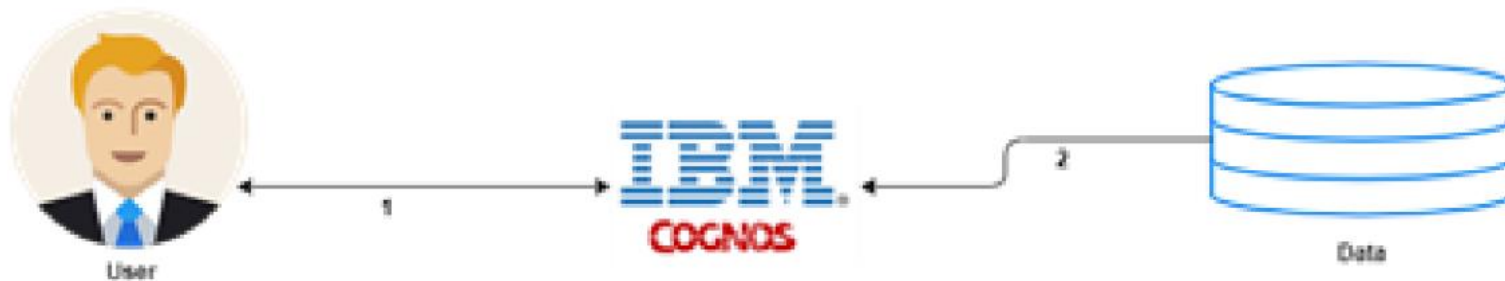


TRAFFIC AND CAPACITY ANALYTICS FOR MAJOR PORTS

Project Description:

The Indian Railways has a capital base of about Rs. 100000 crores and is often referred to as the lifeline of the Indian economy because of its predominance in transportation of bulk freight and long distance passenger traffic. The network criss-crosses the nation, binding it together by ferrying freight and passengers across the length and breadth of the country. As the Indian economy moves into a high growth trajectory the Railways have also stepped-up developmental efforts and are preparing themselves for an even bigger role in the future.

Technical Architecture:



DATA COLLECTION AND PERPARATION

TEAM ID: PNT2022TMID00308

The screenshot shows the IBM Cognos Analytics web application interface. An 'Open' file explorer window is overlaid on the top left, showing the path 'Desktop > Nalaiya thiran > dataset'. It contains a table with one file: 'datafile_02', which is a CSV File, 1 KB in size, and was modified on 07-11-2022 at 18:38. The file name 'datafile_02' is entered in the 'File name' field, and the 'Open' button is highlighted.

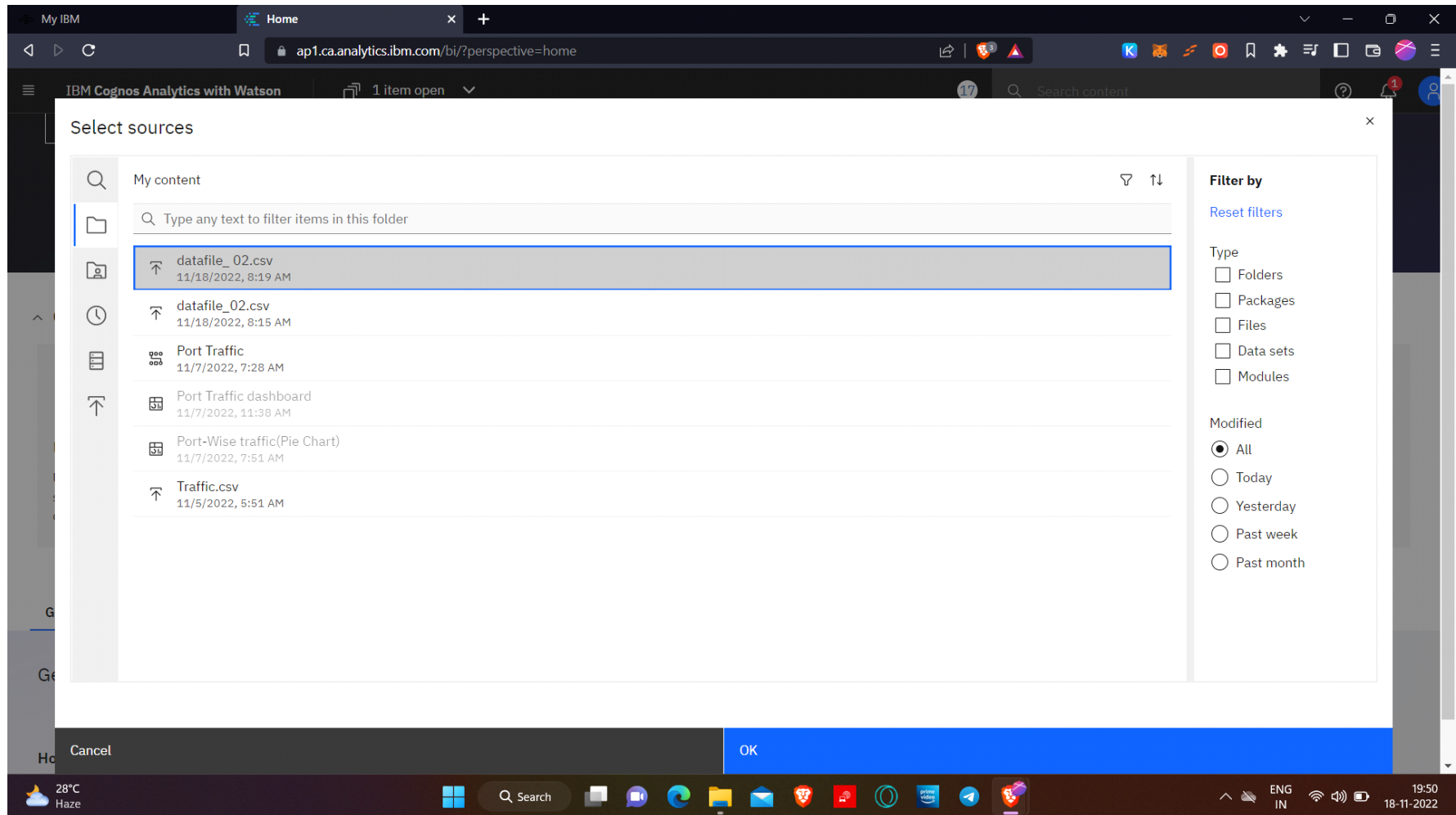
The main interface has a dark header bar with a search bar labeled 'Search content' and a user profile icon. Below the header, there are four main sections:

- Upload data**: Upload or drag and drop spreadsheets, csv files, and other data sources.
- Prepare data**: Use data modules to clean and connect data from multiple resources.
- Exploration**: Quickly find unbiased answers by identifying trends in your data with data exploration.
- Present data**: Create sophisticated, multi-page, multi-query dashboards, reports, or stories.

At the bottom, there is a navigation bar with tabs for 'Get started' (selected) and 'Recent'. The 'Get started' tab contains the text 'Get up and running in IBM Cognos Analytics'. Below this, there are three sections: 'How-to videos', 'Accelerator Catalog', and 'Learning resources'.

The Windows taskbar at the bottom shows the system clock as 19:49 on 18-11-2022, the language as ENG IN, and various application icons including the Start button, Search, and several open applications.

TEAM ID: PNT2022TMID00308



TEAM ID: PNT2022TMID00308

My IBM

* New data module

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=3625728000_dbed2b0c59bd4b7a8a8cab7e780...

IBM Cognos Analytics with Watson

* New data module

17

Search content

Properties

Data module

Search

New data module

Navigation paths

datafile_02.csv

Row Id

Port

Traffic in ...1-12)Proj.

Traffic in ...1-12) Ach.

Traffic in ...011-12) %

Total Capa...12) Proj.

Total Capa...12) Ach.

Total Cap...011-12) %

Grid

Relationships

Custom tables

Row Id	Port	Traffic in E...11-12)Proj.	Traffic in E...11-12) Ach.	Traffic in ...(2011-12) %	Total Capac...1-12) Proj.	Total Capac...1-12
1	Kolkata	1343	1223	9100	3145	1635
2	Haldia	4450	3101	7000	6340	5070
3	Paradeep	7640	5425	7100	10640	7650
4	Visakhapatnam	8220	6742	8200	10810	7293
5	Ennore	4700	1496	3200	6420	3100
6	Chennai	5750	5571	9700	7230	7972
7	Tuticorin	3172	2810	8900	6398	3334
8	Cochin	3817	2010	5300	5475	4098
9	NMPT	4881	3294	6800	6050	5097
10	Mormugao	4455	3900	8800	6690	4190
11	Mumbai	7105	5618	7900	9191	4453
12	JNPT	6604	6575	10000	9560	6400
13	Kandla	8672	8250	9500	12220	8691

28°C Haze

Search

ENG IN

19:55 18-11-2022

Preparing Dataset:

The screenshot displays the IBM Cognos Analytics interface. The top navigation bar shows the user is logged in as 'My IBM' and is viewing a 'New data module'. The browser address bar shows the URL: ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=3625728000_75f2bddc0c2c485b8d0acb9cbd3d.... The main workspace is titled 'Data module' and contains a table with the following columns: Row Id, Port, Traffic in E...11-12)Proj., Traffic in E...11-12) Ach., Traffic in ...(2011-12) %, Total Capac...1-12) Proj., and Total Capac...1-12) Ach. The table contains 12 rows of data. A context menu is open over the 'Traffic in E...11-12)Proj.' column, showing options such as Filter..., Create calculation..., Create data group..., Hide from users, Remove, Refresh properties..., Format data..., Clean..., Rename, Cut, Copy, and Properties.

Row Id	Port	Traffic in E...11-12)Proj.	Traffic in E...11-12) Ach.	Traffic in ...(2011-12) %	Total Capac...1-12) Proj.	Total Capac...1-12) Ach.
1	Kolkata	1343	1223	9100	3145	1635
2	Haldia	4450	3101	7000	6340	5070
3	Paradeep	7640	5425	7100	10640	7650
4	Visakhapatnam	8220	6742	8200	10810	7293
5	Ennore	4700	1496	3200	6420	3100
6	Chennai	5750	5571	9700	7230	7972
7	Tuticorin	3172	2810	8900	6398	3334
8	Cochin	3817	2010	5300	5475	4098
9	NMPT	4881	3294	6800	6050	5097
10	Mormugao	4455	3900	8800	6690	4190
11	Mumbai	7105	5618	7900	9191	4453
12	JNPT	6604	6575	10000	9560	6400
13	Kandla	8672	8250	9500	12220	8691

TEAM ID: PNT2022TMID00308

My IBM

* New data module

+

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=3625728000_75f2bddc0c2c485b8d0acb9cbd3d...

IBM Cognos Analytics with Watson

* New data module

17

Search content

?

1

Person icon

Properties

Data module

+ ⓘ

Search

New data module

Navigation paths

datafile_02.csv

Row Id

Port

Traffic Projection.

Traffic in ...1-12) Ach.

Traffic in ...011-12) %

Total Capa...-12) Proj.

Total Capa...-12) Ach.

Total Cap...011-12) %

Grid

Relationships

Custom tables

↑↓	Row Id	Port	Traffic Projection.	Traffic in E...11-12) Ach.	Traffic in ...(2011-12) %	Total Capac...1-12) Proj.	Total Capac...1-12) Ach.
	1	Kolkata	1343	1223	9100	3145	1635
	2	Haldia	4450	3101	7000	6340	5070
	3	Paradeep	7640	5425	7100	10640	7650
	4	Visakhapatnam	8220	6742	8200	10810	7293
	5	Ennore	4700	1496	3200	6420	3100
	6	Chennai	5750	5571	9700	7230	7972
	7	Tuticorin	3172	2810	8900	6398	3334
	8	Cochin	3817	2010	5300	5475	4098
	9	NMPT	4881	3294	6800	6050	5097
	10	Mormugao	4455	3900	8800	6690	4190
	11	Mumbai	7105	5618	7900	9191	4453
	12	JNPT	6604	6575	10000	9560	6400
	13	Kandla	8672	8250	9500	12220	8691

Filter...

Create calculation...

Create data group...

Hide from users

Remove

Refresh properties...

Format data...

Clean...

Rename

Cut

Copy

Properties

27°C Mostly clear

Search

Windows icons

ENG IN

20:03 18-11-2022

TEAM ID: PNT2022TMID00308

My IBM

* New data module

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=3625728000_75f2bddc0c2c485b8d0acb9cbd3d...

IBM Cognos Analytics with Watson

* New data module

Search content

Properties

Data module

Search

New data module

Navigation paths

datafile_02.csv

Row Id

Port

Traffic Projection.

Traffic Achieved.

Traffic in...(2011-12) %

Total Capa...-12) Proj.

Total Capa...-12) Ach.

Total Capa...011-12) %

Filter...

Create calculation...

Create data group...

Hide from users

Remove

Refresh properties...

Format data...

Clean...

Rename

Cut

Copy

Properties

Row Id	Port	Traffic Projection.	Traffic Achieved.	Traffic in ...(2011-12) %	Total Capa...-12) Proj.	Total Capa...-12) Ach.
1	Kolkata	1343	1223	9100	3145	1635
2	Haldia	4450	3101	7000	6340	5070
3	Paradeep	7640	5425	7100	10640	7650
4	Visakhapatnam	8220	6742	8200	10810	7293
5	Ennore	4700	1496	3200	6420	3100
6	Chennai	5750	5571	9700	7230	7972
7	Tuticorin	3172	2810	8900	6398	3334
8	Cochin	3817	2010	5300	5475	4098
9	NMPT	4881	3294	6800	6050	5097
10	Mormugao	4455	3900	8800	6690	4190
11	Mumbai	7105	5618	7900	9191	4453
12	JNPT	6604	6575	10000	9560	6400
13	Kandla	8672	8250	9500	12220	8691

27°C Mostly clear

Search

ENG IN

20:03 18-11-2022

TEAM ID: PNT2022TMID00308

My IBM

* New data module

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=3625728000_75f2bddc0c2c485b8d0acb9cbd3d...

IBM Cognos Analytics with Watson

* New data module

Search content

Properties

Data module

Search

New data module

Navigation paths

datafile_02.csv

Row Id

Port

Traffic Projection.

Traffic Achieved.

Traffic in...011-12) %

Total Capa...rojected.

Total Capa...-12) Ach.

Total Cap...011-12) %

Grid

Relationships

Custom tables

d	Port	Traffic Projection.	Traffic Achieved.	Traffic in ...(2011-12) %	Total Capac... Projected.	Total Capac...1-12) Ach.
	Kolkata	1343	1223	9100	3145	1635
	Haldia	4450	3101	7000	6340	5070
	Paradeep	7640	5425	7100	10640	7650
	Visakhapatnam	8220	6742	8200	10810	7293
	Ennore	4700	1496	3200	6420	3100
	Chennai	5750	5571	9700	7230	7972
	Tuticorin	3172	2810	8900	6398	3334
	Cochin	3817	2010	5300	5475	4098
	NMPT	4881	3294	6800	6050	5097
	Mormugao	4455	3900	8800	6690	4190
	Mumbai	7105	5618	7900	9191	4453
	JNPT	6604	6575	10000	9560	6400
	Kandla	8672	8250	9500	12220	8691

Filter...

Create calculation...

Create data group...

Hide from users

Remove

Refresh properties...

Format data...

Clean...

Rename

Cut

Copy

Properties

27°C Mostly clear

Search

ENG IN

20:04 18-11-2022

TEAM ID: PNT2022TMID00308

My IBM main

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=iC6015B4DE2374F2CA14F4A78D5334C3A&obj...

IBM Cognos Analytics with Watson main

Search content

Properties

Data module

main

Navigation paths

datafile_02.csv

Row Id

Port

Traffic Projection.

Traffic Achieved.

Traffic in...(2011-12) %

Total Capac...rojected.

Total Capa...Achieved.

Total Cap...011-12) %

Grid Relationships Custom tables

Port	Traffic Projection.	Traffic Achieved.	Traffic in ...(2011-12) %	Total Capac... Projected.	Total Capacity Achieved.	Total Capa...2011
Kolkata	1343	1223	9100	3145	1635	5100
Haldia	4450	3101	7000	6340	5070	7900
Paradeep	7640	5425	7100	10640	7650	7100
Visakhapatnam	8220	6742	8200	10810	7293	6700
Ennore	4700	1496	3200	6420	3100	4800
	5750	5571	9700	7230	7972	11000
	3172	2810	8900	6398	3334	5200
	3817	2010	5300	5475	4098	7400
	4881	3294	6800	6050	5097	8400
	4455	3900	8800	6690	4190	6200
	7105	5618	7900	9191	4453	4800
	6604	6575	10000	9560	6400	6600
Kandla	8672	8250	9500	12220	8691	7100

Create calculation...

Hide from users

Remove

Refresh properties...

Format data...

Clean...

Cut

Copy

Properties

27°C Mostly clear

Search

ENG IN

20:07 18-11-2022

TEAM ID: PNT2022TMID00308

My IBM

* main

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=iC6015B4DE2374F2CA14F4A78D5334C3A&obj...

IBM Cognos Analytics with Watson

* main

Search content

Properties

Data module

Search

main

Navigation paths

datafile_02.csv

Row Id

Port

Traffic Achieved.

Traffic Projection.

Traffic in...(2011-12) %

Total Capac...rojected.

Total Capac...Achieved.

Total Cap...(2011-12) %

Grid

Relationships

Custom tables

Create calculation

Name

Traffic Achieved. % Traffic Projection.

Expression

Traffic Achieved. % Traffic Projection.

Calculate after aggregation

Use calculation editor

Cancel

OK

Row Id	Port	Traffic Achieved	Traffic Projection	Traffic in ...(2011-12) %	Total Capac... Projected.	Total Capacity Ac
1				9100	3145	1635
2				7000	6340	5070
3				7100	10640	7650
4				8200	10810	7293
5				3200	6420	3100
6				9700	7230	7972
7				8900	6398	3334
8				5300	5475	4098
9				6800	6050	5097
10				8800	6690	4190
11	Mumbai	5618	7105	7900	9191	4453
12	JNPT	6575	6604	10000	9560	6400
13	Kandla	8250	8672	9500	12220	8691

27°C Mostly clear

Search

ENG IN

20:09 18-11-2022

TEAM ID: PNT2022TMID00308

My IBM

* main

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=ic6015B4DE2374F2CA14F4A78D5334C3A&obj...

IBM Cognos Analytics with Watson

* main

Search content

Properties

Data module

Search

main

Navigation paths

datafile_02.csv

Traffic Ac...Projection.

Row Id

Port

Traffic Achieved.

Traffic Projection.

Traffic in...011-12) %

Total Capa...rojected.

Total Capa...Achieved.

Total Cap...011-12) %

Grid

Relationships

Custom tables

d	Port	Traffic Achieved.	Traffic Projection.	Traffic in ...(2011-12) %	Total Capac... Projected.	Total Capac... Achieved.
	Kolkata	1223	1343	9100	3145	1635
	Haldia	3101	4450	7000	6340	5070
	Paradeep	5425	7640	7100	10640	7650
	Visakhapatnam	6742	8220	8200	10810	7293
	Ennore	1496	4700	3200	6420	3100
	Chennai	5571	5750	9700	7230	7972
	Tuticorin	2810	3172	8900	6398	3334
	Cochin	2010	3817	5300	5475	4098
	NMPT	3294	4881	6800	6050	5097
	Mormugao	3900	4455	8800	6690	4190
	Mumbai	5618	7105	7900	9191	4453
	JNPT	6575	6604	10000	9560	6400
	Kandla	8250	8672	9500	12220	8691

Create calculation...

Hide from users

Remove

Refresh properties...

Format data...

Clean...

Cut

Copy

Properties

27°C Mostly clear

Search

ENG IN

20:10 18-11-2022

TEAM ID: PNT2022TMID00308

My IBM

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=iC6015B4DE2374F2CA14F4A78D5334C3A&obj...

IBM Cognos Analytics with Watson

Search content

Properties

Data module

main

Navigation paths

datafile_02.csv

Traffic Ac...Projection.

Row Id

Port

Traffic Achieved.

Traffic Projection.

Traffic in...(2011-12) %

Total Capa...rejected.

Total Capa...Achieved.

Total Capa...011-12) %

Create calculation

Name

Total Capacity Achieved. + Total Capacity Projected.

Expression

Total Cap...Achieved.

+

Total Capa...rejected.

Calculate after aggregation

Use calculation editor

Cancel

OK

Port	Traffic Achieved.	Traffic Projection.	Traffic in ...(2011-12) %	Total Capac... Projected.	Total Capac... Achieved.
				3145	1635
				6340	5070
				10640	7650
				10810	7293
				6420	3100
				7230	7972
				6398	3334
				5475	4098
				6050	5097
				6690	4190
				9191	4453
Mumbai	5618	7105	7900		
JNPT	6575	6604	10000	9560	6400
Kandla	8250	8672	9500	12220	8691

27°C Mostly clear

Search

ENG IN

20:11 18-11-2022

TEAM ID: PNT2022TMID00308

My IBM

* main

ap1.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=iC6015B4DE2374F2CA14F4A78D5334C3A&obj...

IBM Cognos Analytics with Watson

* main

17

Search content

Properties

Data module

Search

main

Navigation paths

datafile_02.csv

Total Capa...rojected.

Traffic Ac...Projection.

Row Id

Port

Traffic Achieved.

Traffic Projection.

Traffic in...011-12) %

Total Capa...rojected.

Total Capa...Achieved.

Total Capa...011-12) %

Grid Relationships Custom tables

↑↓ d	Port	Traffic Achieved.	Traffic Projection.	Traffic in ...(2011-12) %	Total Capac... Projected.	Total Capac... Achieved.
	Kolkata	1223	1343	9100	3145	1635
	Haldia	3101	4450	7000	6340	5070
	Paradeep	5425	7640	7100	10640	7650
	Visakhapatnam	6742	8220	8200	10810	7293
	Ennore	1496	4700	3200	6420	3100
	Chennai	5571	5750	9700	7230	7972
	Tuticorin	2810	3172	8900	6398	3334
	Cochin	2010	3817	5300	5475	4098
	NMPT	3294	4881	6800	6050	5097
	Mormugao	3900	4455	8800	6690	4190
	Mumbai	5618	7105	7900	9191	4453
	JNPT	6575	6604	10000	9560	6400
	Kandla	8250	8672	9500	12220	8691

27°C Mostly clear

Search

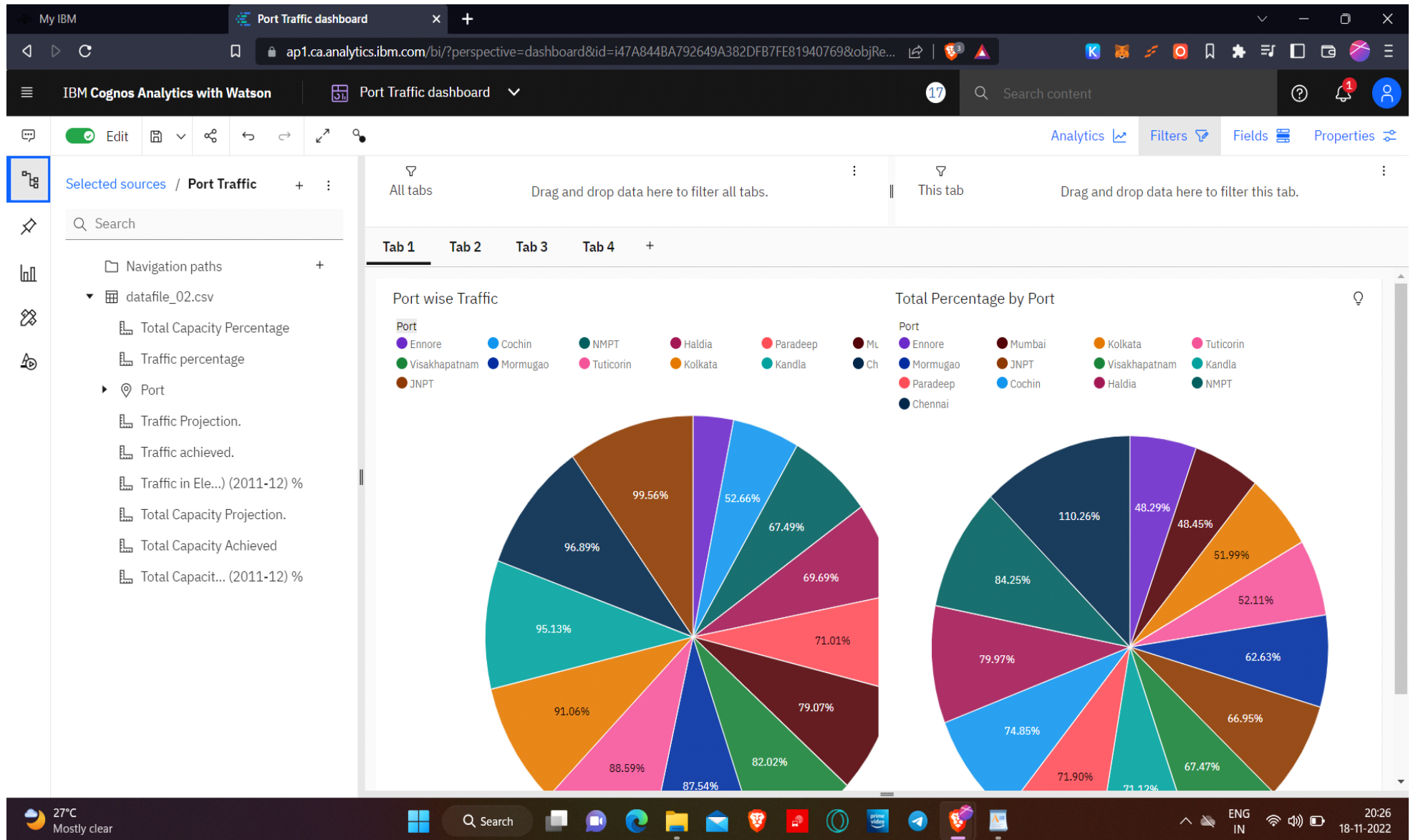
ENG IN

20:11 18-11-2022

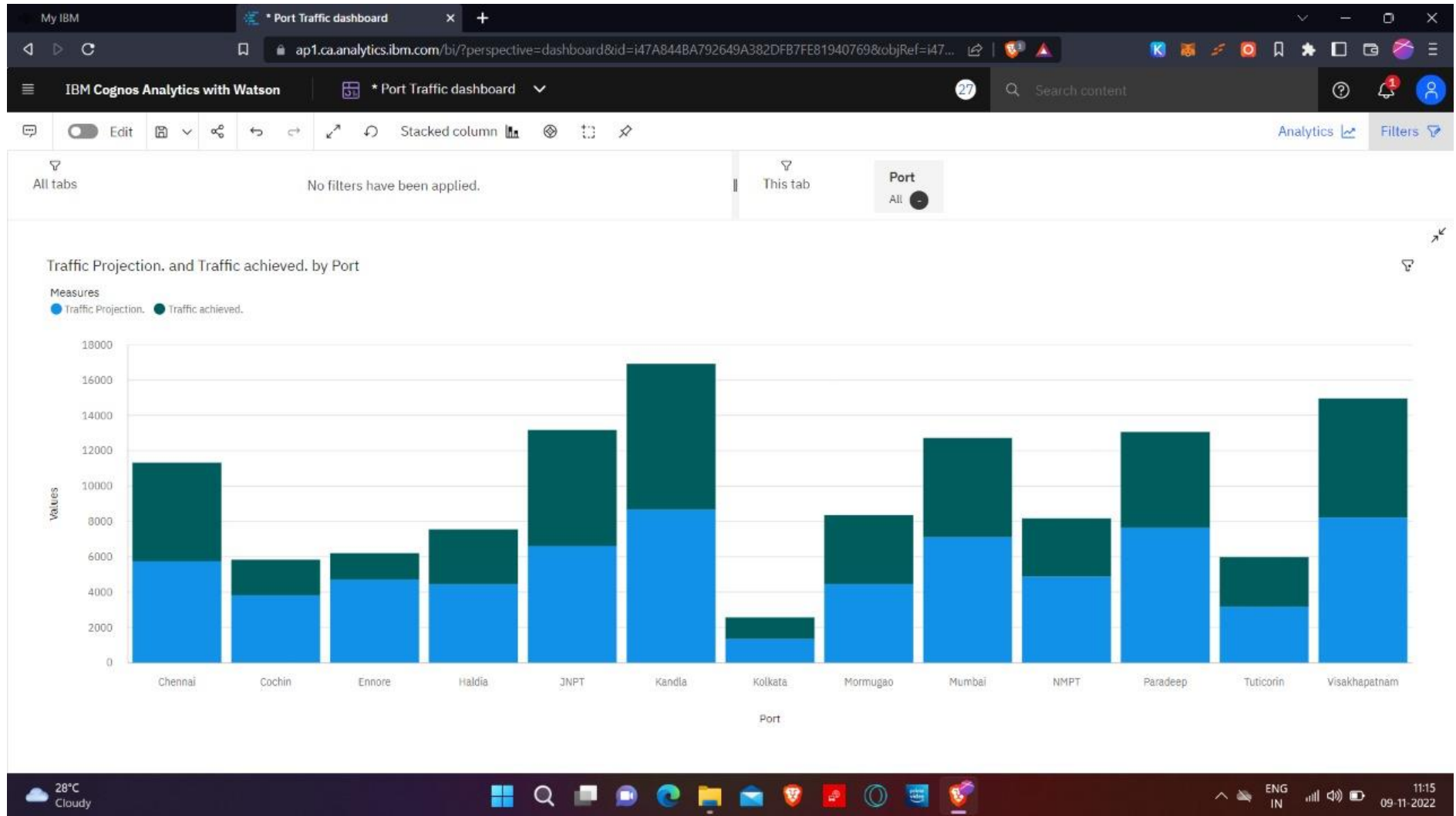
Data Exploration:

[illegible]

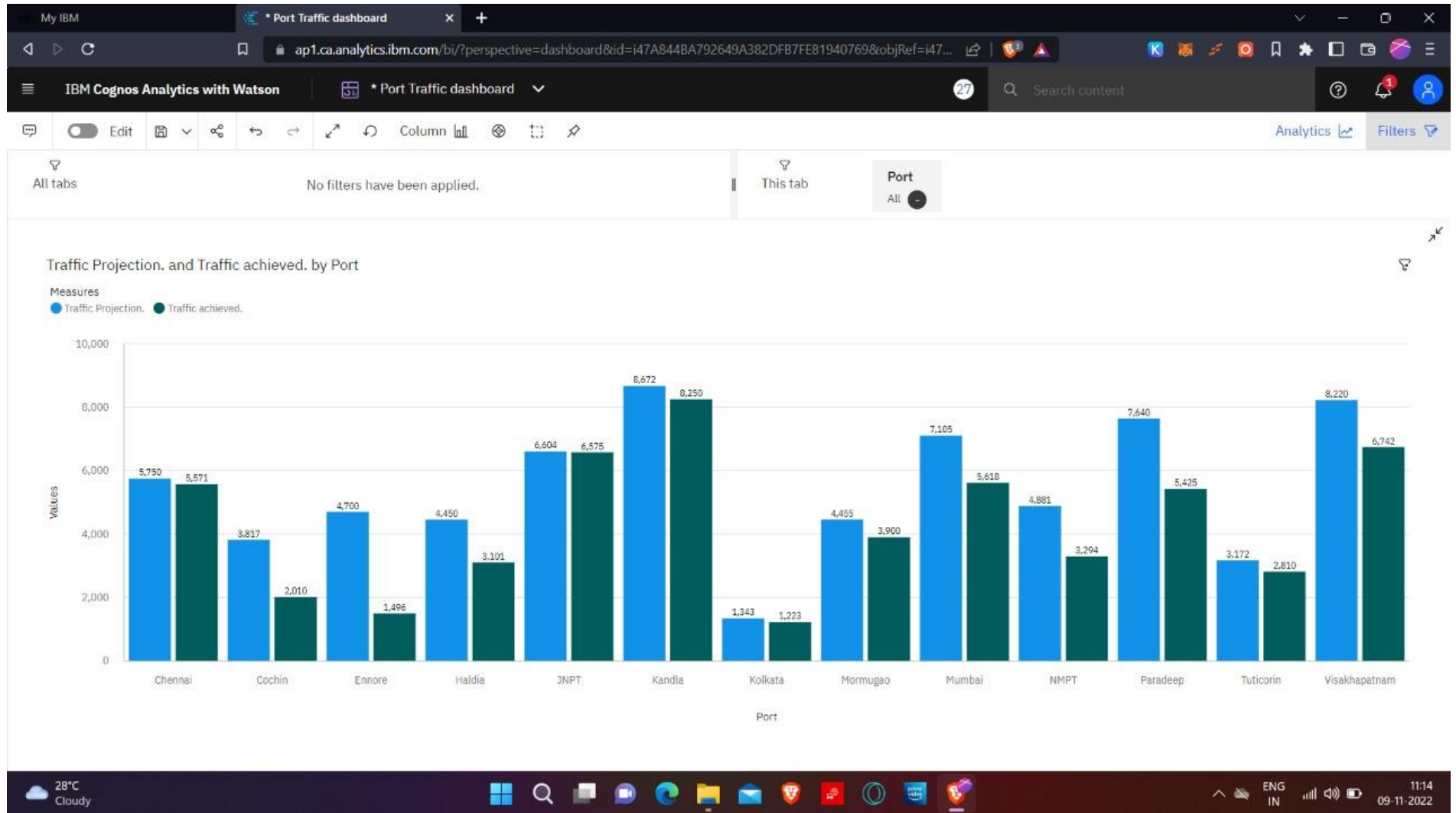
TEAM ID: PNT2022TMID00308



TEAM ID: PNT2022TMID00308



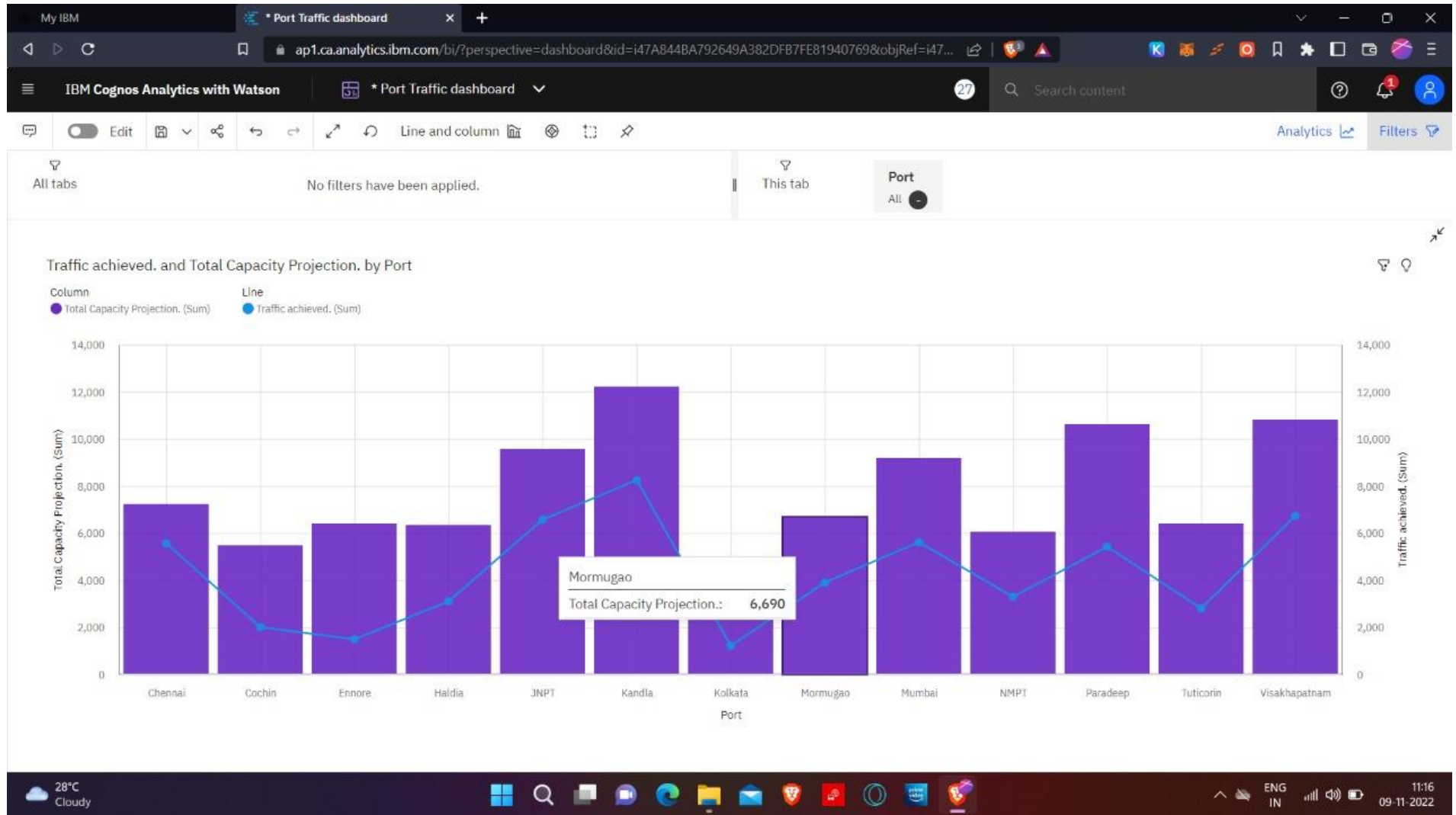
TEAM ID: PNT2022TMID00308



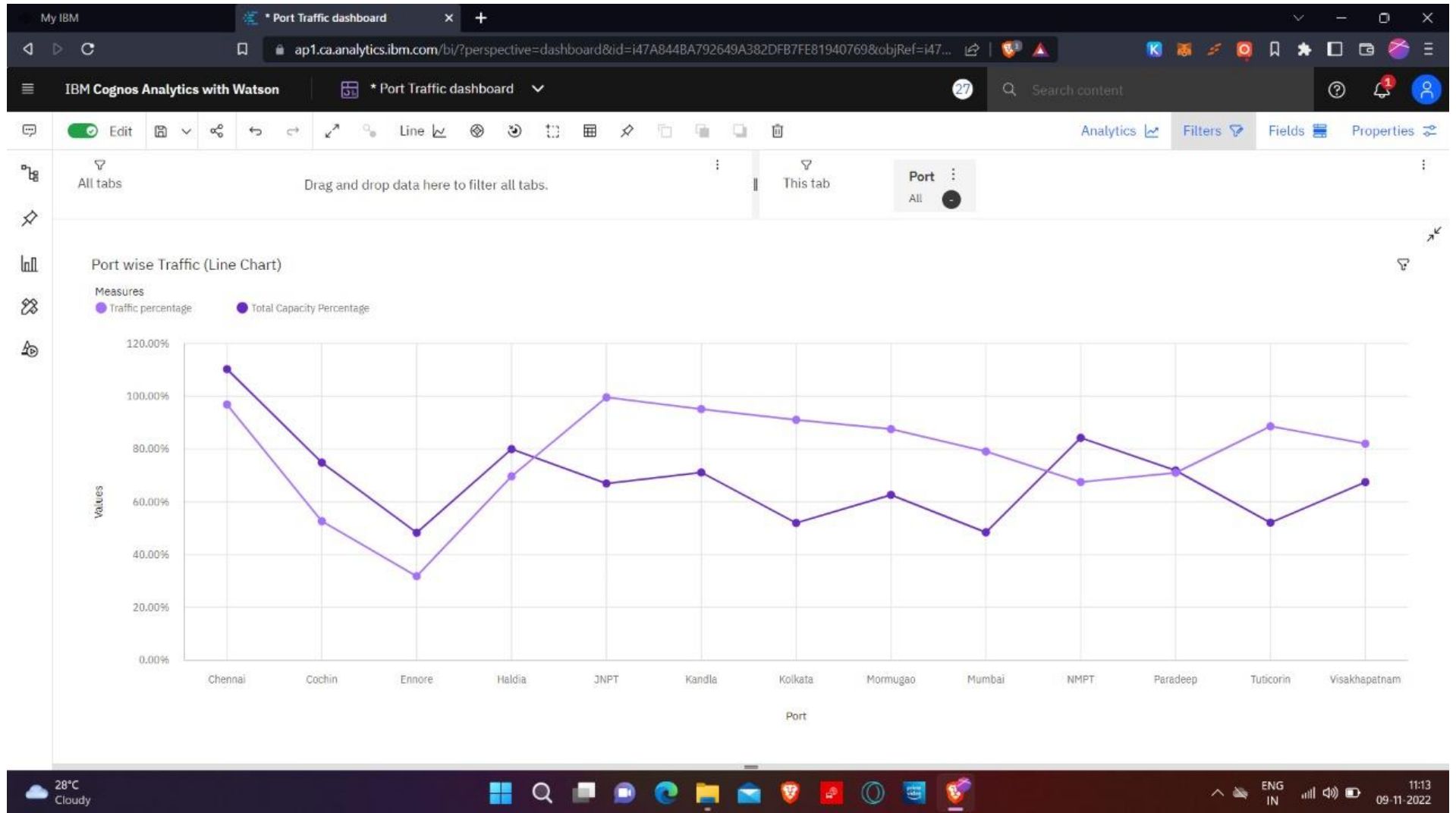
TEAM ID: PNT2022TMID00308



TEAM ID: PNT2022TMID00308

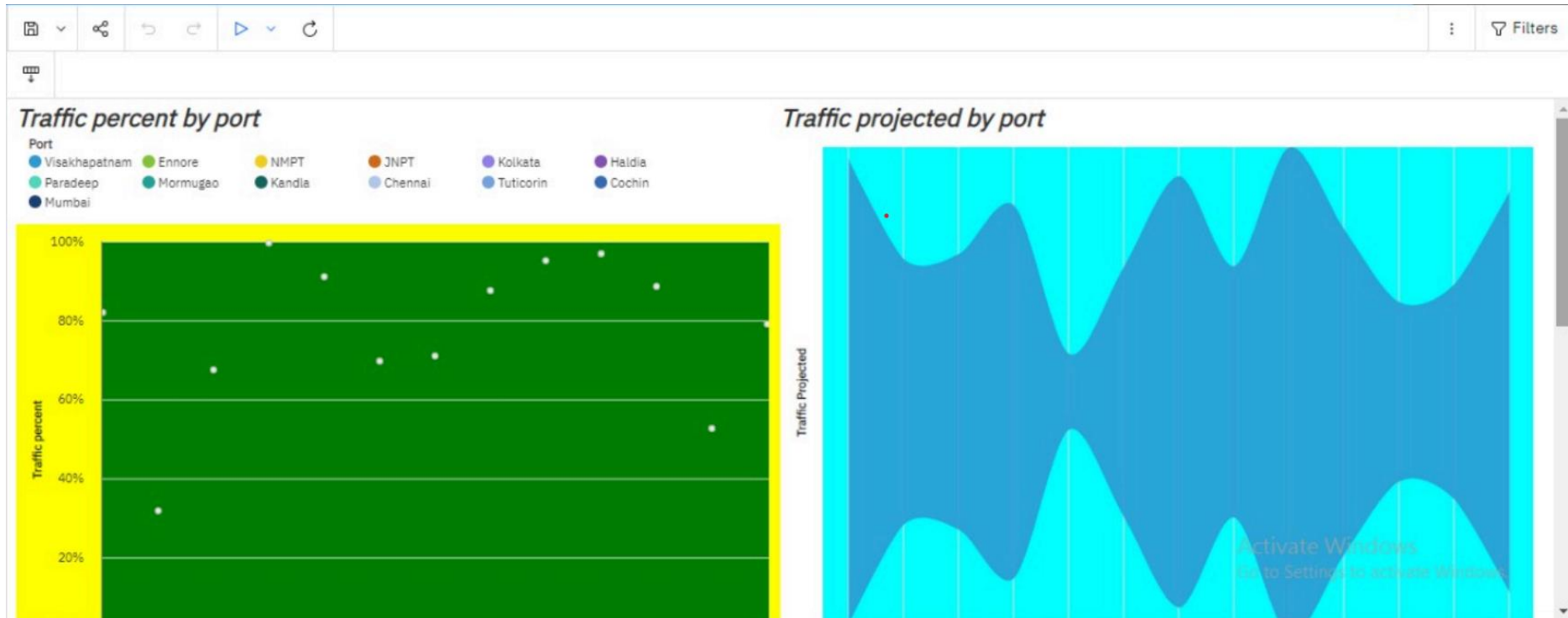


TEAM ID: PNT2022TMID00308



Report Creation

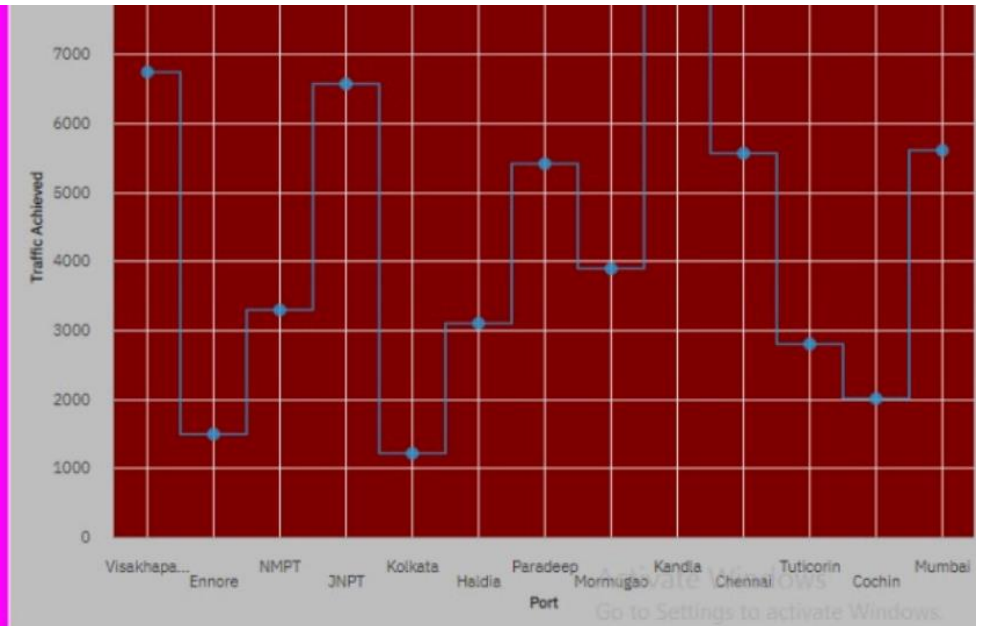
Traffic by percent by port & Traffic by port:



Total capacity projection by ports & Traffic achieved by ports:



Total Capacity projection by ports



Traffic achieved by ports