

## PROJECT DEVELOPMENT PHASE

### Delivery of Sprint - 1

Team ID	PNT2022TMID45815
Project Name	VISUALIZING AND PREDICTING HEART DISEASE WITH AN INTERACTIVE DASH BOARD.

### Fetch data from external API (Kaggle API)



```
Kaggle_API_To_Gather_The_Dataset.ipynb
File Edit View Insert Runtime Tools Help All changes saved

+ Code + Text
RAM 100% Disk 100% Editing

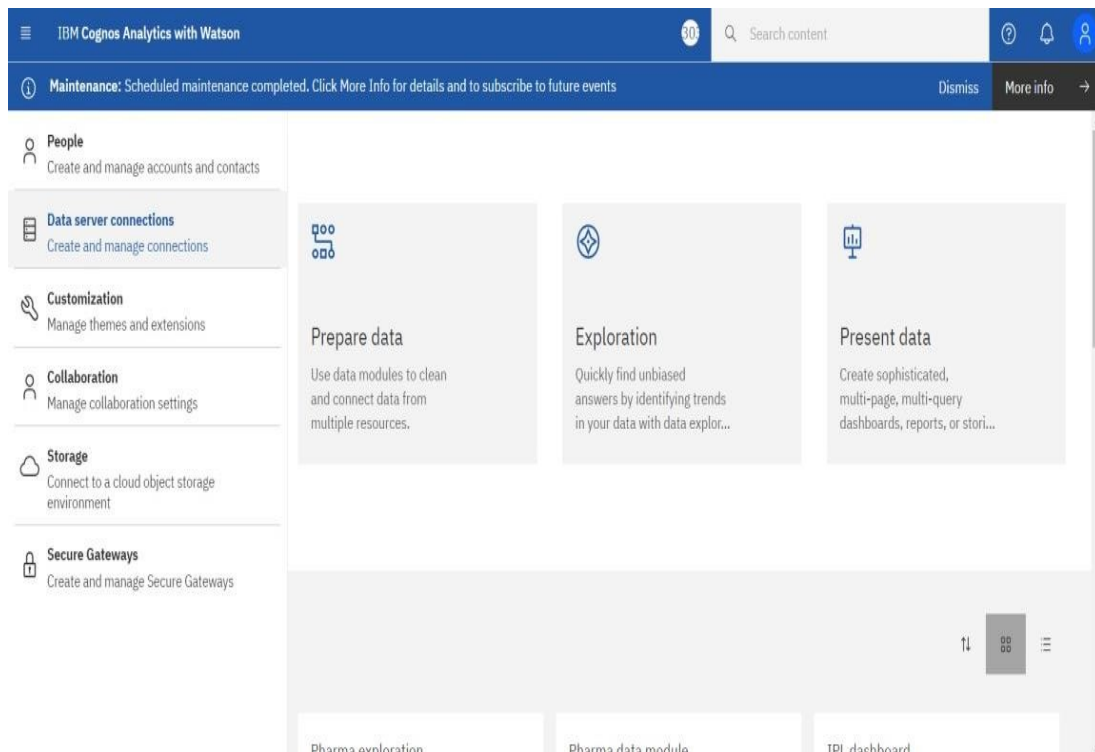
[1] !pip install -q kaggle
[2] !mkdir ~/.kaggle # creating a kaggle directory
[3] !cp kaggle.json ~/.kaggle/ # copying json file to folder
cp: cannot stat 'kaggle.json': No such file or directory
[4] !chmod 600 ~/.kaggle/kaggle.json # changing the permissions to json
chmod: cannot access '/root/.kaggle/kaggle.json': No such file or directory
[5] !kaggle datasets download -d rajasris/heart-disease-prediction-data

Traceback (most recent call last):
  File "/usr/local/bin/kaggle", line 5, in <module>
    from kaggle.cli import main
  File "/usr/local/lib/python3.7/dist-packages/kaggle/__init__.py", line 23, in <module>
    api.authenticate()
  File "/usr/local/lib/python3.7/dist-packages/kaggle/api/kaggle_api_extended.py", line 166, in authenticate
    self.config_file, self.config_dir))
OSError: Could not find kaggle.json. Make sure it's located in /root/.kaggle. Or use the environment method.

0s completed at 1:54 PM
```

### IBM DB2 service creation and DB2 connectivity with cognos:

Step 1: In cognos we have to perform data server connections.



## STEP 2: Connection of New Data Server

The screenshot shows the 'Edit IBM Db2 connection' dialog in the IBM Cognos Analytics with Watson interface. The dialog is divided into two main sections: 'New data server connection' on the left and 'Edit IBM Db2 connection' on the right.

**New data server connection (Left Panel):**

- Owner:** Unknown
- Created:** Modified: Type: Connection
- General Settings Schemas Permissions** (Tabs)
- Connection details** (Edit >)
- Authentication method:**
  - ☒ Connect anonymously
  - ☐ Prompt for the user ID and password
  - ☐ Use an external namespace
  - ☐ Use the following signon:
- Test:** Not tested
- Save** button

**Edit IBM Db2 connection (Right Panel):**

- JDBC URL:** jdbc:db2://<hostname>:<port>:<databasename>
- Driver class name:** com.ibm.db2.jcc.DB2Driver
- Restore** button
- Example URL** (Expanded)
- Connection properties:** ?
- Close** button

## STEP 3: In IBM cloud go to catalog and search for db2.

The screenshot shows the IBM Cloud Catalog interface. The top navigation bar includes 'Sell on IBM Cloud' and 'Catalog settings'. The main content area is titled 'Catalog' and features a search bar with the query 'db2'. Below the search bar, a dropdown menu displays the following results:

- Db2
- Db2 Warehouse
- SAP NetWeaver(ABAP stack) with DB2 standard system

On the right side of the search results, there is a filter set to 'Alphabetically' and a view toggle button. Below the search results, a list of services is displayed, including:

- Analytics Engine** By IBM: Submit your Apache Spark applications as needed and customize the Spark runtimes to satisfy the requirements of your application. Lite • Free • HIPAA Enabled • IAM-enabled •
- AnonTech ViziVault Platform** By Anon Technology, Inc.: Manage personal information as-a-service safely, securely, and in compliance with data privacy regulations using ViziVault. Lite • Free • HIPAA Enabled • IAM-enabled •
- API Connect** By IBM: An enterprise-grade platform for creating, securing, managing, sharing, monetizing, and analyzing custom APIs located on-premises... Lite • Free • EU Supported • IAM-enabled •

The URL at the bottom of the page is <https://cloud.ibm.com/catalog/services/db2>.

**STEP 4:** Create a new db2 connection.

A fully managed, highly-performant relational data store running the enterprise-class Db2 database engine.

Create

About

Type

Service

Provider

IBM

Last updated

07/06/2022

Category

Databases

Compliance

EU Supported  
HIPAA Enabled  
IAM-enabled

Location

Sydney  
Frankfurt  
Dallas  
Sao Paulo  
Toronto  
Tokyo  
Milan

Select a location

Dallas (us-south)

Select a pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or location: [United States](#)

Plan	Features	Pricing
Lite	200 MB of data storage 5 simultaneous connections Shared multitenant system	Free

The Free plan provides a free Db2 service for development and evaluation. The plan has a set amount of limitations as shown. You can continue using the free plan for as long as needed, however, users are asked to re-extend their free account every 90 days by email. If you do not re-extend, your free account is cleaned out a further 90 days later. This helps provide free resources for everyone.

Lite plan services are deleted after 30 days of inactivity.

Summary

Db2

Location: Dallas

Plan: Lite

Service name: Db2-m7

Resource group: Default

Create

Add to estimate

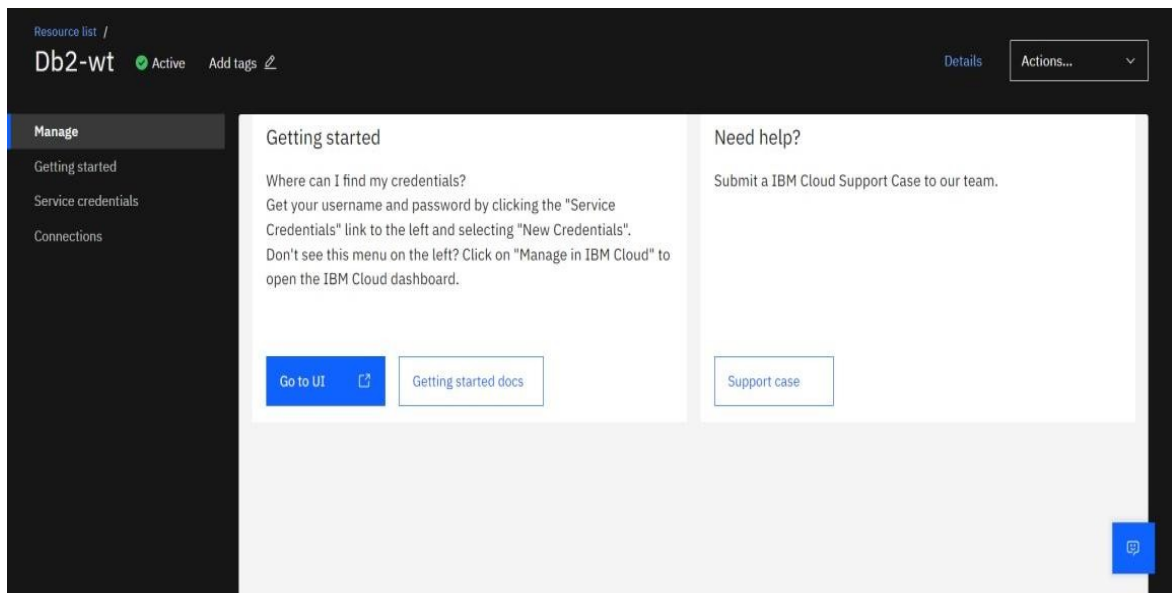
**STEP 5:** From the resource list select database as Db2.

## Resource list

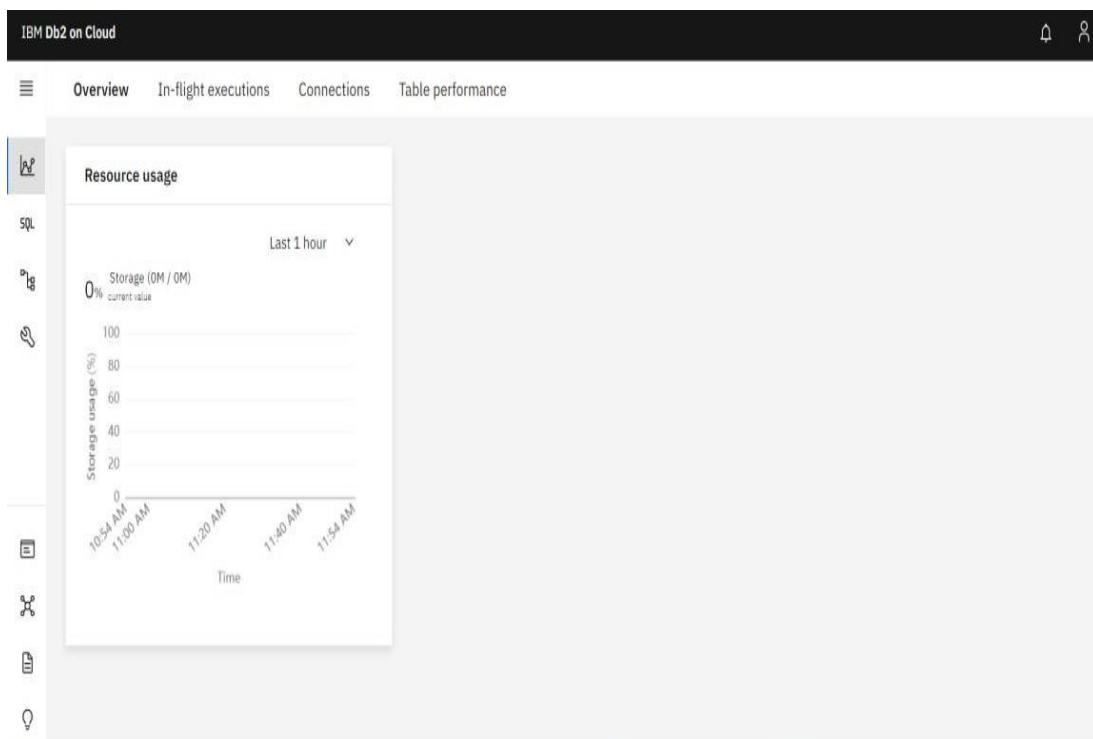
[Create resource](#)

Name	Group	Location	Product	Status	Tags
<input type="text" value="Filter by name or IP address..."/>	<input type="text" value="Filter by group or org..."/>	<input type="text" value="Filter..."/>	<input type="text" value="Filter..."/>	<input type="text" value="Filter..."/>	<input type="text" value="Filter..."/>
<b>Networking (0)</b>					
<b>Storage (0)</b>					
<b>AI / Machine Learning (0)</b>					
<b>Analytics (0)</b>					
<b>Blockchain (0)</b>					
<b>Databases (1)</b>					
Db2-wt	Default	Dallas	Db2	<span style="color: green;">●</span> Active	—
<b>Developer tools (0)</b>					
<b>Logging and monitoring (0)</b>					
<b>Migration (0)</b>					

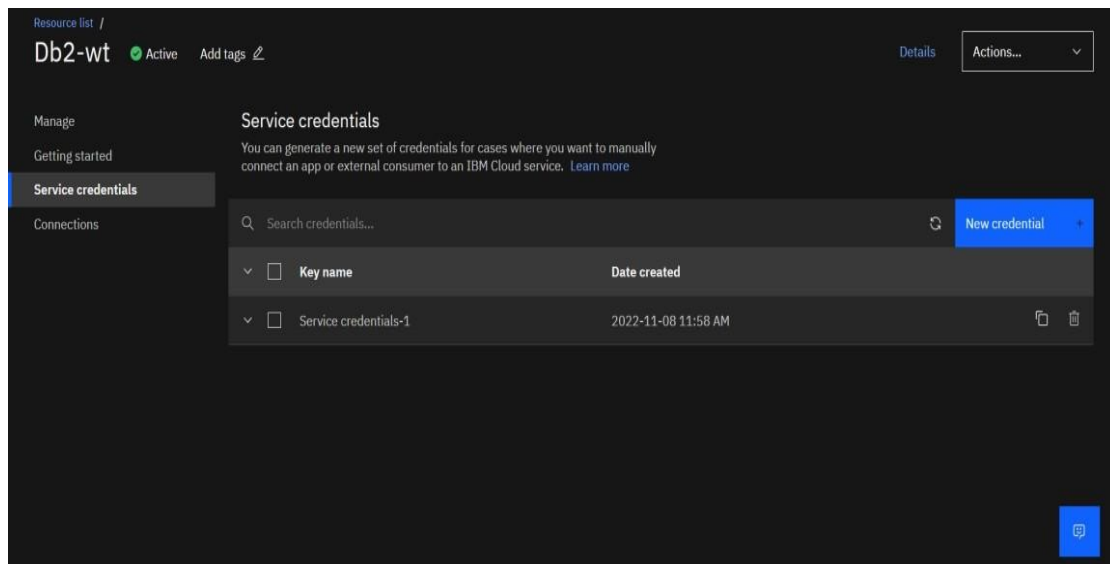
## STEP 6: Click on Go to UI to know resource



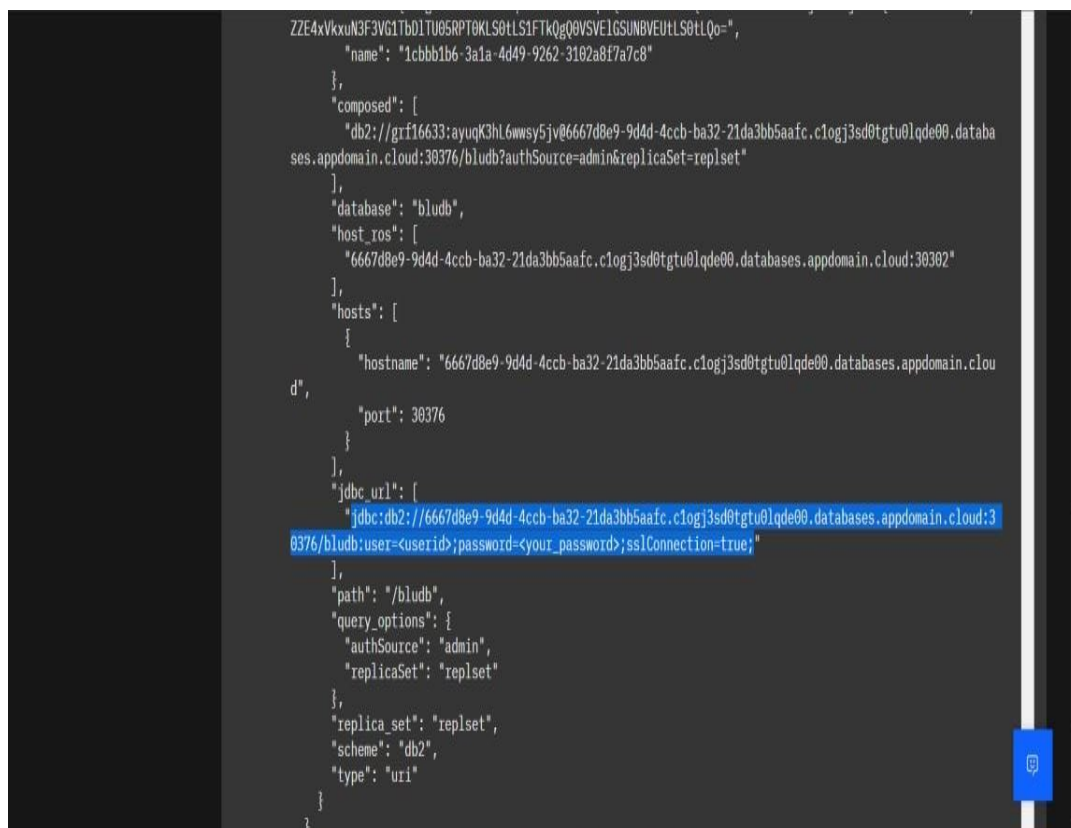
## STEP 7: Resource usage of IBM Db2 on cloud.



## STEP 8: Creation of new Service Credential.



## STEP 9: Copy the JDBC url from the created service credential in IBMCloud.



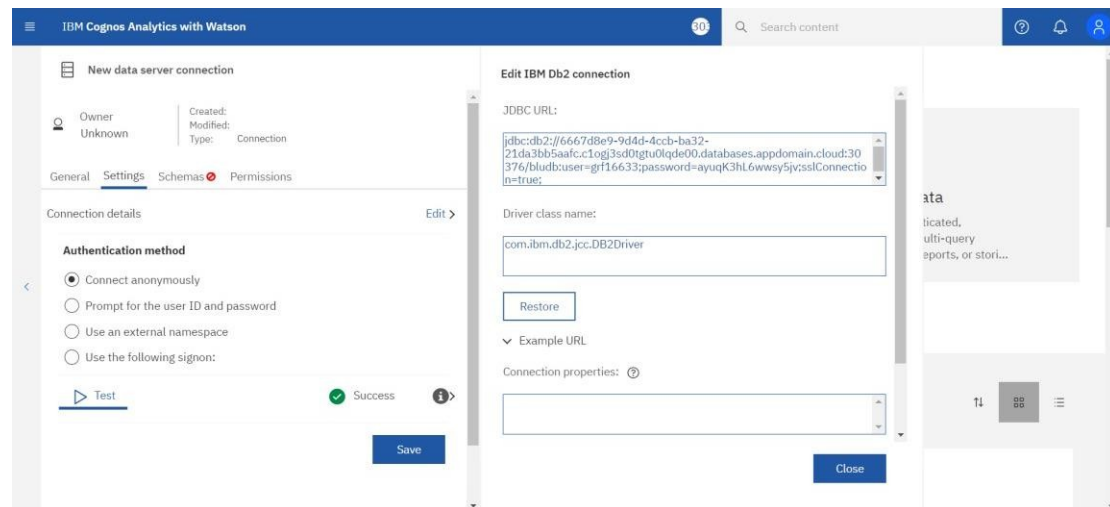
**STEP 10:** Copy the username and paste it in JDBC url in cognos for creating data server connection.

```
FJMdjVHSWbUNlJySWNhKwoZPbWxNnB4ZEttdlPlYInWcnbMXJ3QZkNtY3dLYUNYMUWNLW4ZK8J1bzhvWg5YMKh6UG91cIdYS1BoaGdKZZ
J5CKNDcUdIK8NMNnQ1eFg3b0SNS3VNSUNqRVZndnNLWnRqeTQ5VW5iNVZZbHQb1J3dTF1bGdzRDNjek1tbj1lREQKNH81REFvYTYzYmkt
ZZE4xVkuN3F3VG1Tb0L1U05RPT0KL50tLS1fTKq0Q0VSVE1GSUNBVEUtlS0tLQo=",
  "name": "1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8"
},
"composed": [
  "db2 -u grf16633 -p ayuqK3hL6wmsy5jv --ssl --sslCAFile 1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8 --aut
henticationDatabase admin --host 6667d8e9-9d4d-4ccb-ba32-21da3bb5aafc.clogj3sd0tgtu0lqde00.databases.appd
omain.cloud:38376"
],
"environment": {},
"type": "cli"
},
"db2": {
  "authentication": {
    "method": "direct",
    "password": "ayuqK3hL6wmsy5jv",
    "username": "grf16633"
  },
  "certificate": {
    "certificate_base64": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSB0tLS0tck1JSURFakNDQWZxZ0F3SUJBZ0lKQVA1S0R3ZT
NCTkxiUEwRONTcldTSWlZRFFFQkN3VUFNOjR4SERBYUJnTlYkQkFTU0UwbnEUNU0JEYkc5MVp0QkVZWJ0eWw1Ge1pYTXdIaGNOTWpBd01
qSTVNRFFSTVRBeVdoY05NeKf3TWpJMgpNRRFFSTVRBeVdqQWVNUnd3R2dZRFZRUUREQk5KUSwZ1EYeHZkV1FnUkdGMF1XSnhjM1Z6TU1J
Qk1qQU5CZ2ZtcCmhzUc5dZBCQVFRKfBT0NBUTHBU1JqkNnS0NBUBVbDXUvb1tpWw9xdkdGNU8xSGpEa1psK251YjE4UkR4ZGwKTzRUL
3FoUGMxMTREY1FUK0p1RXdhGdG13aG1jTgxaQnF2QWFmb1hzbmhhqSVFOMG01L0x5YzdB2Y291VXNmSGR0QWp0VGcrSU5xbjBrd0MxTHM3d1
dTakxqVE96N3M3M1ZUSUSYmX3cnRIRUlvM1JWtkV6SkNHYSLSXZdZWZVSUtrc1dNM1R0SD15cnFsSGN0Z2pIU1FmRkVTRm1YaHJ100h
SQmd0amIva0xtVGpCaTFBeEadVdWobW2ZQRmNE0Y3EKY21QcHhNqdB0PTnI0YnhJMVRyUWxEemN1N1hMSFb1W91SUprdnZvMUZvaTEy
SmRNM1MxK31abFZPMUzNkU3bWpKMjhUdGJoZ3JGOGtIU0NMskJvTTF5Z3FPZG90VW50QC9EOWZhamNN01Wd2V4a01S0TNKR1FJREFRQ
UJvMU13C1VUQWRCZ05WSFE0RUZnUUV1Q3JZanF3Qzc1VUpxVmZEMDh1ZWdqeDZiUmN3SHdZRFZSMGpCQmd3Rm9BVWVdclKkKanf3Qzc1VU
pxVmZEMDh1ZWdqeDZiUmN3RHdZRFZSMFRBUUgVqkFVd0F3RUIvekfQ0mdrcWmhzUc5dZBCQVFRg0BQU9DQVFFQUkyRTBU0U13M1N3RjJ
2MXBqahV4M01kMwV2SGFVSKRMB0tPd0hSRnFS0HgxZ2dRcGVEcFBnMk5SCkx3R08yek85SWZUMmhlakd1d2orWnJ5SG5xcxH1xQ0pLOHJE
U28xZUVPEkIYmE2S1YrQTVscEttMmdjV3VHYzMKK1UxVTFzTDd1Ujd3ZFFUvU0TVU4aErVnI9SVHRMRV2Mnc3V1NPS1F0K013ejgrT
```

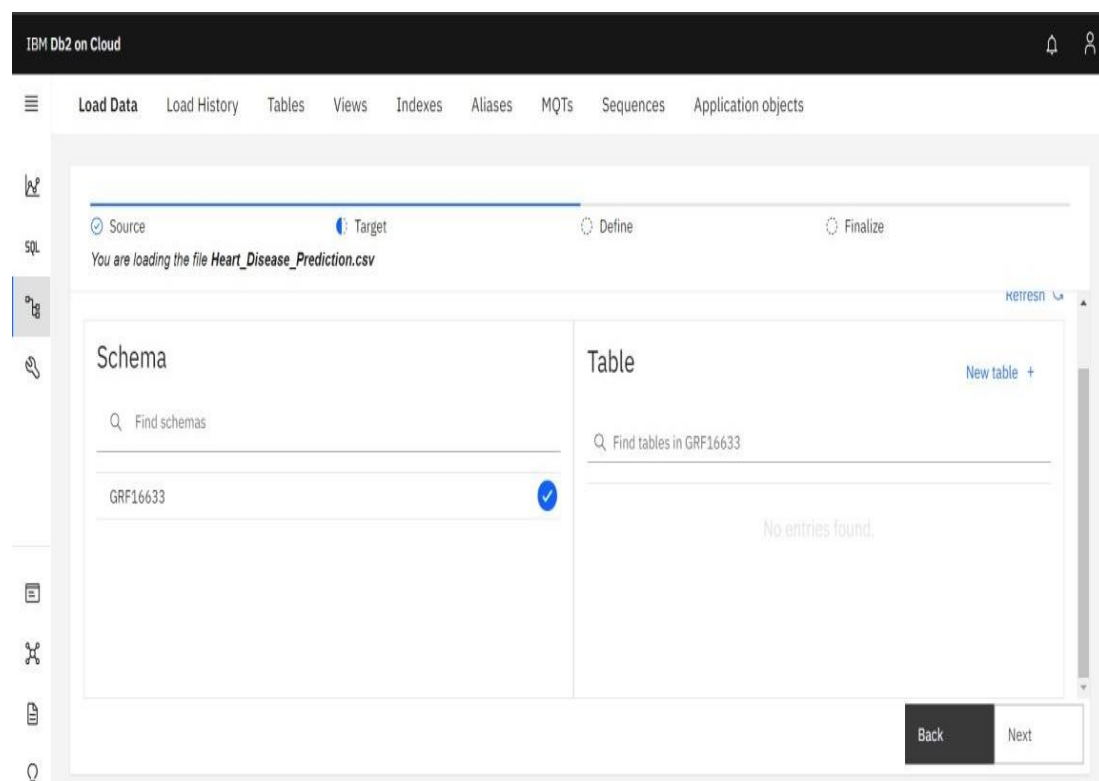
**STEP 10:** Copy the password and paste it in JDBC url in cognos.

```
FJMdjVHSWbUNlJySWNhKwoZPbWxNnB4ZEttdlPlYInWcnbMXJ3QZkNtY3dLYUNYMUWNLW4ZK8J1bzhvWg5YMKh6UG91cIdYS1BoaGdKZZ
J5CKNDcUdIK8NMNnQ1eFg3b0SNS3VNSUNqRVZndnNLWnRqeTQ5VW5iNVZZbHQb1J3dTF1bGdzRDNjek1tbj1lREQKNH81REFvYTYzYmkt
ZZE4xVkuN3F3VG1Tb0L1U05RPT0KL50tLS1fTKq0Q0VSVE1GSUNBVEUtlS0tLQo=",
  "name": "1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8"
},
"composed": [
  "db2 -u grf16633 -p ayuqK3hL6wmsy5jv --ssl --sslCAFile 1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8 --aut
henticationDatabase admin --host 6667d8e9-9d4d-4ccb-ba32-21da3bb5aafc.clogj3sd0tgtu0lqde00.databases.appd
omain.cloud:38376"
],
"environment": {},
"type": "cli"
},
"db2": {
  "authentication": {
    "method": "direct",
    "password": "ayuqK3hL6wmsy5jv",
    "username": "grf16633"
  },
  "certificate": {
    "certificate_base64": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSB0tLS0tck1JSURFakNDQWZxZ0F3SUJBZ0lKQVA1S0R3ZT
NCTkxiUEwRONTcldTSWlZRFFFQkN3VUFNOjR4SERBYUJnTlYkQkFTU0UwbnEUNU0JEYkc5MVp0QkVZWJ0eWw1Ge1pYTXdIaGNOTWpBd01
qSTVNRFFSTVRBeVdoY05NeKf3TWpJMgpNRRFFSTVRBeVdqQWVNUnd3R2dZRFZRUUREQk5KUSwZ1EYeHZkV1FnUkdGMF1XSnhjM1Z6TU1J
Qk1qQU5CZ2ZtcCmhzUc5dZBCQVFRKfBT0NBUTHBU1JqkNnS0NBUBVbDXUvb1tpWw9xdkdGNU8xSGpEa1psK251YjE4UkR4ZGwKTzRUL
3FoUGMxMTREY1FUK0p1RXdhGdG13aG1jTgxaQnF2QWFmb1hzbmhhqSVFOMG01L0x5YzdB2Y291VXNmSGR0QWp0VGcrSU5xbjBrd0MxTHM3d1
dTakxqVE96N3M3M1ZUSUSYmX3cnRIRUlvM1JWtkV6SkNHYSLSXZdZWZVSUtrc1dNM1R0SD15cnFsSGN0Z2pIU1FmRkVTRm1YaHJ100h
SQmd0amIva0xtVGpCaTFBeEadVdWobW2ZQRmNE0Y3EKY21QcHhNqdB0PTnI0YnhJMVRyUWxEemN1N1hMSFb1W91SUprdnZvMUZvaTEy
SmRNM1MxK31abFZPMUzNkU3bWpKMjhUdGJoZ3JGOGtIU0NMskJvTTF5Z3FPZG90VW50QC9EOWZhamNN01Wd2V4a01S0TNKR1FJREFRQ
UJvMU13C1VUQWRCZ05WSFE0RUZnUUV1Q3JZanF3Qzc1VUpxVmZEMDh1ZWdqeDZiUmN3SHdZRFZSMGpCQmd3Rm9BVWVdclKkKanf3Qzc1VU
pxVmZEMDh1ZWdqeDZiUmN3RHdZRFZSMFRBUUgVqkFVd0F3RUIvekfQ0mdrcWmhzUc5dZBCQVFRg0BQU9DQVFFQUkyRTBU0U13M1N3RjJ
2MXBqahV4M01kMwV2SGFVSKRMB0tPd0hSRnFS0HgxZ2dRcGVEcFBnMk5SCkx3R08yek85SWZUMmhlakd1d2orWnJ5SG5xcxH1xQ0pLOHJE
U28xZUVPEkIYmE2S1YrQTVscEttMmdjV3VHYzMKK1UxVTFzTDd1Ujd3ZFFUvU0TVU4aErVnI9SVHRMRV2Mnc3V1NPS1F0K013ejgrT
```

## STEP 11: Data Server Connection is created

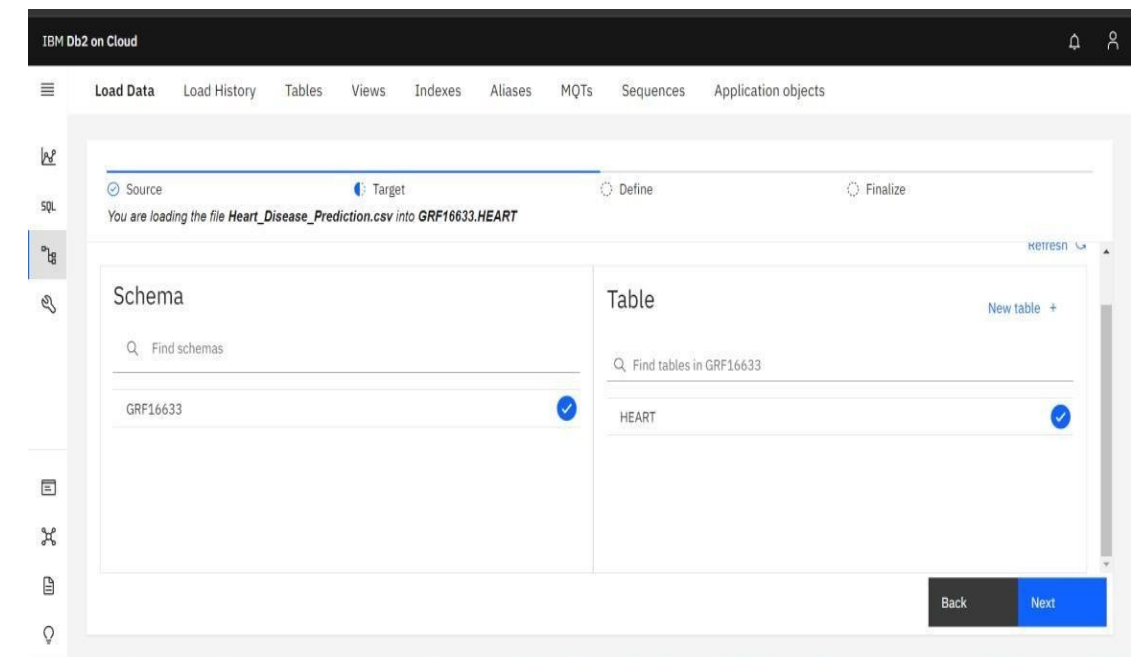


## STEP 12: In IBM Db2 Select a schema and create a table.

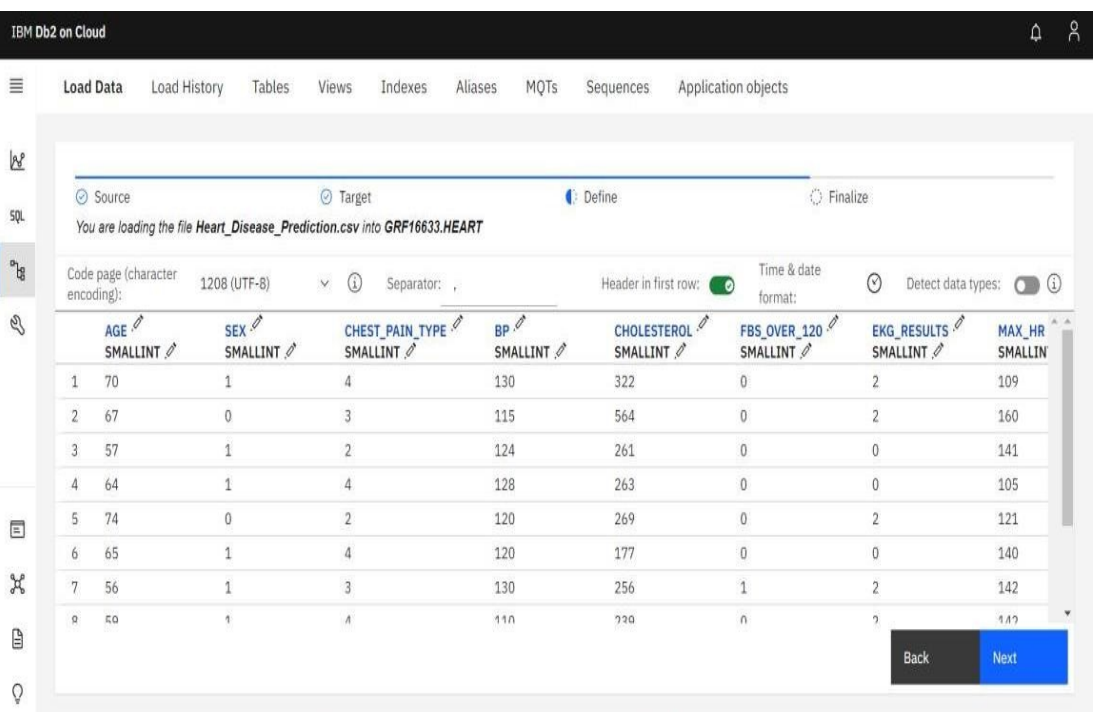




STEP 13: Schema and table has been created.

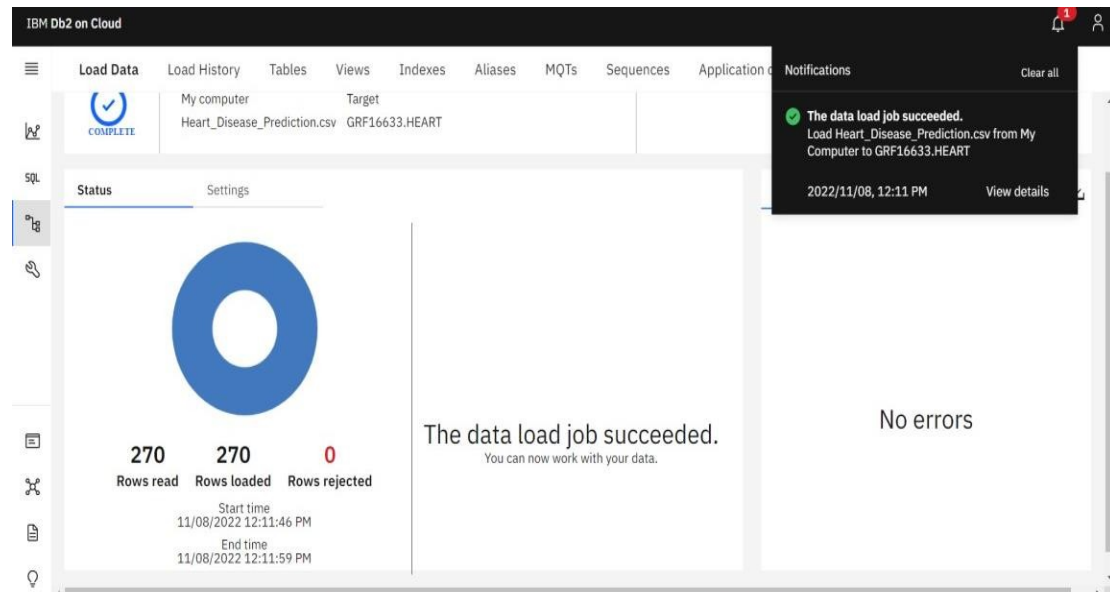


STEP 14: The creation of table is shown below:





STEP 15: The data has been loaded successfully in

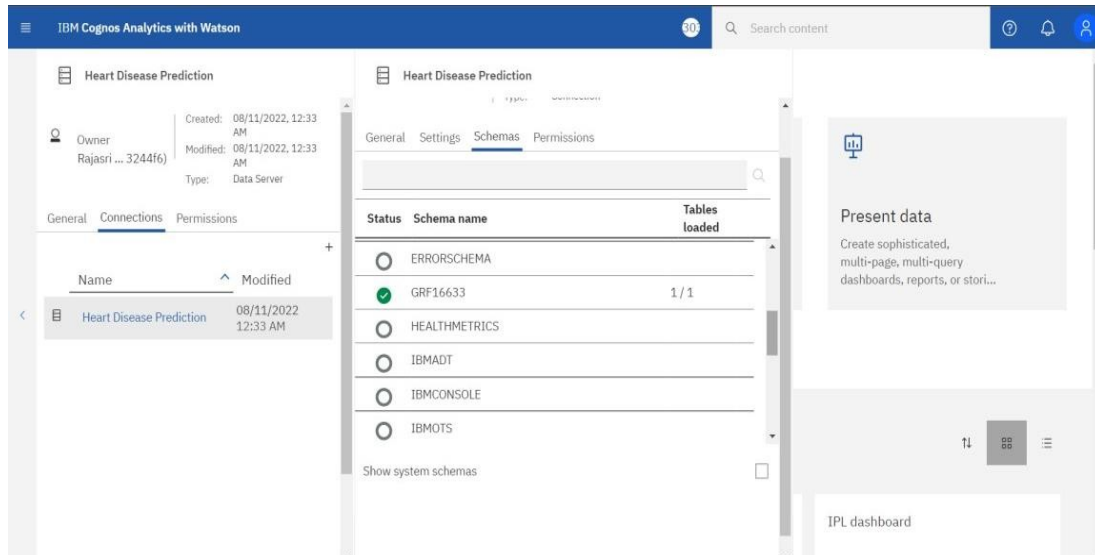


STEP 16: The below table represents the data present in our Dataset.

The screenshot shows the IBM Db2 on Cloud interface for the table 'GRF16633.HEART'. The table is displayed with 10 columns: AGE, SEX, CHEST\_PAIN\_T..., BP, CHOLESTEROL, FBS\_OVER\_120, EKG\_RESULTS, MAX\_HR, and EXERCISE\_AN... Each column has a 'SMALLINT' data type. The table contains 8 rows of data. An 'Export to CSV' button is visible in the top right corner of the table view.

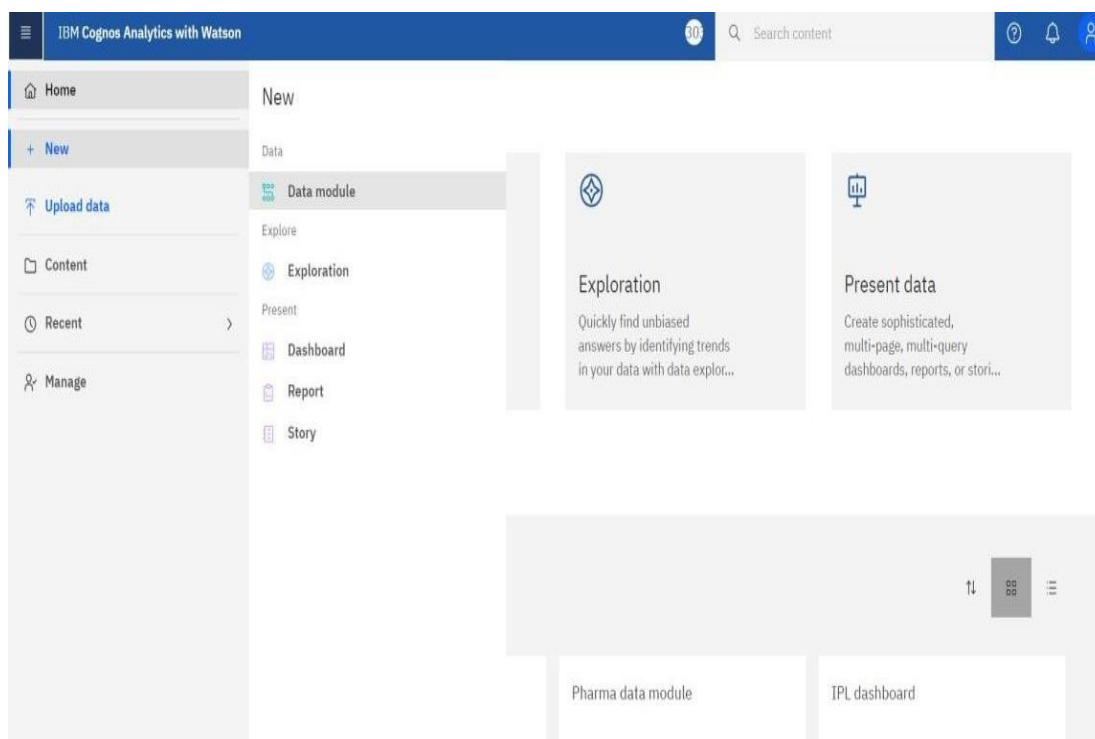
	AGE SMALLINT	SEX SMALLINT	CHEST_PAIN_T... SMALLINT	BP SMALLINT	CHOLESTEROL SMALLINT	FBS_OVER_120 SMALLINT	EKG_RESULTS SMALLINT	MAX_HR SMALLINT	EXERCISE_AN... SMALLINT
1	29	1	2	130	204	0	2	202	0
2	34	0	2	118	210	0	0	192	0
3	34	1	1	118	182	0	2	174	0
4	35	1	4	120	198	0	0	130	1
5	35	0	4	138	183	0	0	182	0
6	35	1	4	126	282	0	2	156	1
7	37	0	3	120	215	0	0	170	0
8	37	1	3	130	250	0	0	187	0

## STEP 17: Loading of metadata and successfully loaded data in cognos by server connection.

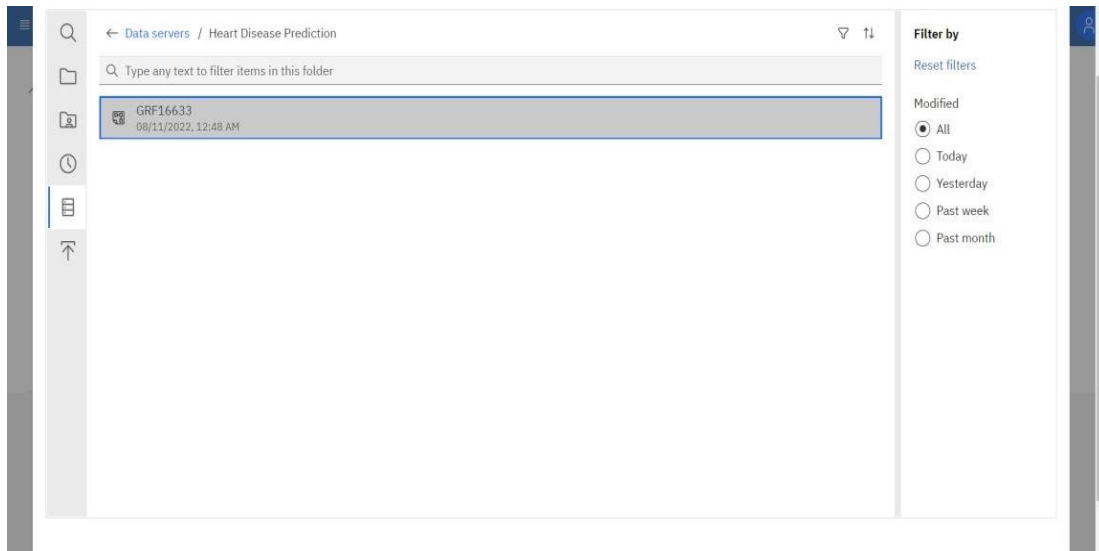


## Creation of Data Module:

### STEP 1: Creation of Data Module.



## STEP 2: Choosing of dataset in data server connection in cognos.

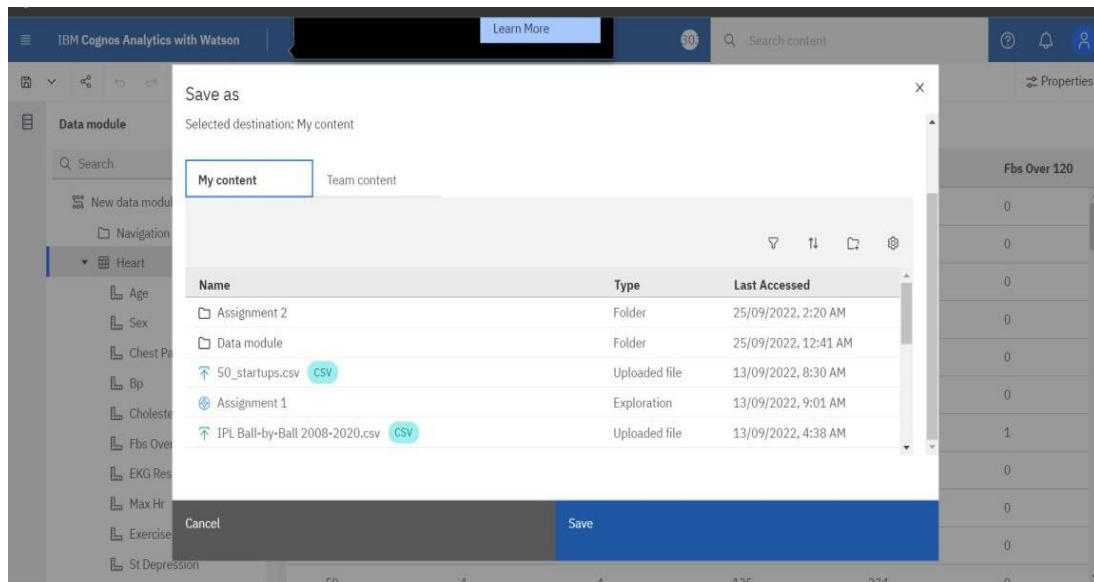


## STEP 3: Data Module is created successfully.

The screenshot shows the IBM Cognos Analytics interface. The main area displays a table with columns: Age, Sex, Chest Pain Type, Bp, Cholesterol, and Fbs Over 120. The table contains 15 rows of data. The left sidebar shows the 'Data module' section with a search bar and a list of fields: Age, Sex, Chest Pain Type, Bp, Cholesterol, Fbs Over 120, EKG Results, Max Hr, Exercise Angina, St Depression, and Slope Of St.

Age	Sex	Chest Pain Type	Bp	Cholesterol	Fbs Over 120
70	1	4	130	322	0
67	0	3	115	564	0
57	1	2	124	261	0
64	1	4	128	263	0
74	0	2	120	269	0
65	1	4	120	177	0
56	1	3	130	256	1
59	1	4	110	239	0
60	1	4	140	293	0
63	0	4	150	407	0
59	1	4	135	238	0

## STEP 4: Save the Data Module in My



## STEP 5: Representation of data module with the datum present in Heart Disease Prediction.

The screenshot shows the 'Heart Disease Prediction' data module in IBM Cognos Analytics. The 'Grid' view is selected, displaying a table with columns: Age, Sex, Chest Pain Type, Bp, Cholesterol, and Fbs Over 120. The table contains 10 rows of data.

Age	Sex	Chest Pain Type	Bp	Cholesterol	Fbs Over 120
70	1	4	130	322	0
67	0	3	115	564	0
57	1	2	124	261	0
64	1	4	128	263	0
74	0	2	120	269	0
65	1	4	120	177	0
56	1	3	130	256	1
59	1	4	110	239	0
60	1	4	140	293	0
63	0	4	150	407	0