

## PROJECT DEVELOPMENT PHASE SPRINT DELIVERY -2

Team ID	PNT2022TMID14193
Project Name	Analytics for Hospital's Health-Care Data

<b>Sprint 1</b> <ul style="list-style-type: none"><li>○ Collection of Data</li><li>○ Loading the data</li><li>○ Data Preparation and Visualization</li></ul>	<b>Sprint2</b> <ul style="list-style-type: none"><li>○ Exploration of Dataset</li><li>○ Visualization of Dataset</li></ul>
<b>Sprint3</b> <ul style="list-style-type: none"><li>○ Dashboard Creation</li><li>○ Prediction of Length of Stay</li></ul>	<b>Sprint4</b> <ul style="list-style-type: none"><li>○ Monitoring the Model/System Accuracy</li><li>○ Report Creation</li></ul>

Goal of this project:

The goal is to accurately predict the Length of Stay for each patient on case by case basis so that the Hospitals can use this information for optimal resource allocation and better functioning. The length of stay is divided into 11 different classes ranging from 0-10 days to more than 100 days.

### Sprint Delivery 2:

**Collection of Data:** Hospital

Dataset Link:

[https://drive.google.com/drive/folders/1qozDgfVw04hGS8Di\\_SFhUNdUKUdjkhRT?usp=sharing](https://drive.google.com/drive/folders/1qozDgfVw04hGS8Di_SFhUNdUKUdjkhRT?usp=sharing)

### UNDERSTANDING THE DATASET:

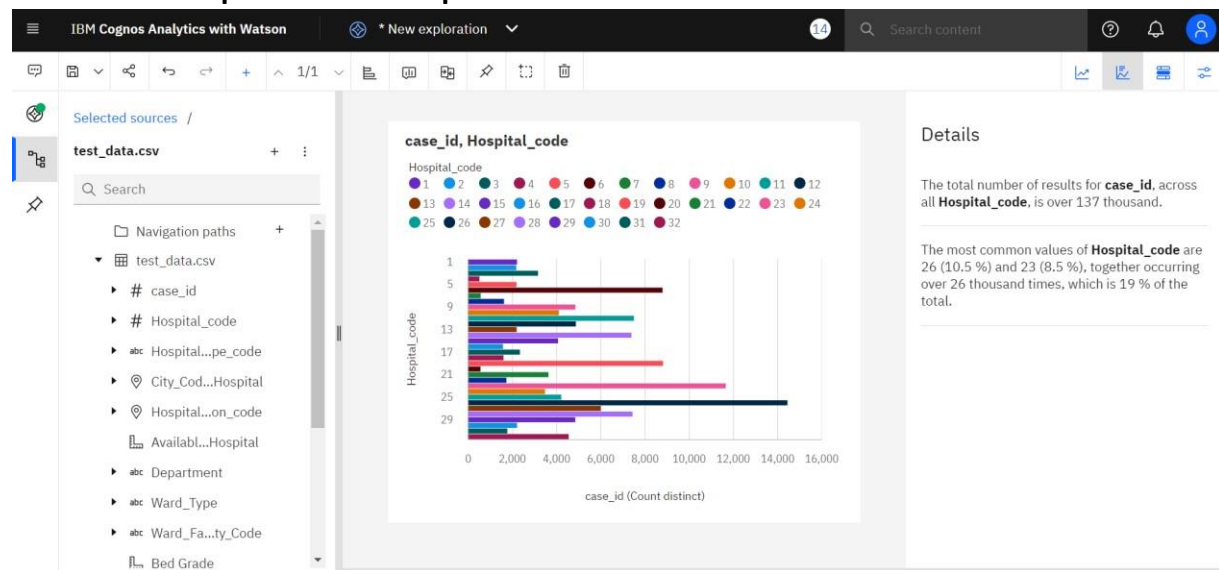
The data is spread across 3 data files (csv) and one data dictionary enclosed.

1. Test\_data.csv
2. Sample\_sub.csv
3. Train\_data\_dictionary.csv
4. Train\_data.csv

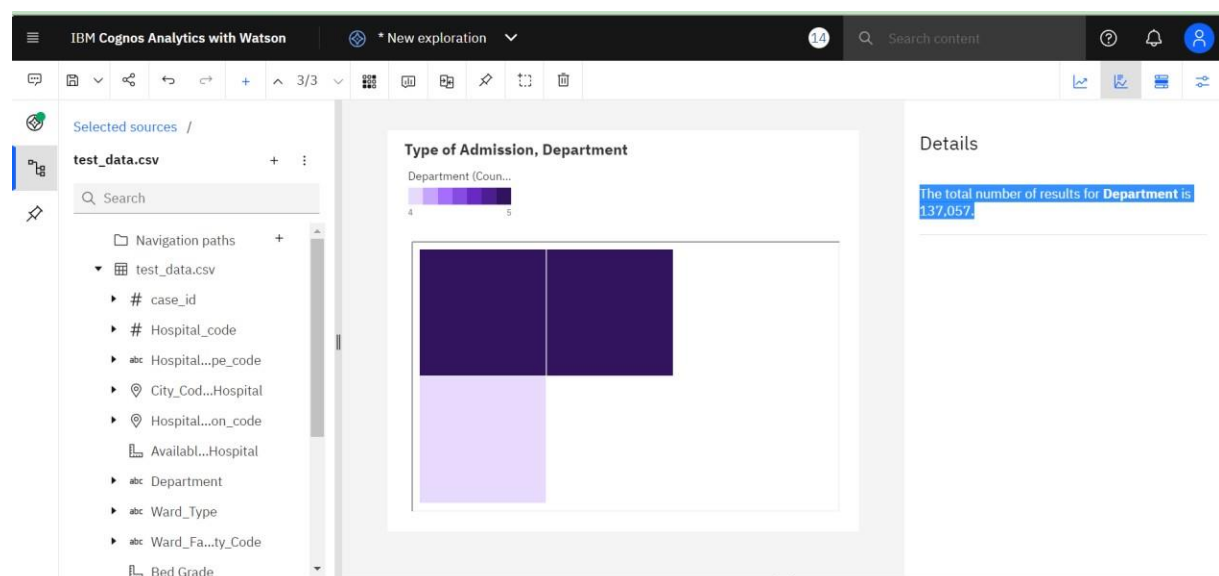
The primary data file we use is test\_data.csv consist of 17 Columns with 137057 Rows.

## Exploration of the Dataset Using IBM Cognos Analytics :

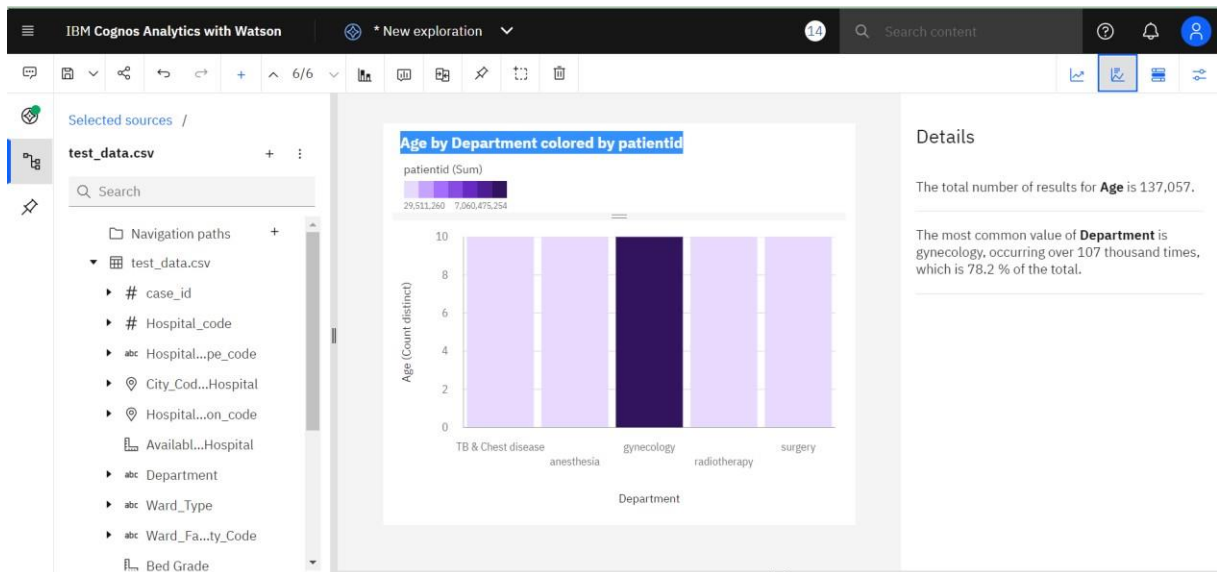
### Case ID of each patient with Hospital Code:



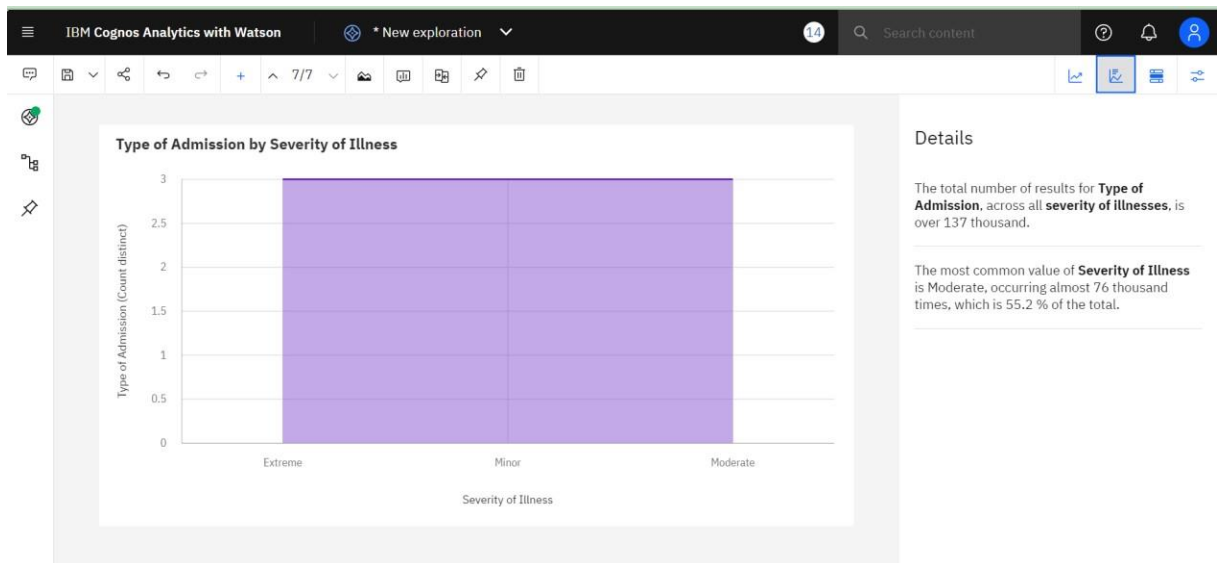
The total number of results for **Department** is 137,057.



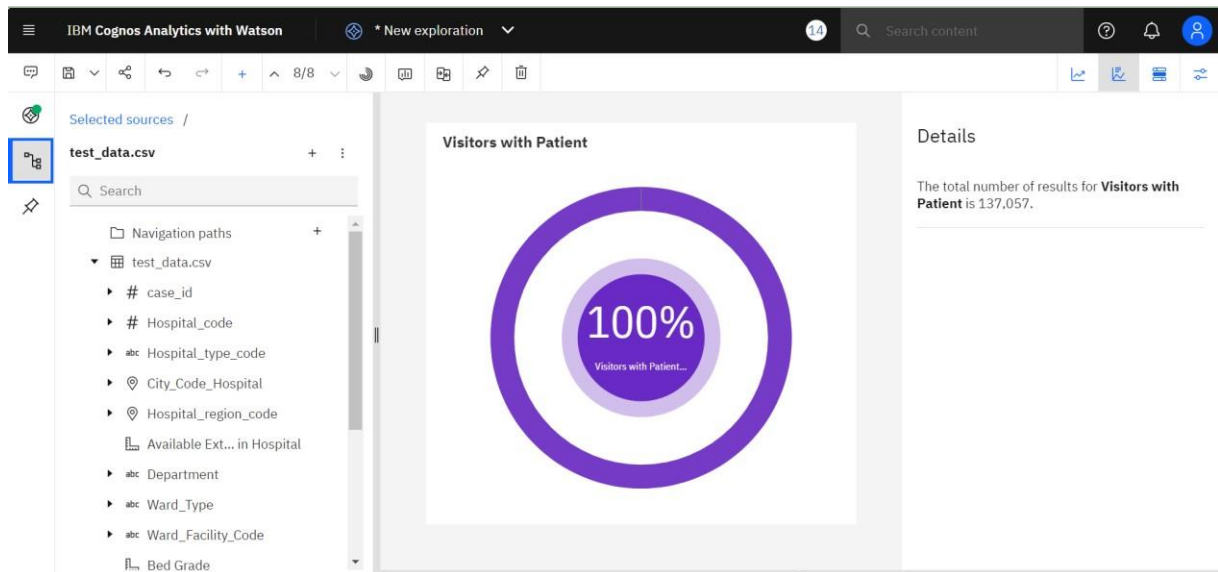
## Age by Department colored by patient id



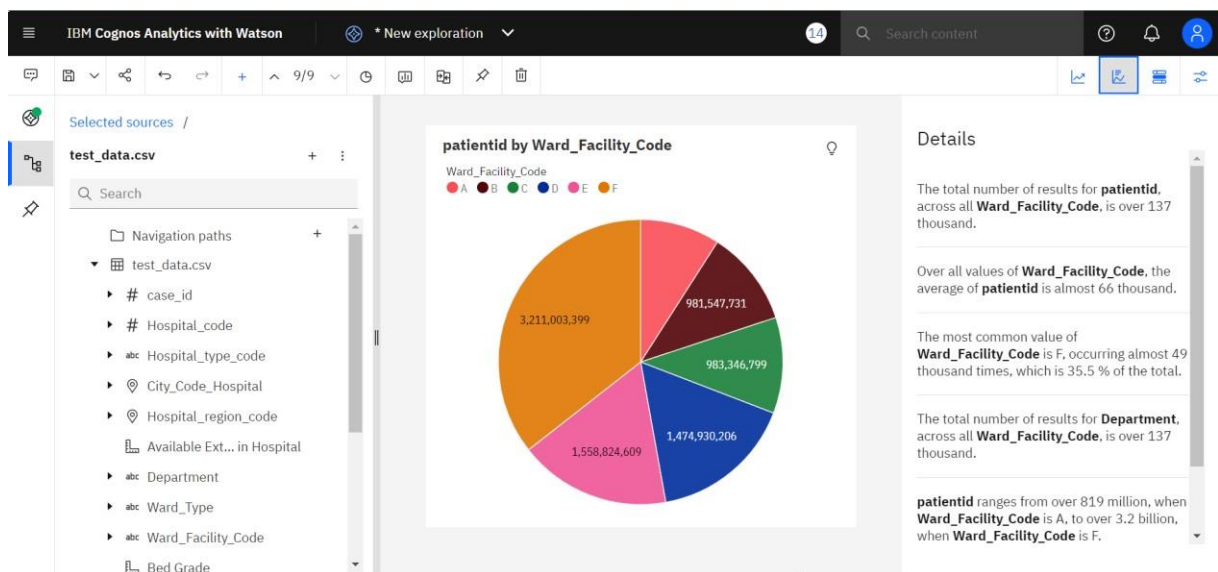
## Type of Admission by Severity of Illness



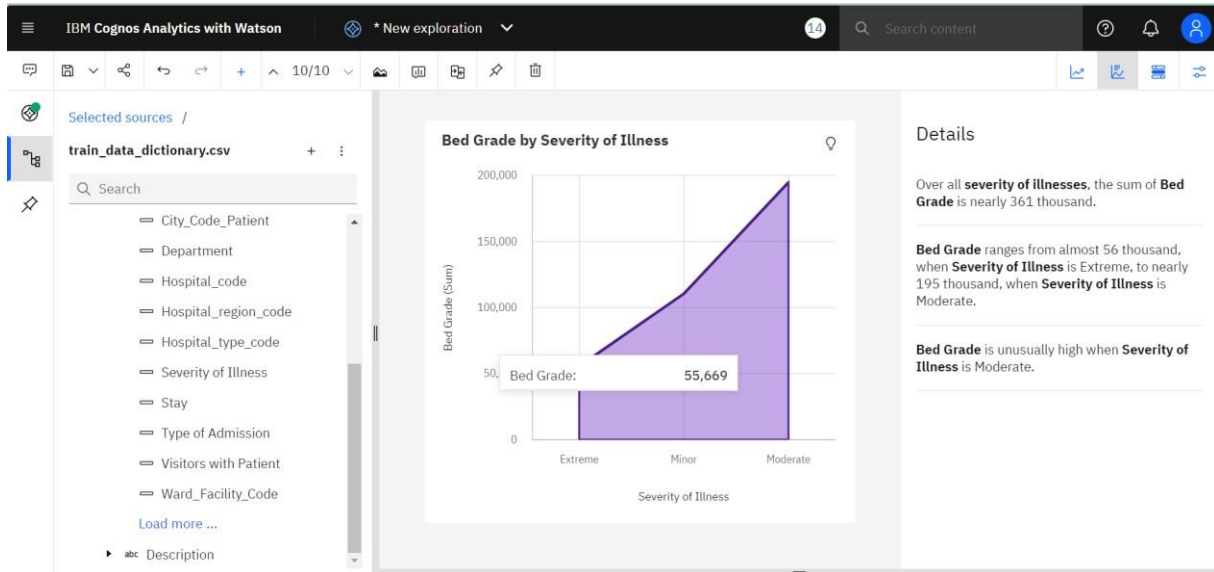
## Visitors with Patient:



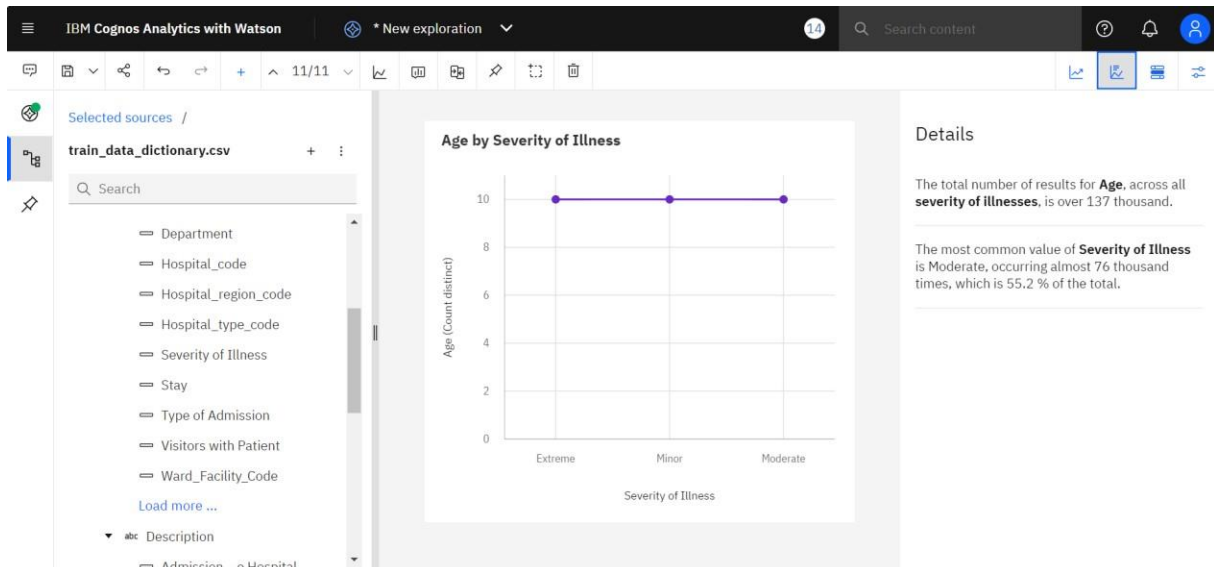
## Patientid by Ward\_Facility\_Code



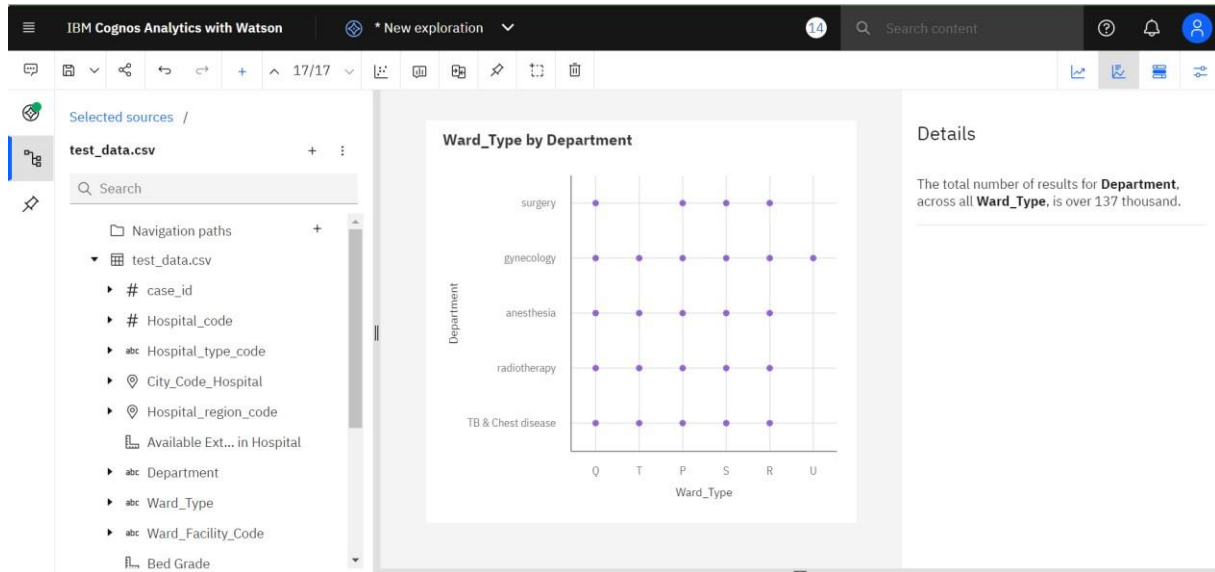
## Availability of Beds by Severity of Illness:



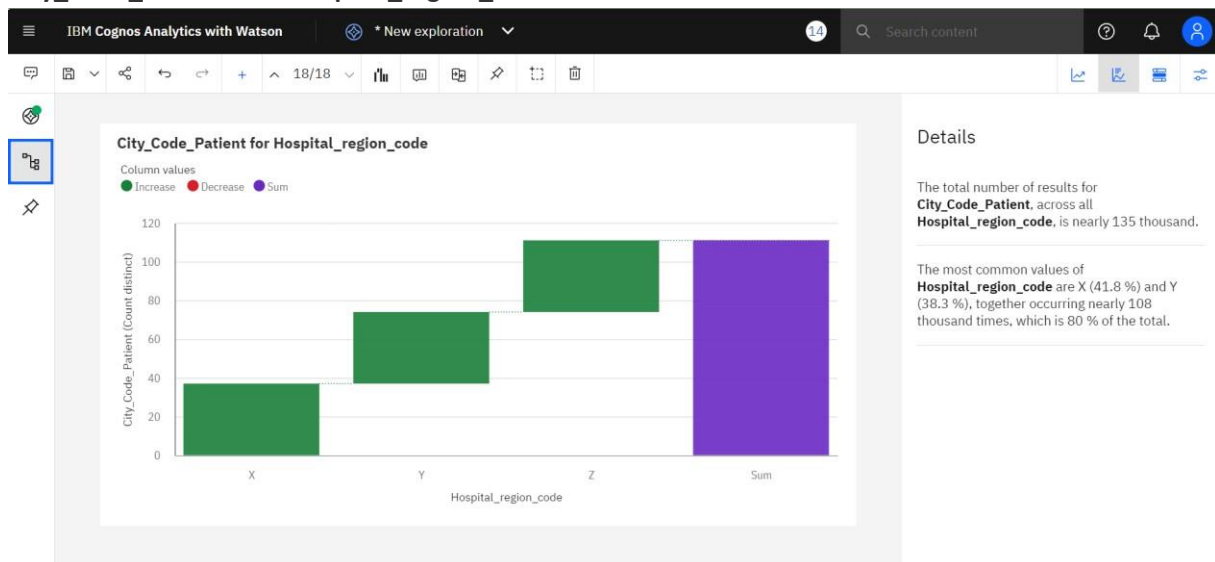
## Age by Severity of Illness



## Ward\_Type by Department



## City\_Code\_Patient for Hospital\_region\_code



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\* New exploration

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Search

Selected sources /

test\_data.csv

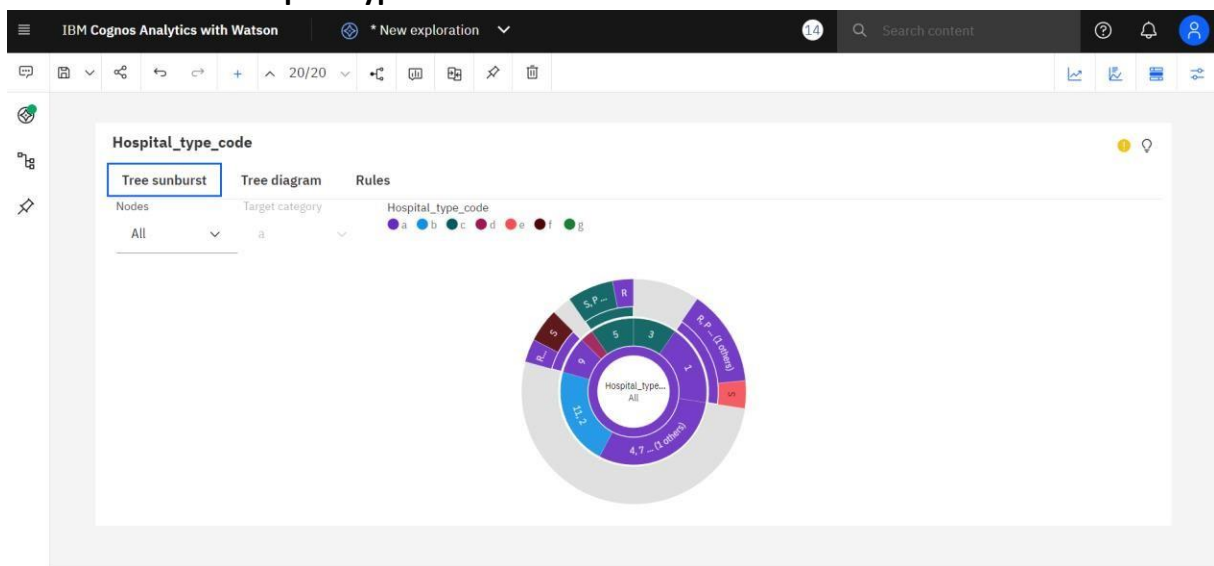
Search

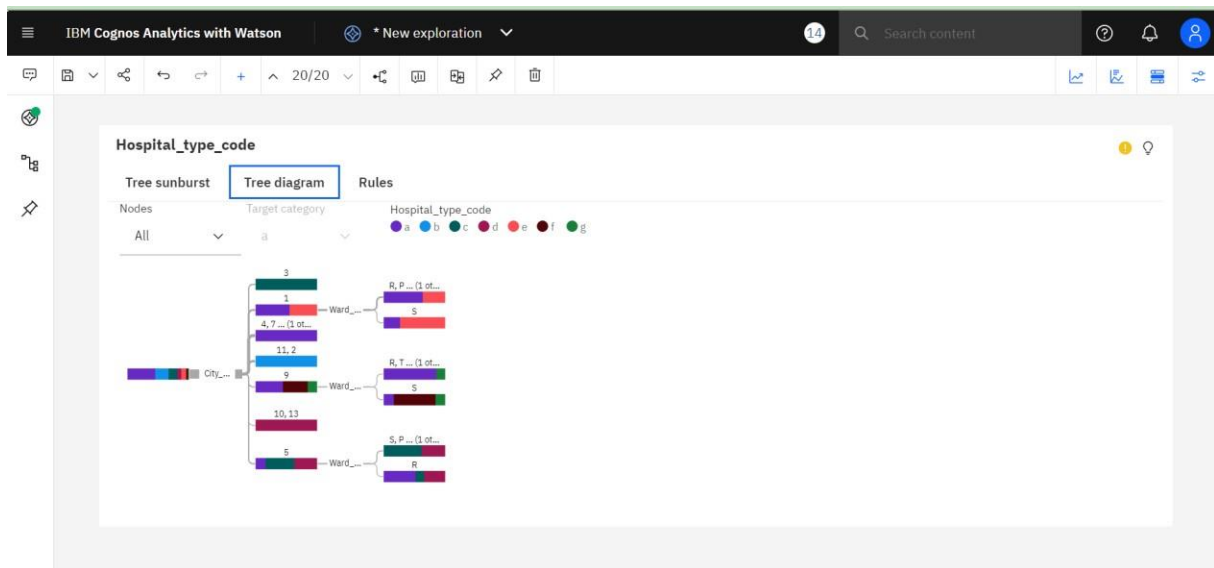
- Navigation paths
- test\_data.csv
  - # case\_id
  - # Hospital\_code
  - abc Hospital\_type\_code
  - City\_Code\_Hospital
  - Hospital\_region\_code
  - Available Ext... in Hospital
  - abc Department
  - abc Ward\_Type
  - abc Ward\_Facility\_Code
  - Bed Grade

Age

- 0-10
- 11-20
- 21-30
- 31-40
- 41-50
- 51-60
- 61-70
- 71-80
- 81-90
- 91-100

## Decision Tree on Hospital type code

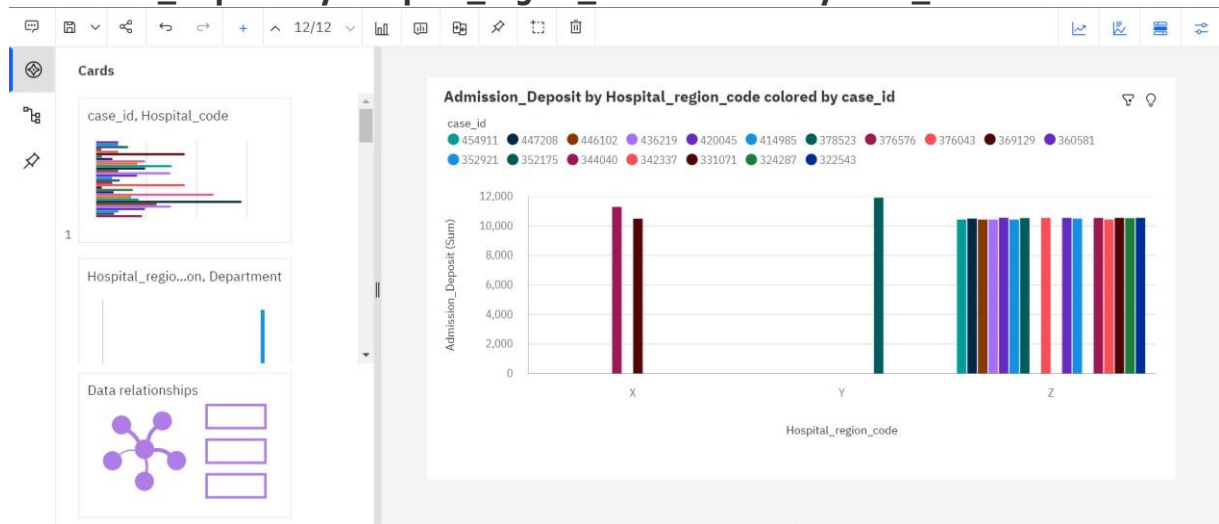




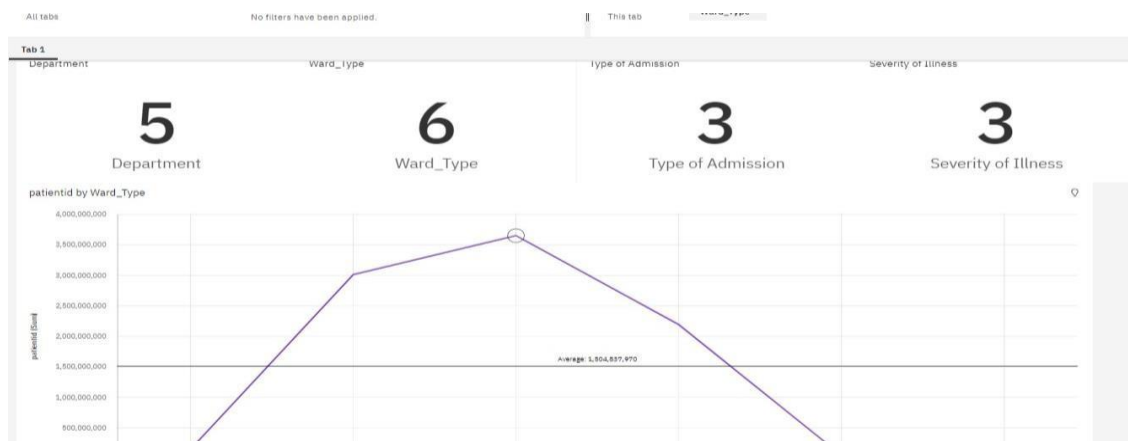
## Data Visualizations:

### 1. NUMBER OF PATIENTS BY WARD TYPE

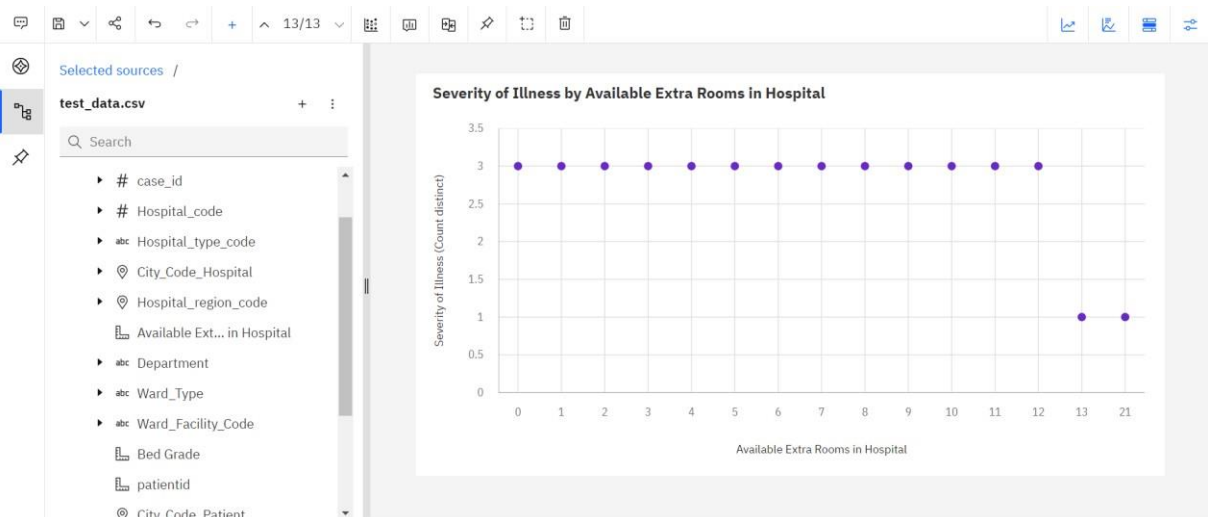
#### Admission\_Deposit by Hospital\_region\_code colored by case\_id



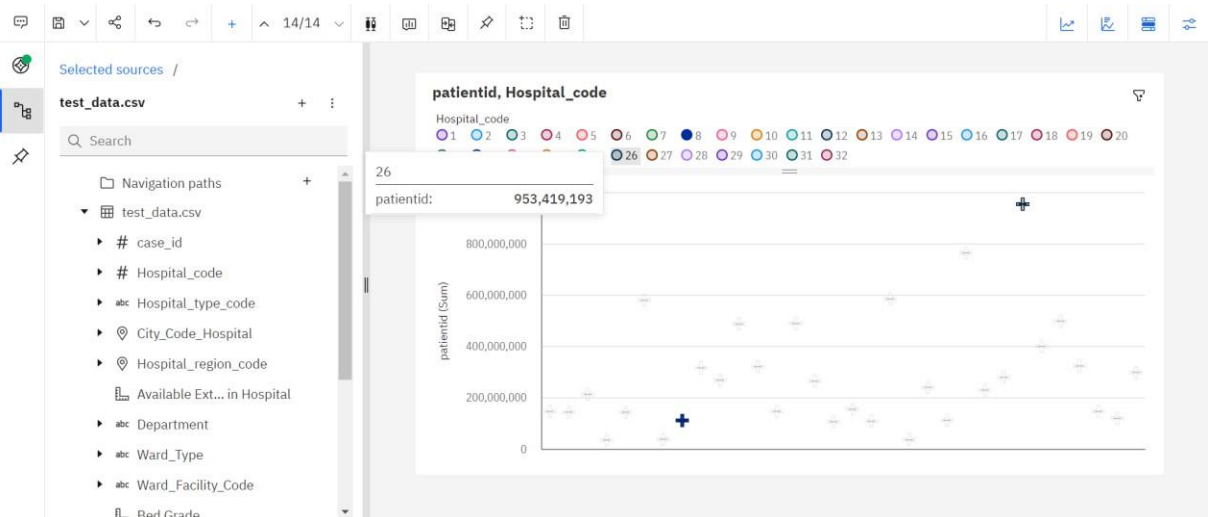
#### Severity of Illness by Available Extra Rooms in Hospital







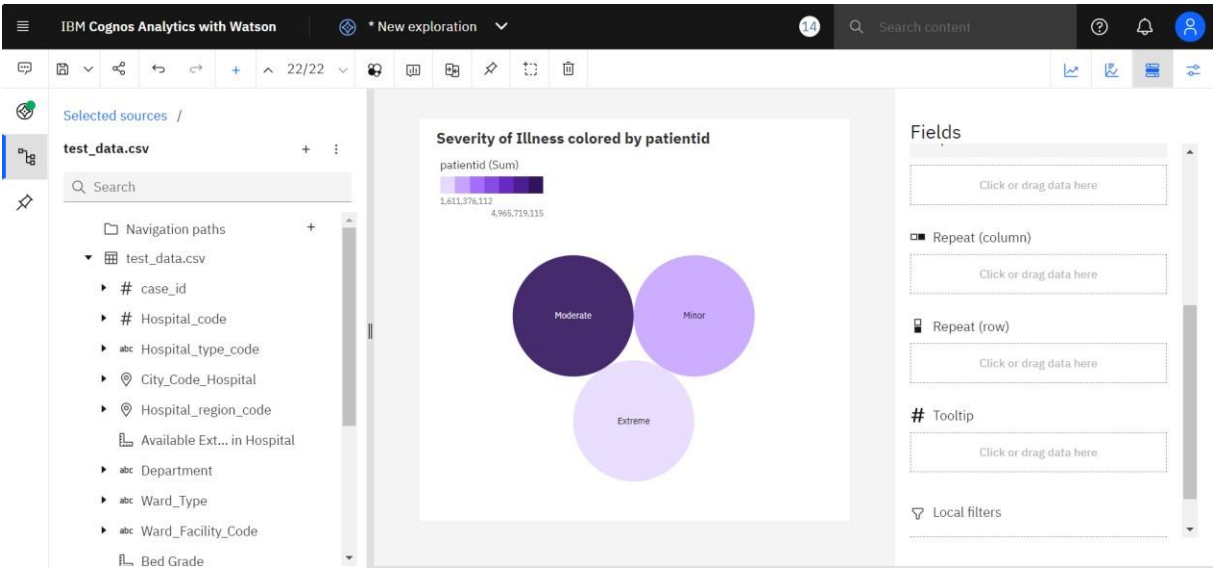
## Patient ID with Hospital\_Code



## Ward Facility Code by Hospital region code



Severity of illness with patient ID:



Ward Type with patient ID

IBM Cognos Analytics with Watson

\* New exploration

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Selected sources /

test\_data.csv

Navigation paths

- test\_data.csv
  - # case\_id
  - # Hospital\_code
  - abc Hospital\_type\_code
  - City\_Code\_Hospital
  - Hospital\_region\_code
  - Available Ext... in Hospital
  - abc Department
  - abc Ward\_Type
  - abc Ward\_Facility\_Code
  - Bed Grade

Ward\_Type and patientid

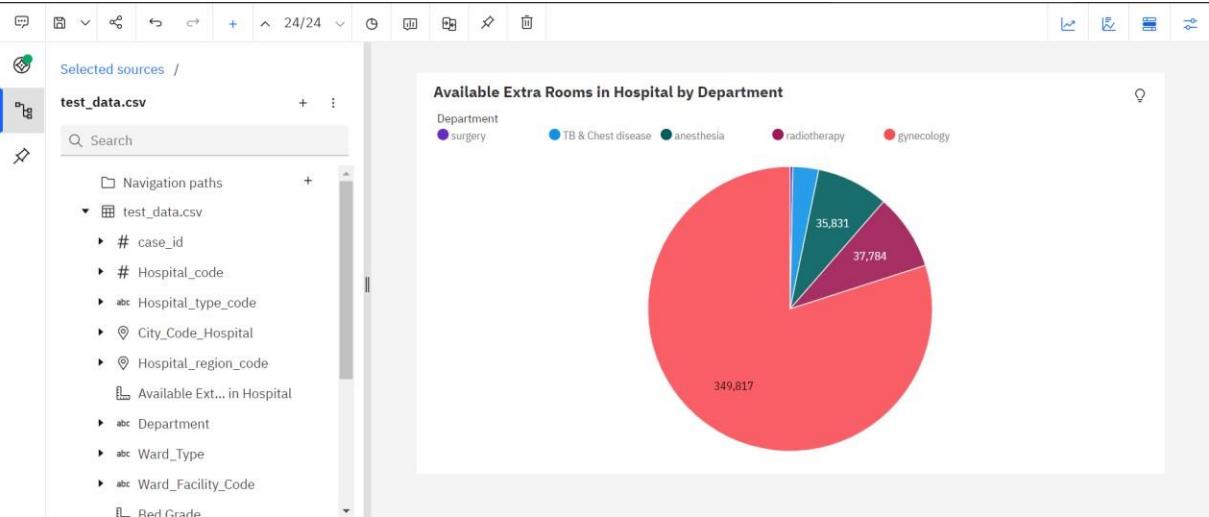
patientid	Ward_Type
74,641	U
44,496,794	T
141,226,952	P
2,188,942,517	S
3,007,314,459	Q
3,646,972,459	R

### Available Extra Rooms in Hospital by Department

35,83137,784349,817

#### Department

- surgery
- TB & Chest disease
- anesthesia
- radiotherapy
- gynecology



### Admission Deposit to Hospital

