

# Sprint Delivery Plan I

Date	28 October 2022
Team ID	PPNT2022TMID40507
Project Name	Project - Visualizing and Predicting Heart Diseases with an Interactive Dashboard

## Uploading Heart disease Prediction Dataset Using Cognos Analysis:

### USN-1:

- As a user, I can gather the details of the patients and storing the data set.
- Uploading the dataset of heart\_disease\_prediction.csv file to IBM Cognos Analytics.

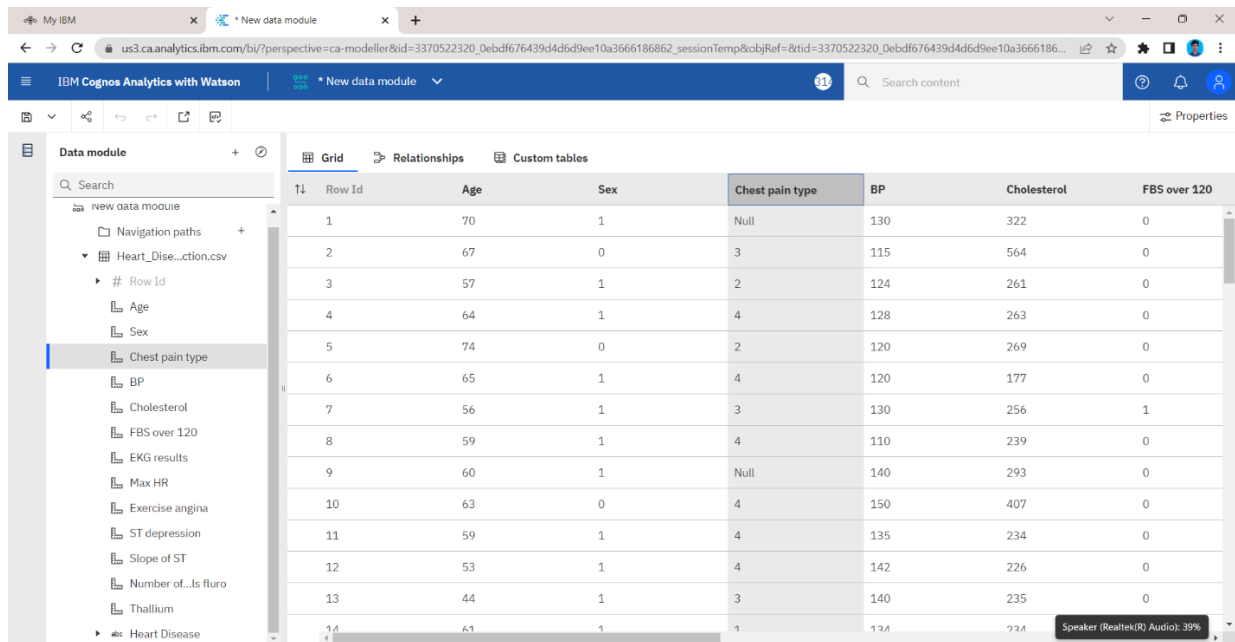
The screenshot shows the IBM Cognos Analytics web interface. The browser address bar displays the URL: `us3.ca.analytics.ibm.com/bi/?perspective=content&tab=myContent&folder=i5AFA40E983CE4C28A56DF222D1C596C0`. The page title is "Content". Below the title, there are tabs for "My content", "Team content", and "Samples". The "My content" tab is selected. A table lists the content items:

Name	Type	Last Accessed
50_Startups.csv	Uploaded file	15/09/2022, 08:39
Bank Analysis Dashboard	Dashboard	19/09/2022, 01:35
bank.csv	Uploaded file	19/09/2022, 00:03
bikebuyer.csv	Uploaded file	14/09/2022, 09:02
Heart_Disease_Prediction.csv	Uploaded file	30/10/2022, 01:19
Olympic Events.xlsx	Uploaded file	08/09/2022, 10:19
Olympic Medals.xlsx	Uploaded file	08/09/2022, 10:19

## Data Cleaning and Data Processing using Cognos Analytics:

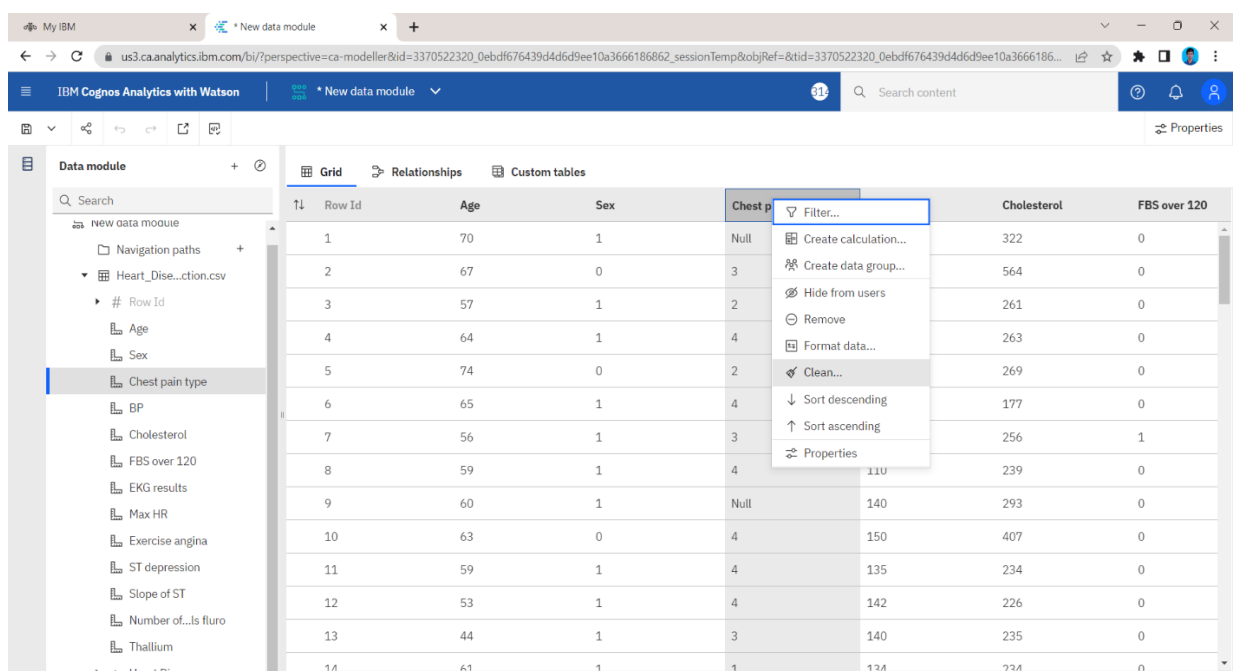
### USN-2:

- As an Analyst, I will check the data set and clean the dataset to create an efficient model.
- To Data cleaning the null values in heart\_disease\_prediction.csv Dataset.



The screenshot shows the IBM Cognos Analytics interface. On the left, the 'Data module' pane lists the columns of the 'Heart\_Disease\_prediction.csv' dataset: Row Id, Age, Sex, Chest pain type, BP, Cholesterol, FBS over 120, EKG results, Max HR, Exercise angina, ST depression, Slope of ST, Number of...Is fluoro, and Thallium. The main area displays a table with 13 rows of data. The 'Chest pain type' column has null values for rows 1, 3, 5, 7, 9, 11, and 13.

Row Id	Age	Sex	Chest pain type	BP	Cholesterol	FBS over 120
1	70	1	Null	130	322	0
2	67	0	3	115	564	0
3	57	1	2	124	261	0
4	64	1	4	128	263	0
5	74	0	2	120	269	0
6	65	1	4	120	177	0
7	56	1	3	130	256	1
8	59	1	4	110	239	0
9	60	1	Null	140	293	0
10	63	0	4	150	407	0
11	59	1	4	135	234	0
12	53	1	4	142	226	0
13	44	1	3	140	235	0



The screenshot shows the same IBM Cognos Analytics interface, but with a context menu open over the 'Chest pain type' column. The menu options are: Filter..., Create calculation..., Create data group..., Hide from users, Remove, Format data..., Clean..., Sort descending, Sort ascending, and Properties. The 'Clean...' option is highlighted, indicating the next step in the data cleaning process.

Row Id	Age	Sex	Chest p	Cholesterol	FBS over 120
1	70	1	Null	322	0
2	67	0	3	564	0
3	57	1	2	261	0
4	64	1	4	263	0
5	74	0	2	269	0
6	65	1	4	177	0
7	56	1	3	256	1
8	59	1	4	239	0
9	60	1	Null	293	0
10	63	0	4	407	0
11	59	1	4	234	0
12	53	1	4	226	0
13	44	1	3	235	0

IBM Cognos Analytics with Watson

Search content

Data module

new data module

Navigation paths

Heart\_Disease...ction.csv

# Row Id

Age

Sex

Chest pain type

BP

Cholesterol

FBS over 120

EKG results

Max HR

Exercise angina

ST depression

Slope of ST

Number of...ls fluoro

Thallium

Heart Disease

Grid

Relationships

Custom tables

Row Id

Age

Sex

Chest pain type

BP

Cholesterol

FBS over 120

1

70

1

Null

130

322

0

2

115

564

0

3

124

261

0

4

128

263

0

5

120

269

0

6

120

177

0

7

130

256

1

8

110

239

0

9

140

293

0

10

150

407

0

11

135

234

0

12

142

226

0

13

140

235

0

14

134

234

0

15

61

1

1

134

234

0

Clean - Chest pain type

NULL values

☐ Replace this value with NULL

☒ Replace NULL values with

0

4

Cancel

Clean

IBM Cognos Analytics with Watson

Search content

Data module

new data module

Navigation paths

Heart\_Disease...ction.csv

# Row Id

Age

Sex

Chest pain type

BP

Cholesterol

FBS over 120

EKG results

Max HR

Exercise angina

ST depression

Slope of ST

Number of...ls fluoro

Thallium

Heart Disease

Grid

Relationships

Custom tables

Row Id

Age

Sex

Chest pain type

BP

Cholesterol

FBS over 120

1

70

1

4

130

322

0

2

67

0

3

57

1

2

124

261

0

4

64

1

4

128

263

0

5

74

0

2

120

269

0

6

65

1

4

120

177

0

7

56

1

3

130

256

1

8

59

1

4

110

239

0

9

60

1

4

140

293

0

10

63

0

4

150

407

0

11

59

1

4

135

234

0

12

53

1

4

142

226

0

13

44

1

3

140

235

0

14

61

1

1

134

234

0

15

61

1

1

134

234

0

My IBM | \* New data module

us3.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=3370522320\_0ebdf676439d4d6d9ee10a3666186862\_sessionTemp&objRef=&tid=3370522320\_0ebdf676439d4d6d9ee10a3666186...

IBM Cognos Analytics with Watson | \* New data module | Search content | Properties

Data module

new data module

Navigation paths

Heart\_Dise...ction.csv

# Row Id

Age

Sex

Chest pain type

BP

Cholesterol

FBS over 120

EKG results

Max HR

Exercise angina

ST depression

Slope of ST

Number of...ls fluro

Thallium

Heart Disease

Grid

Relationships

Custom tables

	Exercise angina	ST depression	Slope of ST	Number of vessels fluro	Thallium	Heart Disease
0	2.4	2	3	3	Presence	
0	1.6	2	Null	7	Absence	
0	0.3	1	Null	7	Presence	
1	0.2	2	1	7	Absence	
1	0.2	1	1	3	Absence	
0	0.4	1	Null	7	Absence	
1	0.6	2	1	6	Presence	
1	1.2	2	1	7	Presence	
0	1.2	2	2	7	Presence	
0	4	2	3	7	Presence	
0	0.5	2	0	7	Absence	
1	0	1	0	7	Absence	
0	0	1	0	3	Absence	
0	2.6	2	2	3	Presence	

My IBM | \* New data module

us3.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=3370522320\_0ebdf676439d4d6d9ee10a3666186862\_sessionTemp&objRef=&tid=3370522320\_0ebdf676439d4d6d9ee10a3666186...

IBM Cognos Analytics with Watson | \* New data module | Search content | Properties

Data module

new data module

- Navigation paths
- Heart\_Dise...ction.csv
  - # Row Id
  - Age
  - Sex
  - Chest pain type
  - BP
  - Cholesterol
  - FBS over 120
  - EKG results
  - Max HR
  - Exercise angina
  - ST depression
  - Slope of ST
  - Number of...ls fluro
  - Thallium
  - Heart Disease

	Exercise angina	ST depression	Slope of ST	Num	Heart Disease
0	2.4	2	3	3	Presence
0	1.6	2	Null	7	Absence
0	0.3	1	Null	7	Presence
1	0.2	2	1	7	Absence
1	0.2	1	1	3	Absence
0	0.4	1	Null	7	Absence
1	0.6	2	1	6	Presence
1	1.2	2	1	7	Presence
0	1.2	2	2	7	Presence
0	4	2	3	7	Presence
0	0.5	2	0	7	Absence
1	0	1	0	7	Absence
0	0	1	0	3	Absence
0	2.6	2	2	3	Presence

Filter...  
 Create calculation...  
 Create data group...  
 Hide from users  
 Remove  
 Format data...  
 Clean...  
 Sort descending  
 Sort ascending  
 Properties

IBM Cognos Analytics with Watson

Search content

Data module

Grid Relationships Custom tables

Exercise angina ST depression Slope of ST Number of vessels fluro Thallium Heart Disease

new data module

Navigation paths

Heart\_Dise...ction.csv

# Row Id

Age

Sex

Chest pain type

BP

Cholesterol

FBS over 120

EKG results

Max HR

Exercise angina

ST depression

Slope of ST

Number of...ls fluro

Thallium

Heart Disease

Clean - Number of vessels fluro

NULL values

☐ Replace this value with NULL 0

☒ Replace NULL values with 0

Cancel Clean

	Exercise angina	ST depression	Slope of ST	Number of vessels fluro	Thallium	Heart Disease
0	0	2.4	2	3	3	Presence
0	0			Null	7	Absence
0	0			Null	7	Presence
1	1			1	7	Absence
1	1			1	3	Absence
0	0			Null	7	Absence
1	1			1	6	Presence
1	1			1	7	Presence
0	0			2	7	Presence
0	0	4	2	3	7	Presence
0	0	0.5	2	0	7	Absence
1	1	0	1	0	7	Absence
0	0	0	1	0	3	Absence
0	0	2.6	2	2	2	Presence

IBM Cognos Analytics with Watson

Search content

Data module

Grid Relationships Custom tables

Exercise angina ST depression Slope of ST Number of vessels fluro Thallium Heart Disease

new data module

Navigation paths

Heart\_Dise...ction.csv

# Row Id

Age

Sex

Chest pain type

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Exercise angina

ST depression

Slope of ST

Number of...ls fluro

Thallium

Heart Disease

	Exercise angina	ST depression	Slope of ST	Number of vessels fluro	Thallium	Heart Disease
0	0	2.4	2	3	3	Presence
0	0	1.6	2	0	7	Absence
0	0	0.3	1	0	7	Presence
1	1	0.2	2	1	7	Absence
1	1	0.2	1	1	3	Absence
0	0	0.4	1	0	7	Absence
1	1	0.6	2	1	6	Presence
1	1	1.2	2	1	7	Presence
0	0	1.2	2	2	7	Presence
0	0	4	2	3	7	Presence
0	0	0.5	2	0	7	Absence
1	1	0	1	0	7	Absence
0	0	0	1	0	3	Absence
0	0	2.6	2	2	2	Presence

IBM Cognos Analytics with Watson

Search content

Properties

Data module

new data module

- Navigation paths
- Heart\_Disease...ction.csv
  - # Row Id
  - Age
  - Sex
  - Chest pain type
  - BP
  - Cholesterol
  - FBS over 120
  - EKG results
  - Max HR
  - Exercise angina
  - ST depression
  - Slope of ST
  - Number of...ls fluoro
  - Thallium

Grid

	Exercise angina	ST depression	Slope of ST	Number of vessels fluoro	Thallium	
	0	2.4	2	3	3	
	0	1.6	2	0	7	
	0	0.3	1	0	7	
	1	0.2	2	1	7	
	1	0.2	1	1	3	
	0	0.4	1	0	7	
	1	0.6	2	1	6	
	1	1.2	2	1	7	
	0	1.2	2	2	7	
	0	4	2	3	7	Presence
	0	0.5	2	0	7	Absence
	1	0	1	0	7	Absence
	0	0	1	0	3	Absence
	0	2.6	2	2	3	Presence

Filter...

- Create data group...
- Create navigation path...
- Split...
- Hide from users
- Remove
- Format data...
- Clean...
- Sort descending
- Sort ascending
- Properties

IBM Cognos Analytics with Watson

Search content

Properties

Data module

new data module

- Navigation paths
- Heart\_Disease...ction.csv
  - # Row Id
  - Age
  - Sex
  - Chest pain type
  - BP
  - Cholesterol
  - FBS over 120
  - EKG results
  - Max HR
  - Exercise angina
  - ST depression
  - Slope of ST
  - Number of...ls fluoro
  - Thallium

Grid

	Exercise angina	ST depression	Slope of ST	Number of vessels fluoro	Thallium	Heart Disease
	0	2.4	2	3	3	Presence
	0	1.6	2	0	7	Absence
	0	0.3	1	0	7	Presence
	1	0.2	2	1	7	Absence
	1	0.2	1	1	3	Absence
	0	0.4	1	0	7	Absence
	1	0.6	2	1	6	Presence
	1	1.2	2	1	7	Presence
	0	1.2	2	2	7	Presence
	0	4	2	3	7	Presence
	0	0.5	2	0	7	Presence
	1	0	1	0	7	Absence
	0	0	1	0	3	Absence
	0	2.6	2	2	3	Presence

Clean - Heart Disease

Whitespace

☐ Trim leading and trailing whitespace

Convert case to

☐ UPPERCASE ☐ lowercase ☒ Do not change

Return a substring of characters

Start  Length

Preview

This is a preview

NULL values

☐ Replace this value with NULL

☒ Replace NULL values with

Cancel Clean

The screenshot shows the IBM Cognos Analytics interface. On the left, a sidebar lists the data module 'new data module' and its contents, including 'Heart\_Disease...ction.csv'. The main area displays a table with the following columns: Exercise angina, ST depression, Slope of ST, Number of vessels fluoro, Thallium, and Heart Disease. The table contains 14 rows of data.

Exercise angina	ST depression	Slope of ST	Number of vessels fluoro	Thallium	Heart Disease
0	0	1	0	3	Absence
1	3.4	3	0	7	Presence
1	0.9	2	0	7	Presence
1	0	1	2	7	Presence
1	1.9	1	1	7	Presence
0	0	1	0	3	Presence
0	0	1	0	3	Absence
0	0	1	0	3	Absence
0	0	1	0	7	Presence
0	0	1	0	3	Absence
1	0.4	1	0	3	Absence
0	0	1	0	7	Absence
0	2.2	2	1	6	Presence
0	0	1	0	3	Absence

## Creating The Data Module using Cognos Analytics:

### USN-3:

- As an Analyst I will also correct the raw data and create a data module.
- I will Create the data module using heart\_disease\_prediction.csv Dataset.

The screenshot shows the IBM Cognos Analytics interface. On the left, a sidebar lists the data module 'new data module' and its contents, including 'Heart\_Disease...ction.csv'. The main area displays a table with the following columns: Exercise angina, ST depression, Slope of ST, Number of vessels fluoro, Thallium, and Heart Disease. The table contains 14 rows of data.

Exercise angina	ST depression	Slope of ST	Number of vessels fluoro	Thallium	Heart Disease
0	0	1	0	3	Absence
1	3.4	3	0	7	Presence
1	0.9	2	0	7	Presence
1	0	1	2	7	Presence
1	1.9	1	1	7	Presence
0	0	1	0	3	Presence
0	0	1	0	3	Absence
0	0	1	0	3	Absence
0	0	1	0	7	Presence
0	0	1	0	3	Absence
1	0.4	1	0	3	Absence
0	0	1	0	7	Absence
0	2.2	2	1	6	Presence
0	0	1	0	3	Absence

My IBM | Heart disease Prediction data module

us3.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=ib5836892f07a46c0a4d4dd3e95150841&objRef=ib5836892f07a46c0a4d4dd3e95150841&tid=3370522320\_0ebdf676439d4d6...

IBM Cognos Analytics with Watson | Heart disease Pr ... data module

Search content

Properties

Data module

Search

Heart diseases...data module

- Navigation paths
- Heart\_Dise...ction.csv
  - # Row Id
  - Age
  - Sex
  - Chest pain type
  - BP
  - Cholesterol
  - FBS over 120
  - EKG results
  - Max HR
  - Exercise angina
  - ST depression
  - Slope of ST
  - Number of...Is fluro
  - Thallium

Grid Relationships Custom tables

Preview data

To preview data, select a table, a column in a table, or a folder that contains columns.

My IBM | Heart disease Prediction data module

us3.ca.analytics.ibm.com/bi/?perspective=ca-modeller&id=ib5836892f07a46c0a4d4dd3e95150841&objRef=ib5836892f07a46c0a4d4dd3e95150841&tid=3370522320\_0ebdf676439d4d6...

IBM Cognos Analytics with Watson | Heart disease Pr ... data module

Search content

Properties

Data module

Search

Heart diseases...data module

- Navigation paths
- Heart\_Dise...ction.csv
  - # Row Id
  - Age
  - Sex
  - Chest pain type
  - BP
  - Cholesterol
  - FBS over 120
  - EKG results
  - Max HR
  - Exercise angina
  - ST depression
  - Slope of ST
  - Number of...Is fluro
  - Thallium

Grid Relationships Custom tables

Heart\_Dise...ction.csv

Diagram settings

- Cardinality
- Focus mode

Degrees of separation: 1

1 100