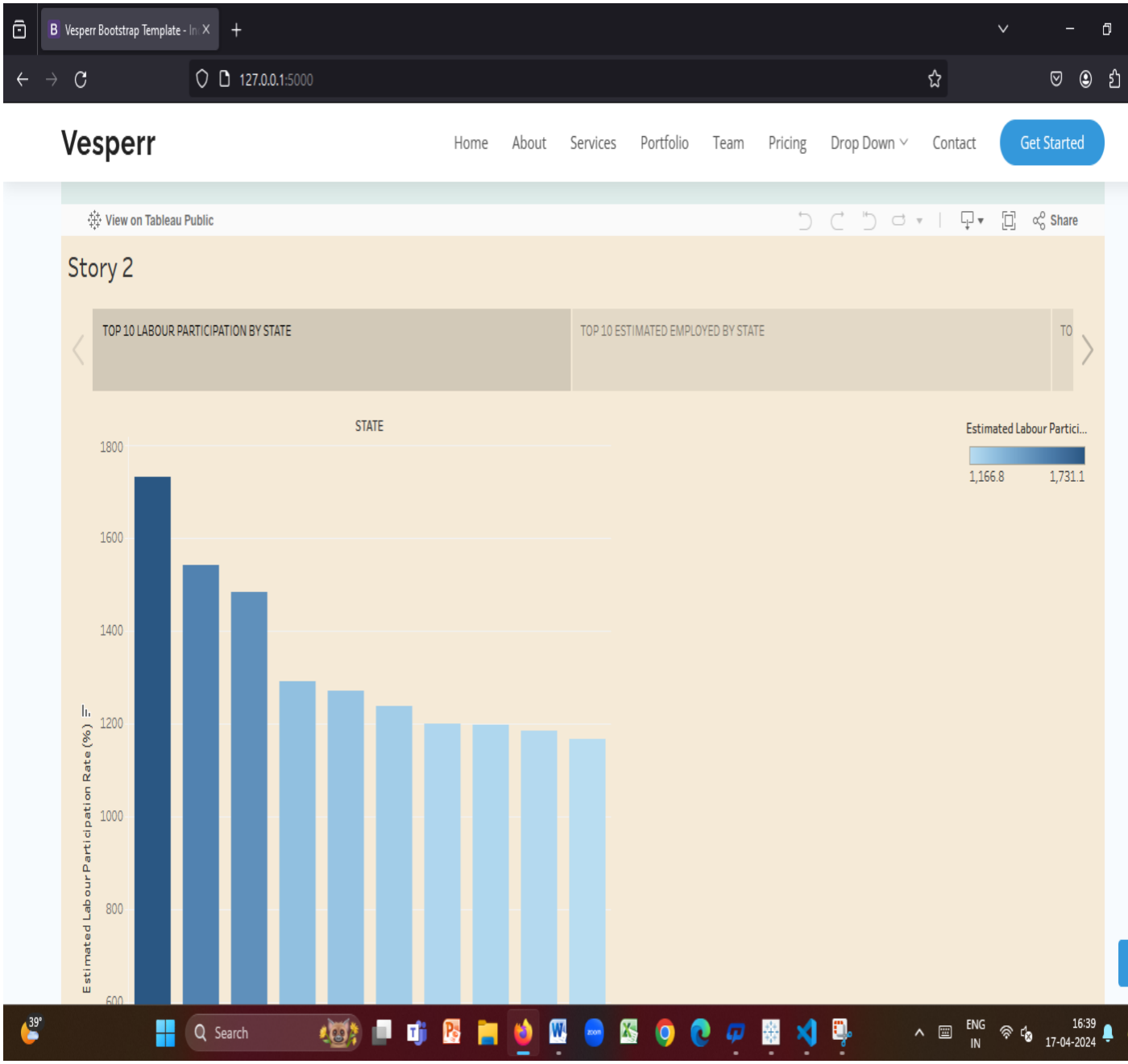
Vesperr (3) > Vesperr > flaskfile.py

```python
from flask  import Flask, render_template
app = Flask(__name__)
@app.route('/')
def hello_world():
    return render_template('index.html')
if __name__=='__main__':
    app.run(debug=True)
```




dashboard 2 new | Tableau Pub
dashboard 1 new | Tableau Pub
Vesperr Bootstrap Template - In
127.0.0.1:5000
Vesperr
Home
About
Services
Portfolio
Team
Pricing
Drop Down
Contact
Get Started
COMPARING ESTIMATED EMPLOYMENT,UNEMPLOYMENT& LABOUR PARTICIPATION AND ESTIMATED UNEMPLOYMENT IN REGION&STATE
BAR CHART 2
STATE
Estimated Unemployment Rate (%)
Haryana
Jharkhand
Bihar
Himachal P..
Delhi
Rajasthan
Uttar Prad..
Jammu & K..
Punjab
FUNNEL CHART
Estimated Unemployment Rate (%) (Unemployment Rate upto 11 2020.csv)
North 1,255.3
South 627.3
East 556.6
DUAL LINE 3
Participation Rate (%)
DUAL LINE 2
Search
ENG US
13:09
22-04-2024


Vesperr Bootstrap Template - In
127.0.0.1:5000
Vesperr
Home
About
Services
Portfolio
Team
Pricing
Drop Down
Contact
Get Started
STORY
SHOWING UNEMPLOYMENT RATE,LABOUR RATE AND EMPLOYMNET RATE
Story 1
UNEMPLOYMENT RATE AND EMPLOYMENT RATE CHANGES IN 2020
ESTIMATED EMPLOYED AND ESTIMATED UNEMPLOYED IN RURAL AND URBAN
SHOWING ESTIMATED UNEMPLOYMENT IN EACH REGION
Region 1
East
North
Northeast
South
West
Estimated Unemployme
3,267.3
West
East
South
Search
ENG IN
16:39
17-04-2024



Milestone 8: Project Documentation

Below mentioned deliverables are submitted along with other deliverables

Project documentation step by step project development procedur