Department of Computer Science &Technology

2021-2022

Micro Project Report

On

"TABLEAU ON STUDENT ADMISSION DATA"

Bachelor of Technology

In

COMPUTER SCIENCE AND ENGINEERING

WITH DATA SCIENCE SPECIALIZATION

By

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UNDER THE GUIDANCE OF

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CONTENTS

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CERTIFICATE

This is to certify that the project entitled "TABLEAU ON STUDENT ADMISSION DATA" has been submitted by - D.Vivek Naga Shiva (20R21A6715), B.Pavitra (20R21A6709), D.Bharath Varma (20R21A6713) and G.Sanjana Reddy (20R21A6726) in the partial fulfillment of the requirements for the award of degree of Bachelor of Technology in Computer Science and Engineering (Data Science) from MLR Institute of Technology, Hyderabad. The results embodied in this project have not been submitted to any other University or Institution for the award of any degree or diploma.

Internal Guide

Head of the Department

External Examiner

DECLARATION

I hereby declare that the project entitled "TABLEAU ON STUDENT ADMISSION DATA" is the work done during the period from September 2021 to February 2022 and is submitted in the partial fulfillment of the requirements for the award of degree of Bachelor of technology in Computer Science and Engineering (Data Science) from MLR Institute of Technology, Hyderabad. The results embodied in this project have not been submitted to any other university or Institution for the award of any degree or diploma.

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First of all I would like to express my deep gratitude towards my internal guide **Mr. P.Srinivas Reddy Asst.Prof,Department of CSE-DS** for his support in the completion of my dissertation. I wish to express my sincere thanks to **Dr. Madhuravani HOD, Department of CSE** and also to principal **Dr. K. Srinivas Rao** for providing the facilities to complete the dissertation.

I would like to thank all our faculty, coordinators and friends for their help and constructive criticism during the project period. Finally, I am very much indebted to our parents for their moral support and encouragement to achieve goals.

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ABSTRACT

Business depends on Data. In the present tech dominated era , we are dealing with massive data. IT teams receive continuous requests from the users regarding issues related to handling data. So, the key objective now is to handle data in an efficient mannerand represent that data in an understandable format. One of the available solutions is using data visualization- an art of presenting the data in a manner that even a non-analyst would understand. The most popular tools for visualizations / data discovery are Qlikview and Tableau. In short, Tableau - helps the people see and understand their data. In this paper we are going to introduce about Tableau and represent an organizational data by using this Tableau, then we will focus on creating views and analysis of data. Now, coming to the student admission data of MLRIT of years (2018,2019,2020) we are going to create visualizations to understand the data in a very simple yet effective way based on gender , EAMCET Rank , Region, Caste, area, branch and other things. Also the data for coming years (2021).

KEYWORDS : Measures, Dimensions, Parameters, Union, Functions, Dashboard, Worksheets, Detail Tab, Labels, Colors, Containers

1. INTRODUCTION

What is Tableau Software?

Software company Founded in 2003 from Stanford research. Intent is to bring 'data to the people' through easy to use data visualization software. Would be classified as a hybrid business intelligence (BI) / analytics software company. Used by many of the largest companies in the world and most large companies in West Michigan.

Tableau is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data in a very easily understandable format. Tableau helps create the data that can be understood by professionals at any level in an organization. It also allows non-technical users to create customized dashboards.
Data analysis is very fast with Tableau tool and the visualizations created are in the form of dashboards and worksheets.

The best features of Tableau software are

- Data Blending
- Real time analysis
- Collaboration of data

The great thing about Tableau software is that it doesn't require any technical or any kind of programming skills to operate. The tool has garnered interest among the people from all sectors such as business, researchers, different industries, etc.

2. Tableau Product Suite

The Tableau Product Suite consists of

- Tableau Desktop
- Tableau Public
- Tableau Online
- Tableau Server
- Tableau Reader

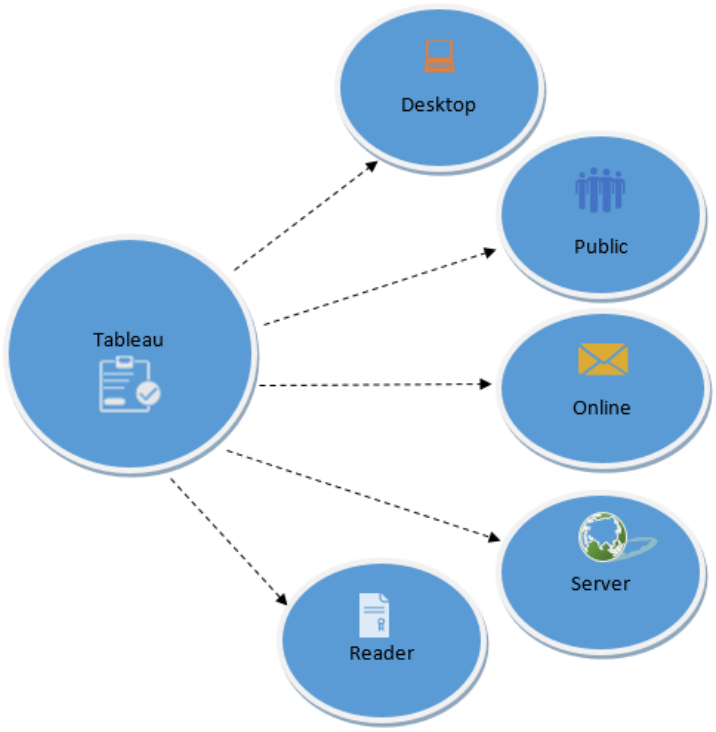


Tableau Product Suite

For a clear understanding, data analytics in Tableau tool can be classified into two section.

1. **Developer Tools:** The Tableau tools that are used for development such as the creation of dashboards, charts, report generation, visualization fall into this category. The Tableau products, under this category, are the Tableau Desktop and the Tableau Public.
2. **Sharing Tools:** As the name suggests, the purpose of these Tableau products is sharing the visualizations, reports, dashboards that were created using the developer tools. Products that fall into this category are Tableau Online, Server, and Reader.

Let's study all the Tableau products one by one.

2.1. Tableau Desktop

Tableau Desktop has a rich feature set and allows you to code and customize reports. Right from creating the charts, reports, to blending them all together to form a dashboard, all the necessary work is created in Tableau Desktop.

For live data analysis, Tableau Desktop provides connectivity to Data Warehouse, as well as other various types of files. The workbooks and the dashboards created here can be either shared locally or publicly.

Based on the connectivity to the data sources and publishing option, Tableau Desktop is classified into

- **Tableau Desktop Personal:** The development features are similar to Tableau Desktop. Personal version keeps the workbook private, and the access is limited. The workbooks cannot be published online. Therefore, it should be distributed either Offline or in Tableau Public.
- **Tableau Desktop Professional:** It is pretty much similar to Tableau Desktop. The difference is that the work created in the Tableau Desktop can be published online or in Tableau Server. Also, in Professional version, there is full access to all sorts of the datatype. It is best suitable for those who wish to publish their work in Tableau Server.

2.2. Tableau Public

It is Tableau version specially build for the cost-effective users. By the word "Public," it means that the workbooks created cannot be saved locally; in turn, it

should be saved to the Tableau's public cloud which can be viewed and accessed by anyone.

There is no privacy to the files saved to the cloud since anyone can download and access the same. This version is the best for the individuals who want to learn Tableau and for the ones who want to share their data with the general public.

2.3. Tableau Server

The software is specifically used to share the workbooks, visualizations that are created in the Tableau Desktop application across the organization. To share dashboards in the Tableau Server, you must first publish your work in the Tableau Desktop. Once the work has been uploaded to the server, it will be accessible only to the licensed users.

However, It's not necessary that the licensed users need to have the Tableau Server installed on their machine. They just require the login credentials with which they can check reports via a web browser. The security is high in Tableau server, and it is much suited for quick and effective sharing of data in an organization.

The admin of the organization will always have full control over the server. The hardware and the software are maintained by the organization.

2.4. Tableau Online

As the name suggests, it is an online sharing tool of Tableau. Its functionalities are similar to Tableau Server, but the data is stored on servers hosted in the cloud which are maintained by the Tableau group.

There is no storage limit on the data that can be published in the Tableau Online. Tableau Online creates a direct link to over 40 data sources that are hosted in the cloud such as the MySQL, Hive, Amazon Aurora, Spark SQL and many more.

To publish, both Tableau Online and Server require the workbooks created by Tableau Desktop. Data that is streamed from the web applications say Google Analytics, Salesforce.com are also supported by Tableau Server and Tableau Online.

2.5. Tableau Reader

Tableau Reader is a free tool which allows you to view the workbooks and visualizations created using Tableau Desktop or Tableau Public. The data can be

filtered but editing and modifications are restricted. The security level is zero in Tableau Reader as anyone who gets the workbook can view it using Tableau Reader.

If you want to share the dashboards that you have created, the receiver should have Tableau Reader to view the document.

3. How does Tableau work?

Tableau connects and extracts the data stored in various places. It can pull data from any platform imaginable. A simple database such as an excel, pdf, to a complex database like Oracle, a database in the cloud such as Amazon webs services, Microsoft Azure SQL database, Google Cloud SQL and various other data sources can be extracted by Tableau.

When Tableau is launched, ready data connectors are available which allows you to connect to any database. Depending on the version of Tableau that you have purchased the number of data connectors supported by Tableau will vary.

The pulled data can be either connected live or extracted to the Tableau's data engine, Tableau Desktop. This is where the Data analyst, data engineer work with the data that was pulled up and develop visualizations. The created dashboards are shared with the users as a static file. The users who receive the dashboards views the file using Tableau Reader.

The data from the Tableau Desktop can be published to the Tableau server. This is an enterprise platform where collaboration, distribution, governance, security model, automation features are supported. With the Tableau server, the end users have a better experience in accessing the files from all locations be it a desktop, mobile or email.

3.1. Tableau Uses

Following are the main uses and applications of Tableau:

- Business Intelligence
- Data Visualization
- Data Collaboration
- Data Blending
- Real-time data analysis

- Query translation into visualization
- To import large size of data
- To create no-code data queries
- To manage large size metadata

3.2. Excel Vs. Tableau

Both Excel and Tableau are data analysis tools, but each tool has its unique approach to data exploration. However, the analysis in Tableau is more potent than excel.

Excel works with rows and columns in spreadsheets whereas Tableau enables in exploring excel data using its drag and drop feature. Tableau formats the data in Graphs, pictures that are easily understandable.

To conclude, Tableau beats Excel in major areas like the interactive dashboards, visualizations, capabilities to work with large-scale data and many more.

4. Hardware & Software Requirements

The following minimum hardware requirements and recommendations apply to all computers running Tableau Server, including physical hardware and virtual machines (VMs):

- **Minimum requirements for installation** reflect the minimum hardware your computer must have in order to install Tableau Server. We do not recommend you attempt run Tableau Server on servers with these values, even if you are just testing. Depending the features you have licensed and are using, you may experience poor performance and an unrealistic experience. In certain cases Tableau Server may not start without at least 20GB of memory.

  For prototyping and Proof of Concept (PoC) testing, we recommend you use Tableau Online. This will give you an opportunity to experience Tableau Server on appropriately sized hardware.

- **Minimum recommendations for production** go beyond minimum installation requirements, and represent the minimum hardware configuration you should use for installation on most production nodes. If your computer meets the minimum installation requirements but does not meet these recommendations, the Setup program will warn you but you can continue the installation. For certain nodes dedicated to specific tasks and processes such as backgrounder, or Prep, you may be able to use servers that do not meet this minimum recommendation.

In addition, Tableau Server should not be installed on a physical computer or on a VM instance that is also running resource-intensive applications such as databases or application servers.

Tableau Server is a scalable system that is capable of meeting the demands of the most intense enterprise environments. Proper planning is an important first step before you settle on to the appropriate hardware configuration and licensing options. At a minimum, you should consider the following details when planning your deployment: User count**, User** concurrency rate, Workbook complexity, User locations, Database locations, Database size and Extract usage-number and size.

5. Tableau Server's Architecture

Tableau has a highly scalable, n-tier client-server architecture that serves mobile clients, web clients, and desktop-installed software. Tableau Server architecture supports fast and flexible deployments.

The following diagram shows the Tableau Server's architecture:

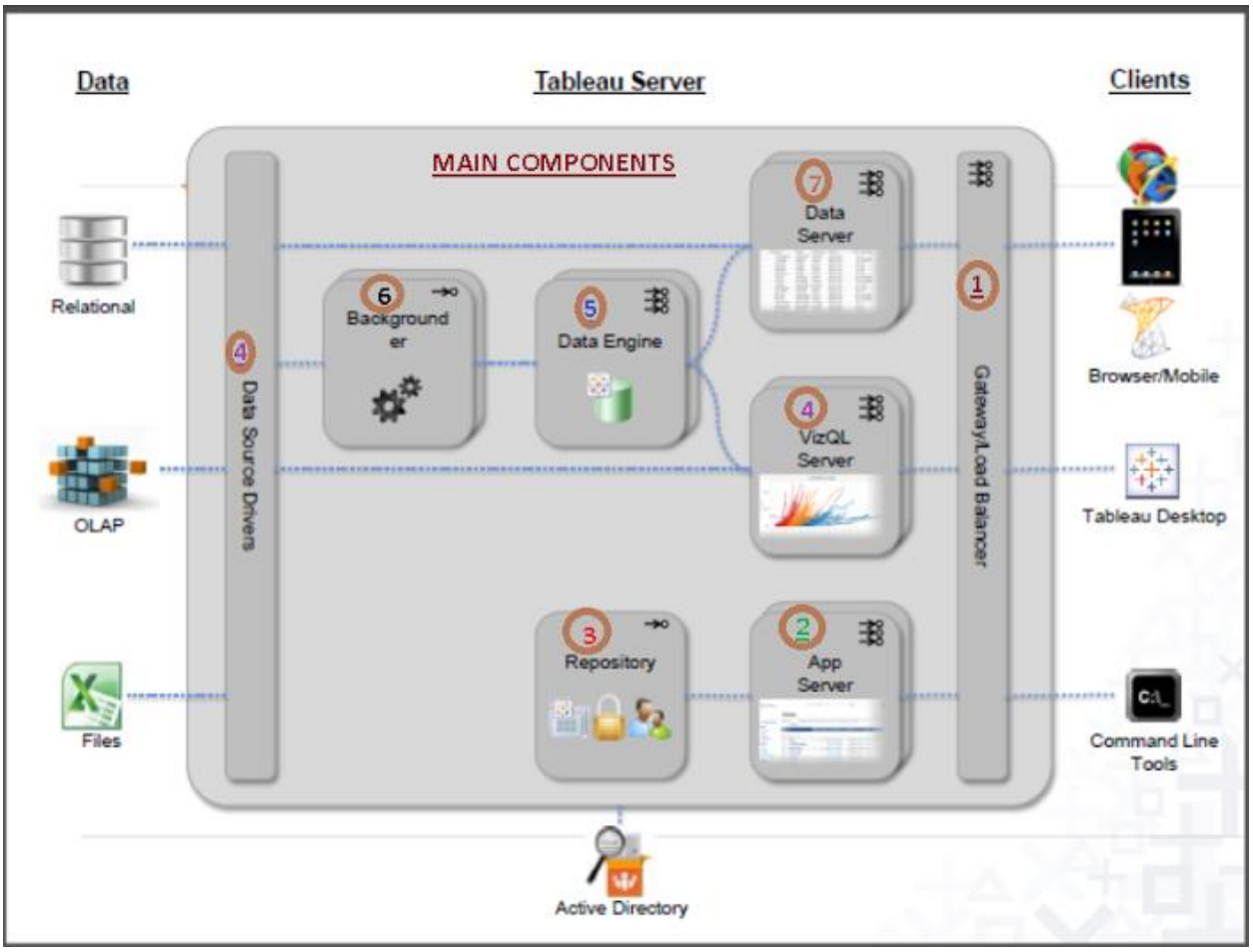


Tableau server is comprised of several processes operating together. These may run concurrently, but typically all processes won't be running all of the time, these include:

- Application server (wg server.exe)
- VizQL server (vizql server.exe)

- Data engine (tde server.exe, tde server64.exe)
- Back grounder (back grounder.exe)
- Data server (data server.exe)
- Repository (postgres. Exe)

The application server handles requests to the web application such as searching, browsing, logging in, generating static images, and managing subscriptions. The vizQL server handles the task of loading and rendering requested views. The data engine receives queries made to Tableau data extracts present on the server. These queries come from the vizQL processes. To service these queries, the data engine loads the tableau data extract into memory and returns the requested record set. The backgrounder runs maintenance tasks and data extract refreshes. The data server handles requests to Tableau data sources. These requests can come from the tableau server or from tableau desktop users. The repository is the Postgres database tableau server used to store settings, metadata, usage statistics, and workbooks.

With the notable exception of the data engine, all of these processes are 32-bit processors. The data engine has a 64-bit architecture that is detected. All processes except the backgrounder are multi-threaded.

5.1. Sizing the server hardware

Tableau server runs well within a variety of hardware configurations. It can be deployed for small organizations with a relatively inexpensive single system. It can also be deployed for large organizations with thousands of users in clusters containing many powerful machines. You get what you pay for in terms of performance from hardware expenditures. The current minimum recommended hardware configuration for a tableau server is a single machine with 32-gigabytes of memory and 8-CPU cores.

Specific recommendations regarding the size and configuration of your deployment are affected by many factors, including the complexity and size of the dashboards, the data sources, the timing and frequency of usage, the network, and the hardware configuration running the software. For these reasons, specific

benchmarks are not provided. Consult with tableau software's technical staff or a qualified tableau software partner to obtain specific recommendations.

As your deployment grows, you can expand capacity by scaling up to a more powerful single server, or by splitting the increased demand across multiple physical servers.

5.2. A scale-up scenario

To scale the tableau server upon a single system, choose a platform that can provide more physical CPU cores and more system memory. At this time, major hardware manufacturers are shipping servers that support up to 32 physical CPU cores and far more memory than tableau server requires. The above ratio of CPU cores to system memory (1-CPU to 4-GB memory) is a good general guideline to follow-plan for more memory when the use of very large tableau data extracts is expected. The data engine will hold data extracts in memory if possible. This improves query performance.

Disk performance is a secondary consideration while planning for tableau servers in most cases. The major exception is situations, in which there is heavy use of the data engine with extracts that will not fit into memory. In this case, the data engine is forced to go to disk frequently-making faster i/o potentially worthwhile. Otherwise, even with heavy use of the data engine, the tableau server does not benefit a great deal from more exotic i/o setups, such as arrays of solid-state drives (SSD).

An example of a scale-up configuration for a tableau server is a single machine with 24-CPU cores and 96-GB of memory. Based on the current tableau server scalability tests, it's expected that this server could handle somewhere between 108 and 378 concurrent requests depending on workbook complexity.

5.3. A scale-out scenario

To scale the tableau server out, multiple servers will need to be provisioned and the server processes will be split across them. In this case, the servers are not required to be configured identically. It is a common pattern to tailor each machine in a cluster to the process running on it. Deploying Tableau Server on multiple servers will be discussed in greater detail later in this chapter in the section on high availability Environments.

An example of a scale-out configuration for a tableau server is a cluster consisting of three machines each configured worth 8-CPU cores and 32-GB of memory. This configuration will provide a slightly lower performance than the sample scale-up configuration due to the server communication overhead introduced by the cluster. A fourth machine can be used to run the gateway server. If this is done, any machine running gateway services exclusively is not counted against the tableau server core license.

Regardless of planning to scale up or scale out, if you decide to purchase under the core-license model you need to determine the number of cores that you'll require to purchase. Do this by counting the number of physical cores across all of the machines that will be running tableau server processes excluding servers that are running gateway services only.

5.4. Environmental factors that can affect performance

Every server environment is unique, and there are many variables that can impact performance.
Variables affecting performance include:

- Hardware details, such as disk speed, memory, and processor cores
- The number of servers in your deployment
- Network traffic
- Usage factors such as workbook complexity, concurrent user activity, and data caching
- Tableau Server configuration settings, such as how many of each server process you're running
- Data considerations—such as data volume, database type, and database configuration.

Tableau Server is highly configurable to help you address these variables in your server environment and fine-tune server performance. Because of this complexity, there is no single formula for improving server performance.

5.5. Network performance

Users will be connecting to the tableau server either through an internal network or via the public internet. Any poor-performing network links in between users and the tableau server can cause erratic behavior of dashboards. Slow loading internal networks are not normally a problem. Spotty internet connections are a common cause of long dashboard load times. If you do experience slow connection speeds, the best solution is to increase the available bandwidth of the connection.

5.6. Browser

The user experience of the tableau server is heavily dependent on Javascript. As such, some browsers can cause tableau servers to feel unresponsive or sluggish because of their sub-par Javascript performance. Internet Explorer 7 is a major offender in this case. Chrome, Firefox, Safari and modern versions of internet explorer all have superior Java script performance. Tableau strives to deliver the same experience on all browsers; however, each browser renders web pages differently. If it frequently takes a few clicks to get a quick filter drop-down selection to apply, you might be running into a browser performance issue.

Client-side rendering is supported in Firefox, Chrome, Safari, and Internet Explorer 9.0 and later versions. All of these web browsers include the HTML 5 element, which is used by client-side rendering and will improve performance.

5.7. Resource contention

Tableau server will not perform well in environments with other resource-hungry applications and services running on the same machine. Resource contention can cause slowness in each component process of the tableau server. To get the most out of your tableau server license expenditure, ensure that the tableau server is the only application running on the machine (s).

6. Implementation

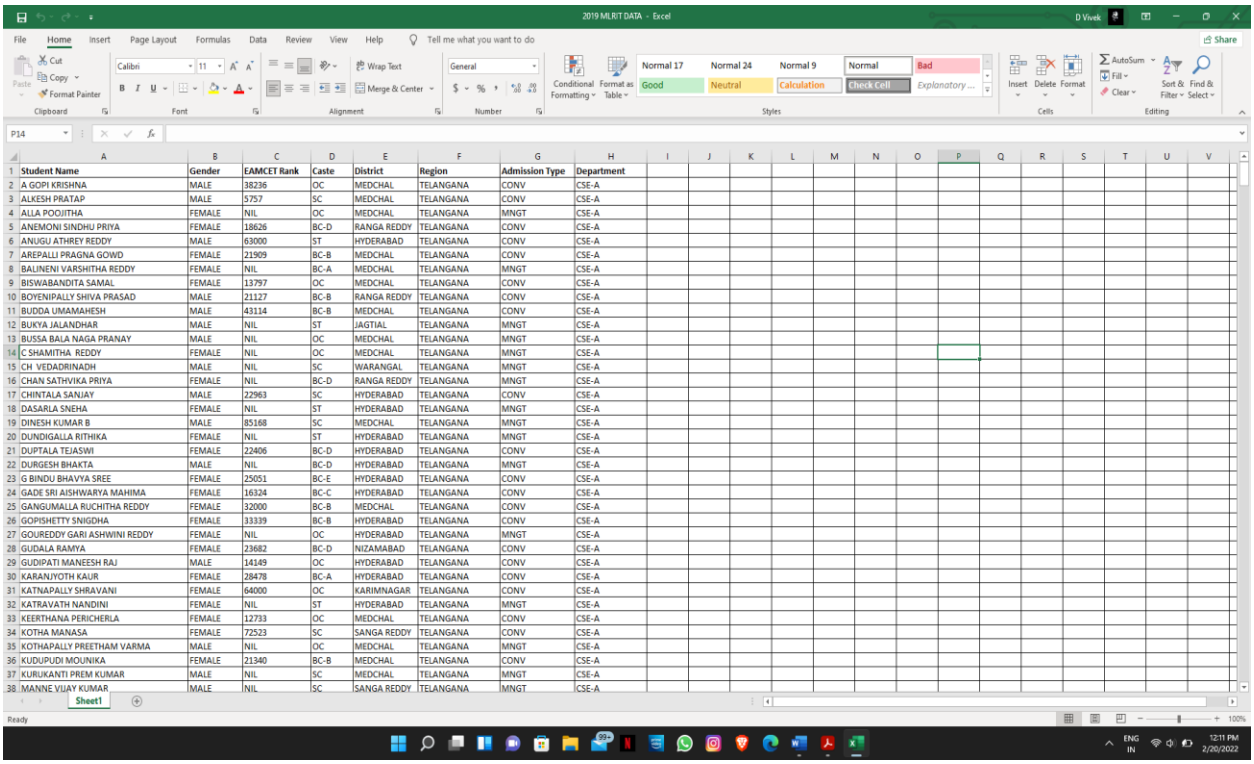
Make the connection and set up the data source

1. After you open Tableau, under **Connect**, click **Excel**.
2. Select the Excel workbook you want to connect to, and then click **Open**.

Microsoft Excel data source

The following is a Microsoft Excel data source.

Excel Data Overview



Student Name	Gender	EAMCET Rank	Caste	District	Region	Admission Type	Department
A GOPI KRISHNA	MALE	38236	OC	MEDCHAL	TELANGANA	CONV	CSE-A
ALKESH PRATAP	MALE	5757	SC	MEDCHAL	TELANGANA	CONV	CSE-A
ALLA POOJITHA	FEMALE	NIL	OC	MEDCHAL	TELANGANA	MNGT	CSE-A
ANEMONI SINDHU PRIYA	FEMALE	18626	BC-D	RANGA REDDY	TELANGANA	CONV	CSE-A
ANUGU ATHREY REDDY	MALE	63000	ST	HYDERABAD	TELANGANA	CONV	CSE-A
AREPALLI PRAGNA GOWD	FEMALE	21909	BC-B	MEDCHAL	TELANGANA	CONV	CSE-A
BALINENI VARSHITHA REDDY	FEMALE	NIL	BC-A	MEDCHAL	TELANGANA	MNGT	CSE-A
BISWABANDITA SAMAL	FEMALE	13797	OC	MEDCHAL	TELANGANA	CONV	CSE-A
BOYENIPALLY SHIVA PRASAD	MALE	21127	BC-B	RANGA REDDY	TELANGANA	CONV	CSE-A
BUDDA UMAMAHESH	MALE	43114	BC-B	MEDCHAL	TELANGANA	CONV	CSE-A
BUKYA JALANDHAR	MALE	NIL	ST	JAGTIAL	TELANGANA	MNGT	CSE-A
BUSSA BALA NAGA PRANAY	MALE	NIL	OC	MEDCHAL	TELANGANA	MNGT	CSE-A
C SHAMITHA REDDY	FEMALE	NIL	OC	MEDCHAL	TELANGANA	MNGT	CSE-A
CH VEDADRINADH	MALE	NIL	SC	WARANGAL	TELANGANA	MNGT	CSE-A
CHAN SATHVIKA PRIYA	FEMALE	NIL	BC-D	RANGA REDDY	TELANGANA	MNGT	CSE-A
CHINTALA SANJAY	MALE	22963	SC	HYDERABAD	TELANGANA	CONV	CSE-A
DASARLA SNEHA	FEMALE	NIL	ST	HYDERABAD	TELANGANA	MNGT	CSE-A
DINESH KUMAR B	MALE	85168	SC	MEDCHAL	TELANGANA	MNGT	CSE-A
DUNDIGALLA RITHIKA	FEMALE	NIL	ST	HYDERABAD	TELANGANA	MNGT	CSE-A
DUPTALA TEJASWI	FEMALE	22406	BC-D	HYDERABAD	TELANGANA	CONV	CSE-A
DURGESH BHAKTA	MALE	NIL	BC-D	HYDERABAD	TELANGANA	MNGT	CSE-A
G BINDU BHAVYA SREE	FEMALE	25051	BC-E	HYDERABAD	TELANGANA	CONV	CSE-A
GADE SRI AISHWARYA MAHIMA	FEMALE	16324	BC-C	HYDERABAD	TELANGANA	CONV	CSE-A
GANGUMALLA RUCHITHA REDDY	FEMALE	32000	BC-B	MEDCHAL	TELANGANA	CONV	CSE-A
GOPISHETTY SNIGDHA	FEMALE	33339	BC-B	HYDERABAD	TELANGANA	CONV	CSE-A
GOUREDDY GARI ASHWINI REDDY	FEMALE	NIL	OC	HYDERABAD	TELANGANA	MNGT	CSE-A
GUDALA RAMYA	FEMALE	23682	BC-D	NIZAMABAD	TELANGANA	CONV	CSE-A
GUDIPATI MANEESH RAJ	MALE	14149	OC	HYDERABAD	TELANGANA	CONV	CSE-A
KARANJYOTH KAUR	FEMALE	28478	BC-A	HYDERABAD	TELANGANA	CONV	CSE-A
KATNAPALLY SHRAVANI	FEMALE	64000	OC	KARIMNAGAR	TELANGANA	CONV	CSE-A
KATRAVATH NANDINI	FEMALE	NIL	ST	HYDERABAD	TELANGANA	MNGT	CSE-A
KEERTHANA PERICHERLA	FEMALE	12733	OC	MEDCHAL	TELANGANA	CONV	CSE-A
KOTHA MANASA	FEMALE	72523	SC	SANGA REDDY	TELANGANA	CONV	CSE-A
KOTHAPALLY PREETHAM VARMA	MALE	NIL	OC	MEDCHAL	TELANGANA	MNGT	CSE-A
KUDUPUDI MOUNIKA	FEMALE	21340	BC-B	MEDCHAL	TELANGANA	CONV	CSE-A
KURUKANTI PREM KUMAR	MALE	NIL	SC	MEDCHAL	TELANGANA	MNGT	CSE-A
MANNE VIJAY KUMAR	MALE	NIL	SC	SANGA REDDY	TELANGANA	MNGT	CSE-A

Note: If the Excel file contains columns that are more than 254 characters wide, Tableau Desktop can't use these fields for workbooks that were created before Tableau Desktop 8.2. Also, you cannot use the legacy connection to connect to this data. Either remove the columns, modify them to fit within 254 characters prior to connecting in Tableau Desktop, or upgrade the Excel data source. For more information about upgrading data sources, see Upgrade Data Sources.

Get more data

Get more data into your data source by adding more tables or connecting to data in a different database.

- **Add more data from the current file:** From the left pane, drag additional tables to the canvas to combine data using a join or union. For more information, see Join Your Data or Union Your Data.

- **Add more data from different databases:** In the left pane, click **Add** next to Connections. For more information, see Join Your Data.

  If a connector you want is not listed in the left pane, select **Data** > **New Data Source** to add a new data source. For more information, see Blend Your Data.

Set Excel table options

Excel table options are scoped to the connection. To change the table options, on the canvas, click the table drop-down arrow and then specify whether the data includes field names in the first row. If so, these names will become the field names in Tableau. If field names are not included, Tableau generates them automatically. You can rename the fields later.

Use Data Interpreter to clean your data

If Tableau detects that it can help optimize your data source for analysis, it prompts you to use Data Interpreter. Data Interpreter can detect sub-tables that you can use and remove unique formatting that might cause problems later on in your analysis. For more information, see Clean Data from Excel, CSV, PDF, and Google Sheets with Data Interpreter.

About .ttde and .hhyper files

You might notice .ttde or .hhyper files when navigating your computer's directory. When you create a Tableau data source that connects to your data, Tableau creates a .ttde or .hhyper file. This file, also known as a shadow extract, is used to help improve the speed your data source loads in Tableau Desktop. Although a shadow extract contains underlying data and other information similar to the standard

Tableau extract, a shadow extract is saved in a different format and can't be used to recover your data.

In certain situations, you might need to delete a shadow extract from your computer. For more information, see Low Disk Space because of shadow extract in the Tableau Knowledge Base.

Changes to the way values are computed

Starting from version 10.5, when you are working with extract data sources as well as data sources that use live connections to file-based data like Excel, the values in your data can be computed differently from previous versions of Tableau. This change means that you might see differences between the data and the marks in your view between version 10.4 (and earlier) and version 10.5 (and later). The purpose of this change is to improve the efficiency and scalability of your Excel data source. For more information, see Changes to values and marks in the view.

In the case of an Excel data source, one example of this change is with case sensitivity. In version 10.4 (and earlier), for comparing and sorting purposes, string values are treated as case insensitive and therefore treated the same and stored as a single string value. In version 10.5 (and later), for sorting and comparing purposes, values remain case insensitive. However, values are case sensitive for storing purposes. This becomes evident when values are displayed on the data source page.

For example, suppose you have a column in your data that contains the values "House," "HOUSE," and "houSe." You see the following string values depending on the version of Tableau you are using:

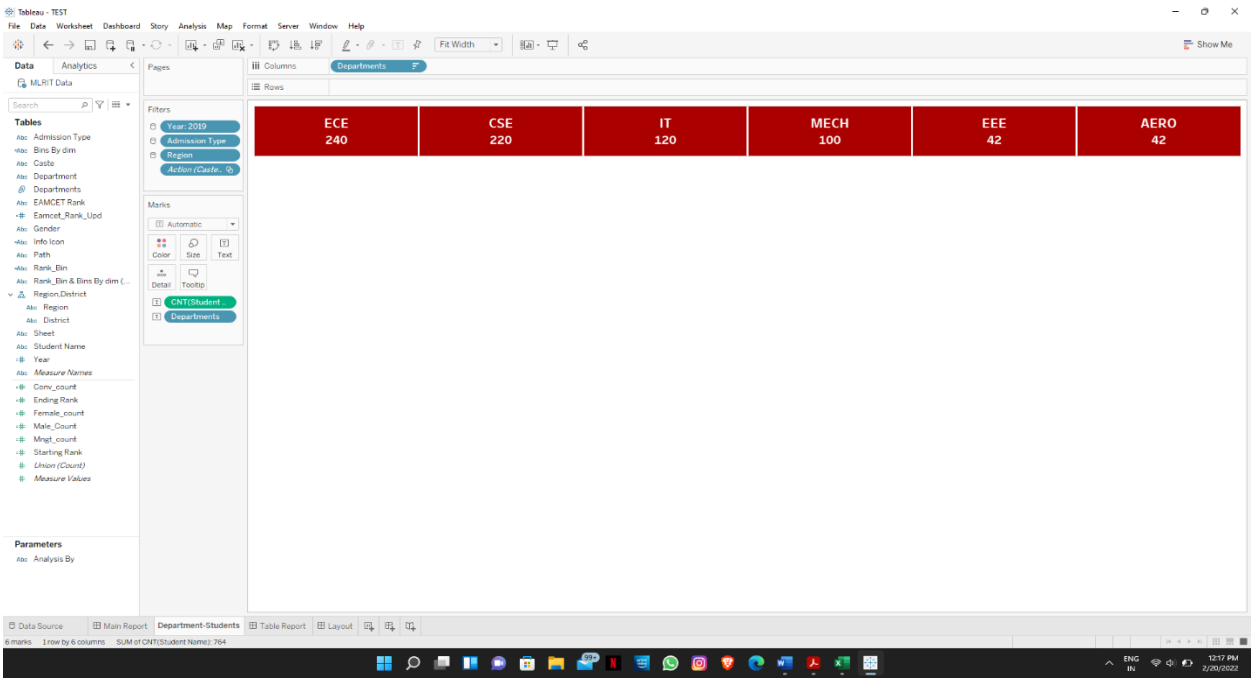
- In version 10.4 and earlier, both on the data source page and view, you see: "House," "House," and "House."
- In version 10.5 and later, on the data source page you see: "House," "HOUSE," and "houSe." But in the view you see: "House," "House," and "House."

If you need to maintain case sensitivity for your data when performing a join, you can enable the **Maintain Character Case (Excel)** option from the Data menu. For more information about this option, see Join Your Data

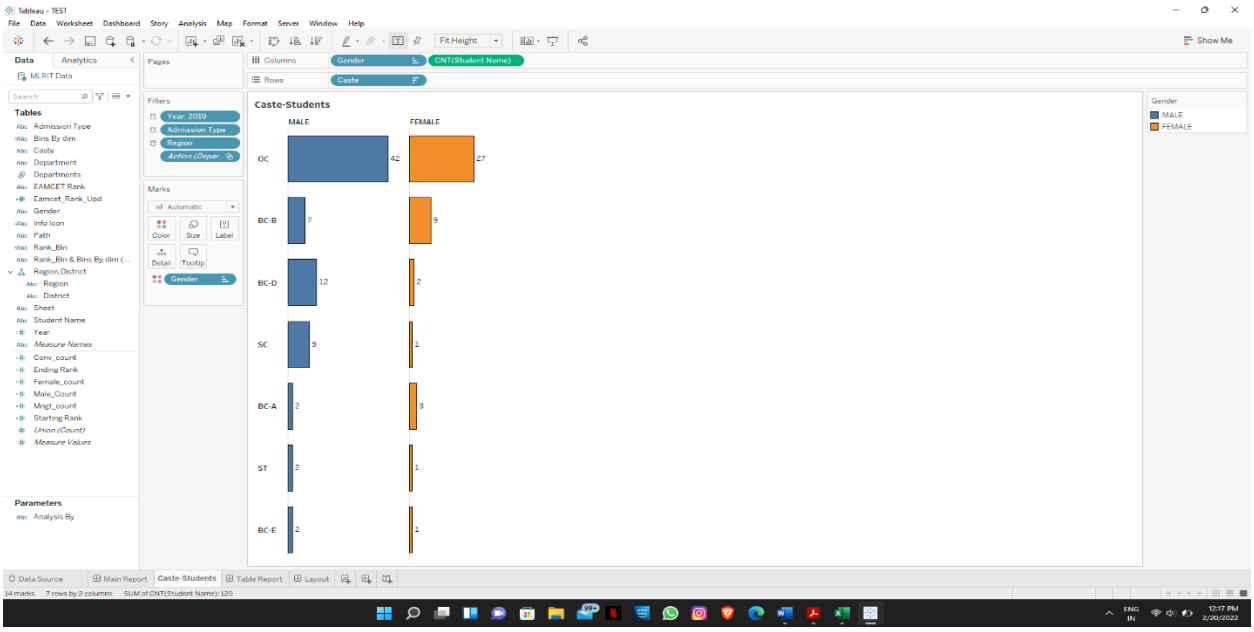
7. Testing & Results

Making Reports to make final Dashboard Report

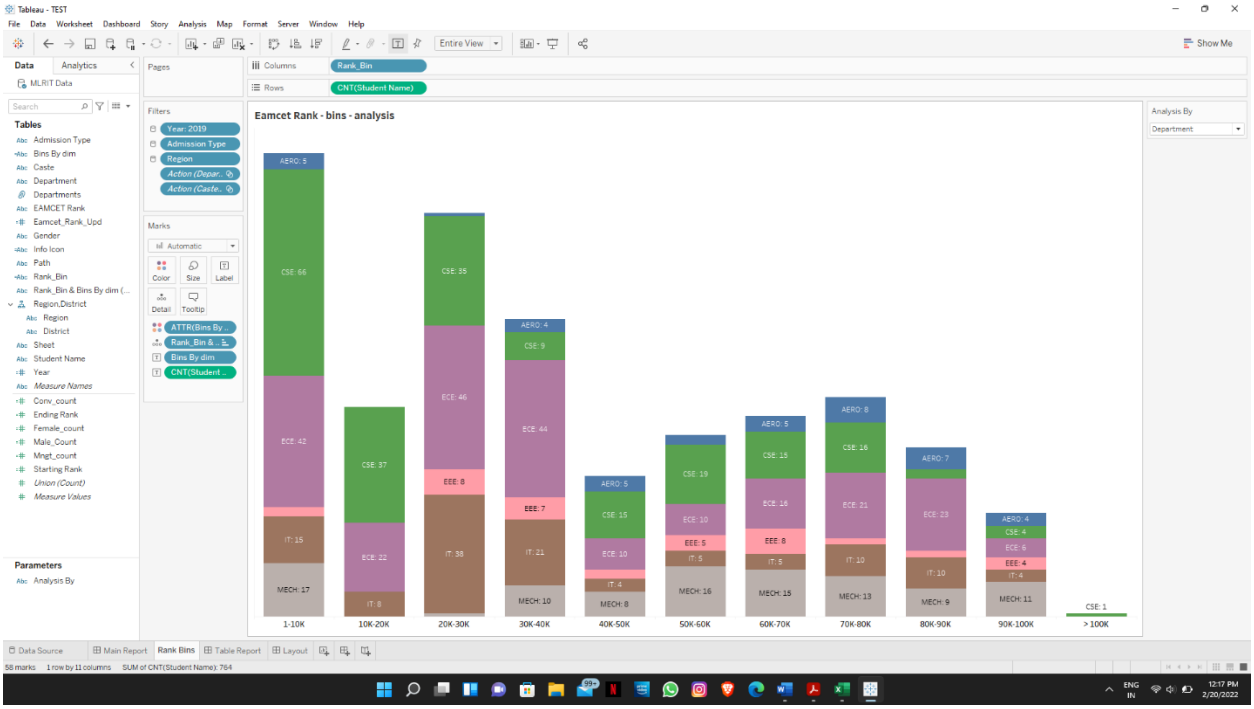
Step-1 : Department – Wise No. of Students



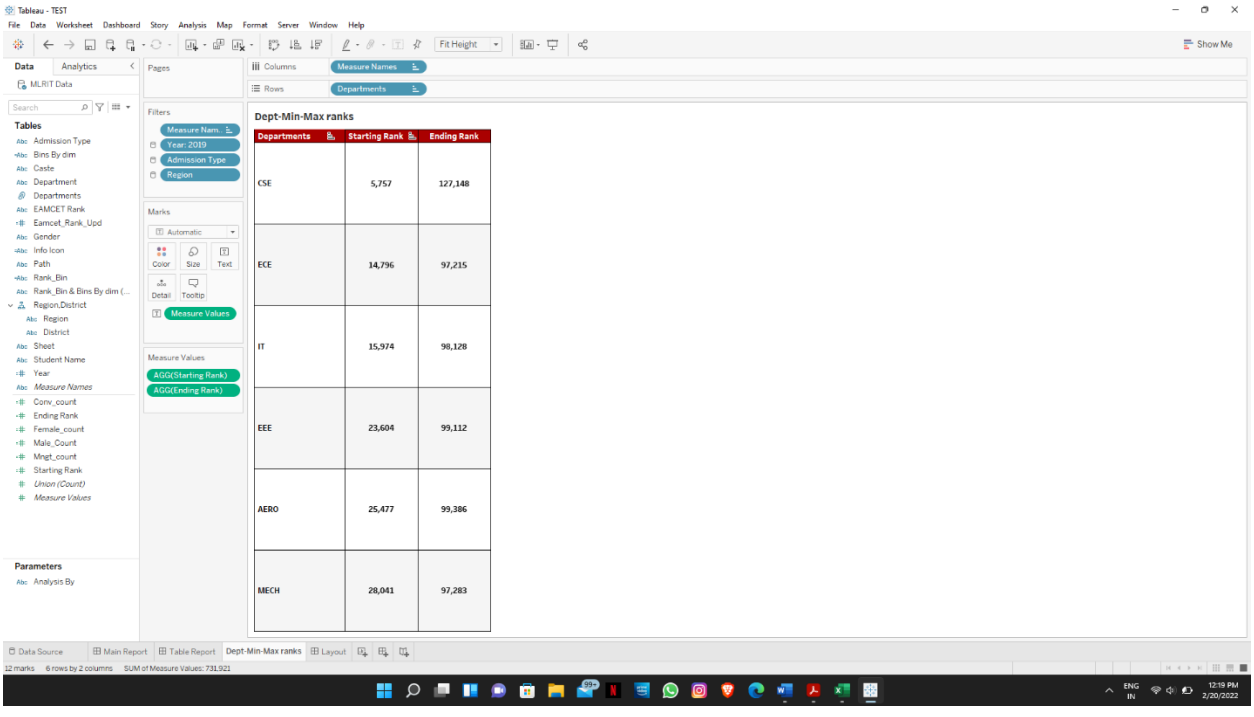
Step – 2 :Caste – Wise No. of Students filtered through Male & Female



Step – 3 : EMACET Rank – bins – Analysis (Filter by – Admission Type, Caste, Department and Gender)



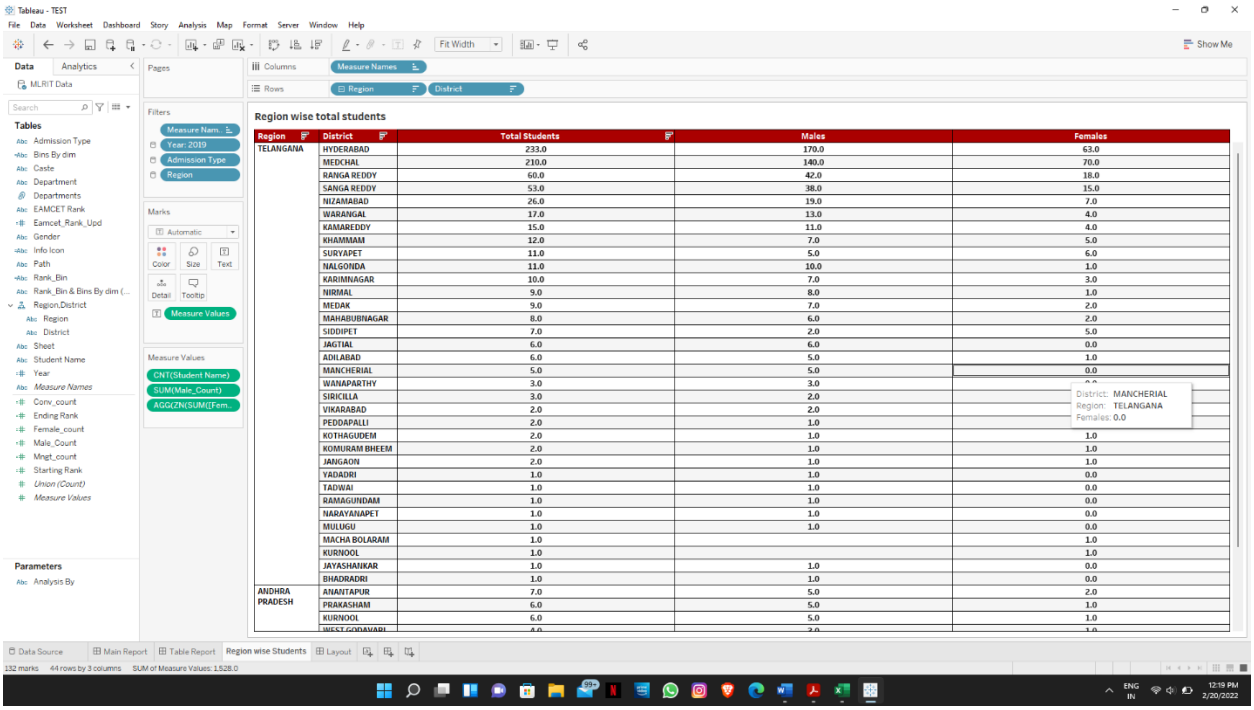
Step- 4 : Department – Wise Minimum and Maximum EAMCET Rank



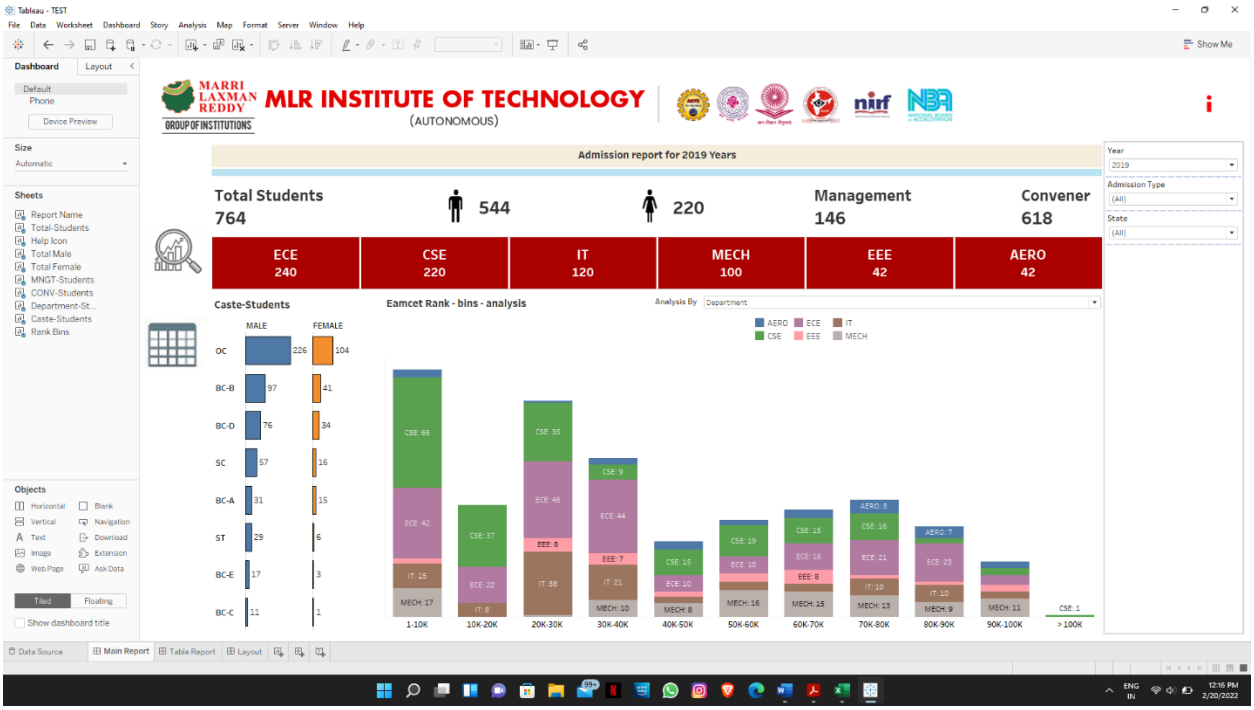
Dept-Min-Max ranks

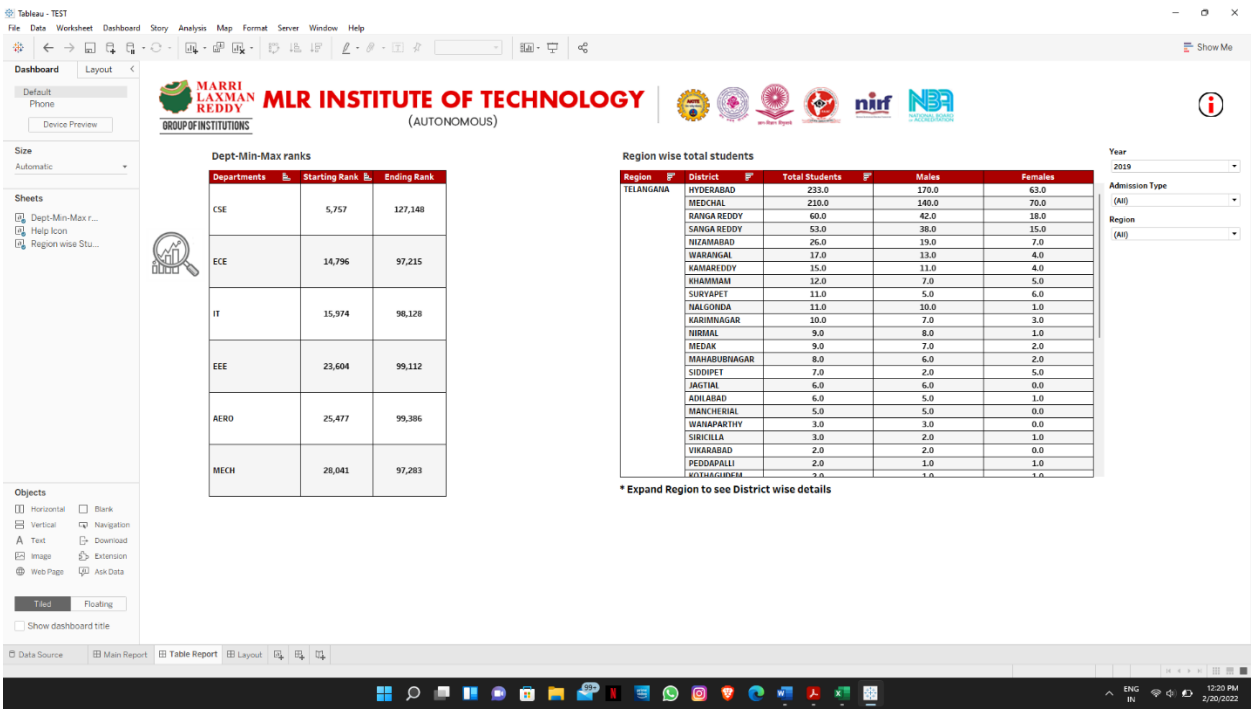
Departments	Starting Rank	Ending Rank
CSE	5,757	127,148
ECE	14,796	97,215
IT	15,974	98,128
EEE	23,604	99,112
AERO	25,477	99,386
MECH	28,041	97,283

Step – 5 : Region – District Wise Total Students



8. Final Dashboard Report





Dept-Min-Max ranks

Departments	Starting Rank	Ending Rank
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MECH	28,041	97,283

Region wise total students

Region	District	Total Students	Males	Females
TELANGANA	HYDERABAD	233.0	170.0	63.0
	MEDCHAL	210.0	140.0	70.0
	RANGA REDDY	60.0	42.0	18.0
	SANGA REDDY	53.0	38.0	15.0
	NIZAMABAD	26.0	19.0	7.0
	WARANGAL	17.0	13.0	4.0
	KAMAREDDY	15.0	11.0	4.0
	KHAMMAM	12.0	7.0	5.0
	SURYAPET	11.0	5.0	6.0
	NALGONDA	11.0	10.0	1.0
	KARIMNAGAR	10.0	7.0	3.0
	NIRMAL	9.0	8.0	1.0
	MEDAK	9.0	7.0	2.0
	MAHABUBNAGAR	8.0	6.0	2.0
	SIDDIPET	7.0	2.0	5.0
	JAGTIAL	6.0	6.0	0.0
	ADILABAD	6.0	5.0	1.0
	MANCHERIAL	5.0	5.0	0.0
	WANAPARTHY	3.0	3.0	0.0
	SIRICILLA	3.0	2.0	1.0
	VIKARABAD	2.0	2.0	0.0
	PEDDAPALLI	2.0	1.0	1.0

9. Conclusion

As we conclude our brief study on data visualization, it is clear that the field is rich in potential applications in diverse disciplines, at the same time we need to be aware of its practical and ethical complexities. In the previous chapters, we have presented some important theoretical and practical principles to keep in mind when designing a data visualization. We have also discussed and critiqued several examples of data visualizations, learning common pitfalls and helpful tricks along the way. As we have seen, developing an effective and ethical data visualization is a complex process. In this chapter we will touch upon the future of data visualization and additional resources for data visualizers.

Data visualization is entering a new era. Emerging sources of intelligence, theoretical developments and advances in multidimensional imaging are reshaping the potential value that analytics and insights can provide, with visualization playing a key role. The principles of effective data visualization won't change. However, nextgen technologies and evolving cognitive frameworks are opening new horizons, moving data visualization from art to science.

Looking back, much attention has been given to the principles of effective data visualization, such as substance, context and actionability. As timeless tenets that will continue to be important, regardless of medium or format, a brief review seems in order:

- **Effective data visualization should be substantive** And while creative visuals can enhance interest and memory, embellishment can't make up for lack of substance. According to purist Edward Tufte, "Every single pixel should testify directly to content."
- **Visualization should be accurate and contextual.** David McCandless's Billion Dollar O'Gram provides an example of how greater meaning can be added by incorporating the bigger picture. According to McCandless, "Absolute figures in a connected world don't give you the whole picture. They're not as true as they could be. We need relative figures that are connected to other data so that we can see a fuller picture."
- **More than anything else, data visualization should facilitate decision-making**, a goal that is difficult to achieve for many. According to a recent

[KPMG study](International 2015), while data and analytics are deemed increasingly important to organizations, generating actionable insights remains a top challenge.

10.Reference

https://public.tableau.com/s/gallery

•Daily inspiration through ‘vizof the day’

•A place to upload your work to the cloud

•Open environment to share visualizations and data (don’t post confidential data here □)

http://www.visualnews.com/

http://www.flowingdata.com

http://www.thisiscolossal.com/

http://vizwiz.blogspot.com/

http://www.datavizdoneright.com/

National Geographic Magazine
Bloomberg Businessweek