

PROJECT DEVELOPMENT PHASE

Delivery of Sprint - 1

Team ID	PNT2022TMID45847
Project Name	VISUALIZING AND PREDICTING HEART DISEASE WITH AN INTERACTIVE DASH BOARD.

Fetch data from external API (Kaggle API)

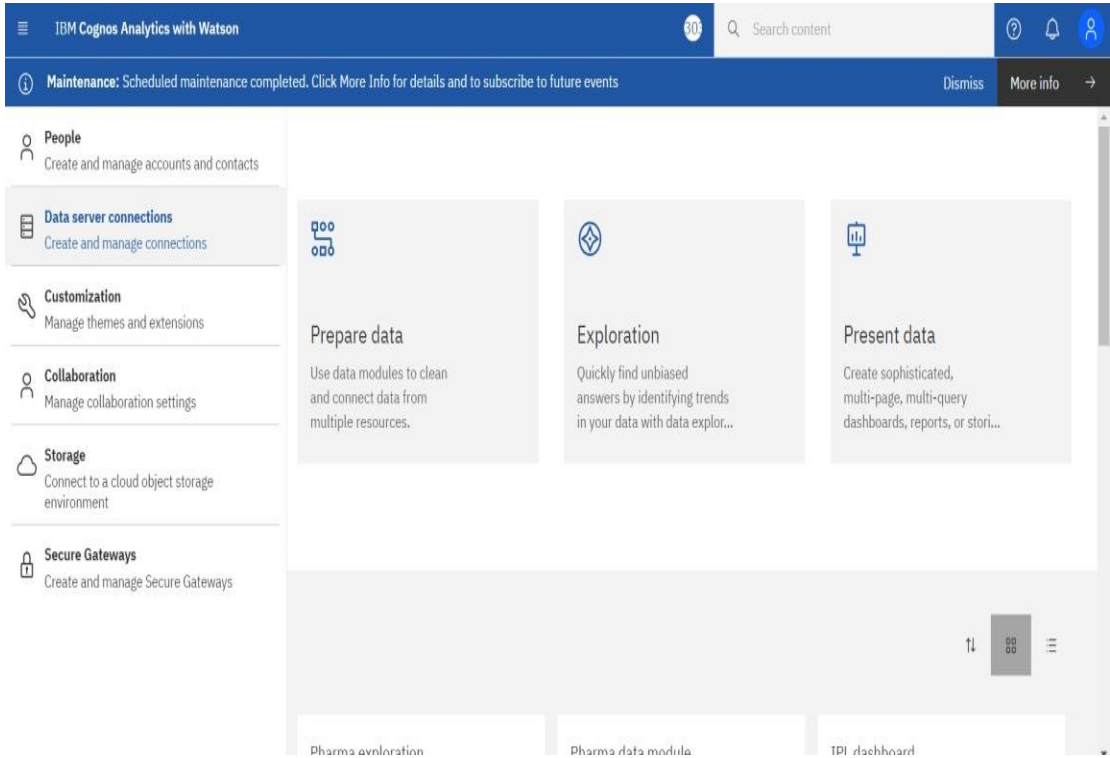


```
File Edit View Insert Runtime Tools Help All changes saved
+ Code + Text
[1] !pip install -q kaggle
[2] !mkdir ~/.kaggle # creating a kaggle directory
[3] !cp kaggle.json ~/.kaggle/ # copying json file to folder
cp: cannot stat 'kaggle.json': No such file or directory
[4] !chmod 600 ~/.kaggle/kaggle.json # 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 IBM Cognos Analytics with Watson interface. The main window is titled 'IBM Cognos Analytics with Watson' and has a search bar. The left sidebar shows 'New data server connection' with tabs for 'General', 'Settings', 'Schemas', and 'Permissions'. The 'Settings' tab is active, showing 'Authentication method' options: 'Connect anonymously' (selected), 'Prompt for the user ID and password', 'Use an external namespace', and 'Use the following signon:'. Below these is a 'Test' button and a 'Not tested' status. The main area is titled 'Edit IBM Db2 connection' and contains fields for 'JDBC URL' (with a placeholder 'jdbc:db2://<hostname>:<port>/<database>'), 'Driver class name' (with a placeholder 'com.ibm.db2.jcc.DB2Driver'), and a 'Restore' button. There is also an 'Example URL' section and a 'Connection properties' field. A 'Save' button is at the bottom left, and a 'Close' button is at the bottom right.

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

The screenshot shows the IBM Cloud Catalog interface. The top right has links for 'Sell on IBM Cloud' and 'Catalog settings'. The main area is titled 'Catalog' and features a search bar with 'db2' entered. Below the search bar, a list of results is shown: 'Db2', 'Db2 Warehouse', and 'SAP NetWeaver(ABAP stack) with DB2 standard system'. To the right of the search results, there are filters for 'Alphabetically' and a view toggle. Below the search results, there are several service cards. The first card is 'Analytics Engine' by IBM, with a description: 'Submit your Apache Spark applications as needed and customize the Spark runtimes to satisfy the requirements of your application.' The second card is 'AnonTech VizVault Platform' by Anon Technology, Inc., with a description: 'Manage personal information as-a-service safely, securely, and in compliance with data privacy regulations using VizVault.' The third card is 'API Connect' by IBM, with a description: 'An enterprise-grade platform for creating, securing, managing, sharing, monetizing, and analyzing custom APIs located on-premises...'. At the bottom left, there is a sidebar with categories: 'Containers (9)', 'Networking (30)', 'Storage (20)', 'AI / Machine Learning (17)', and 'Analytics (10)'. The URL at the bottom is 'https://cloud.ibm.com/catalog/services/db2'.

STEP 4: Create a new db2 connection.

IBM

Compliance

EU Supported

HIPAA Enabled

IAM-enabled

Location

Sydney

Frankfurt

London

Dallas

Sao Paulo

Toronto

Tokyo

Milano

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

Create

About

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 multi-tenant 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

Free

Location: Dallas

Plan: Lite

Service name: Db2-m7

Resource group: Default

Create

Add to estimate

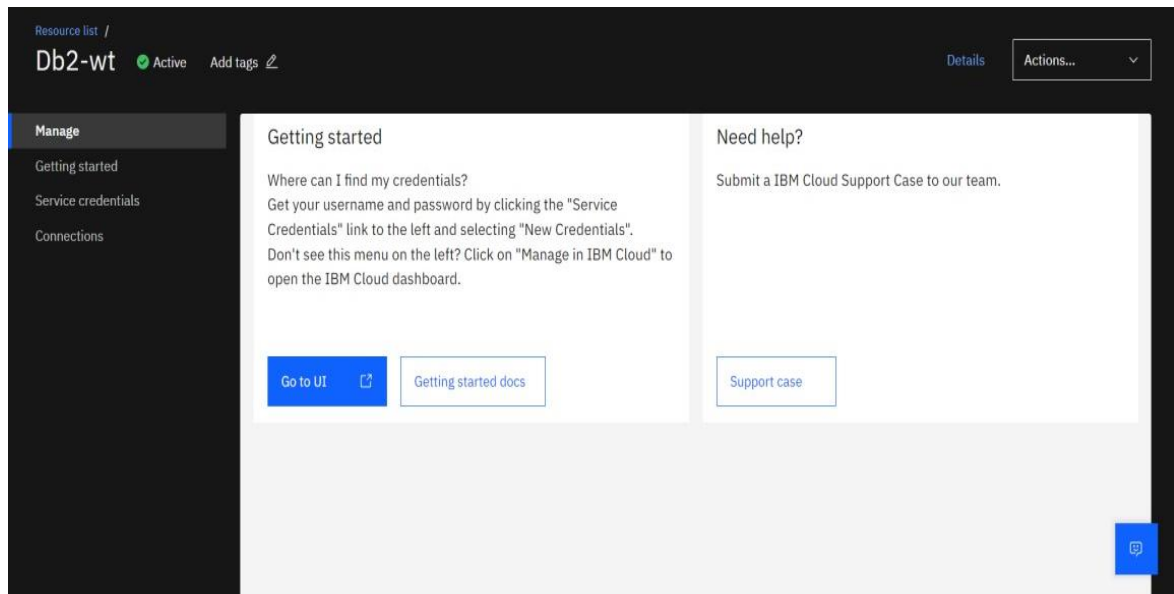
STEP 5: From the resource list select database as Db2.

Resource list

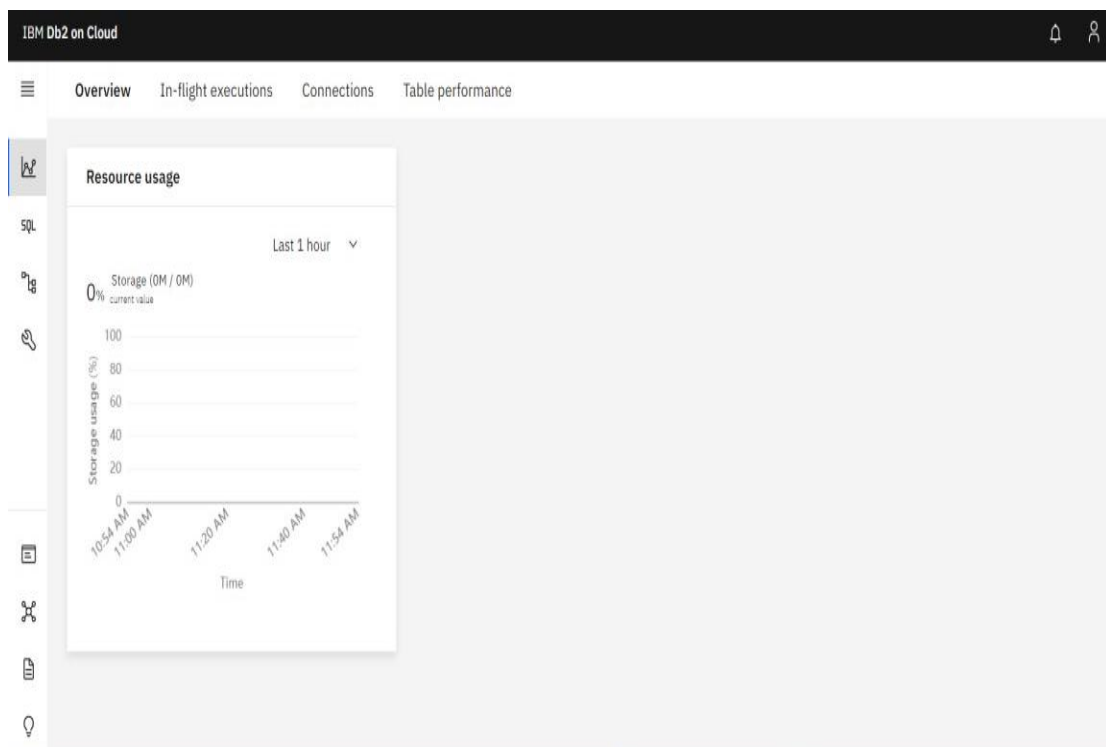
Create resource +

Name	Group	Location	Product	Status	Tags
<input type="text" value="Filter by name or IP address..."/>	<input style="background-color: #f5f5dc;" type="text" value="Filter by group or org..."/>	<input style="background-color: #f5f5dc;" type="text" value="Filter..."/>	<input style="background-color: #f5f5dc;" type="text" value="Filter..."/>	<input style="background-color: #f5f5dc;" type="text" value="Filter..."/>	<input style="background-color: #f5f5dc;" type="text" value="Filter..."/>
<div>Networking (0)</div> <hr/>					
Storage (0)					
AI / Machine Learning (0)					
Analytics (0)					
Blockchain (0)					
Databases (1)					
Db2-wt	Default	Dallas	Db2	● Active	-
Developer tools (0)					
Logging and monitoring (0)					
Migration (0)					

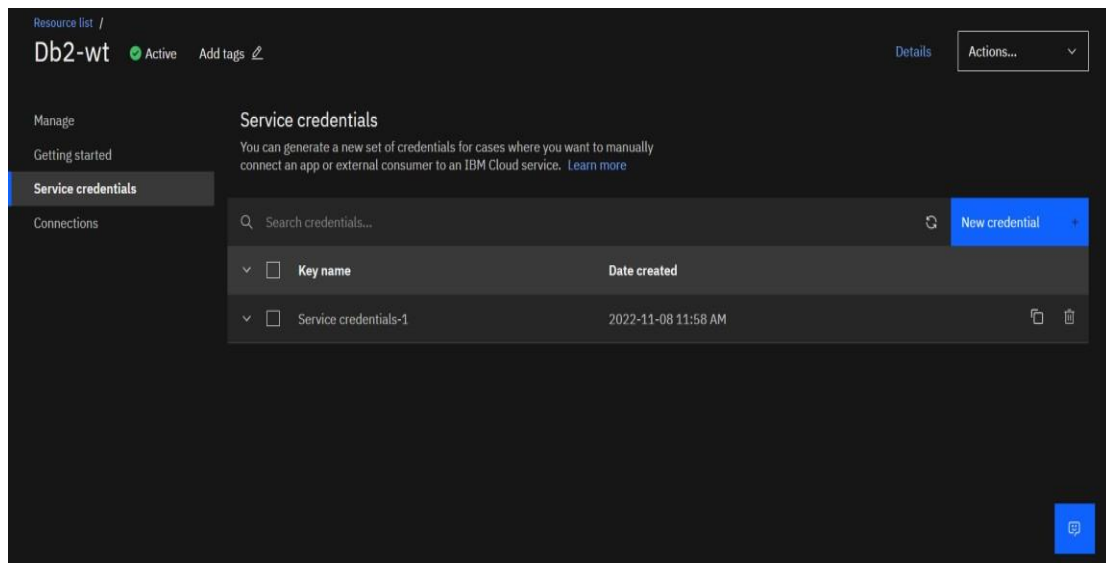
STEP 6: Click on Go to UI to know resource



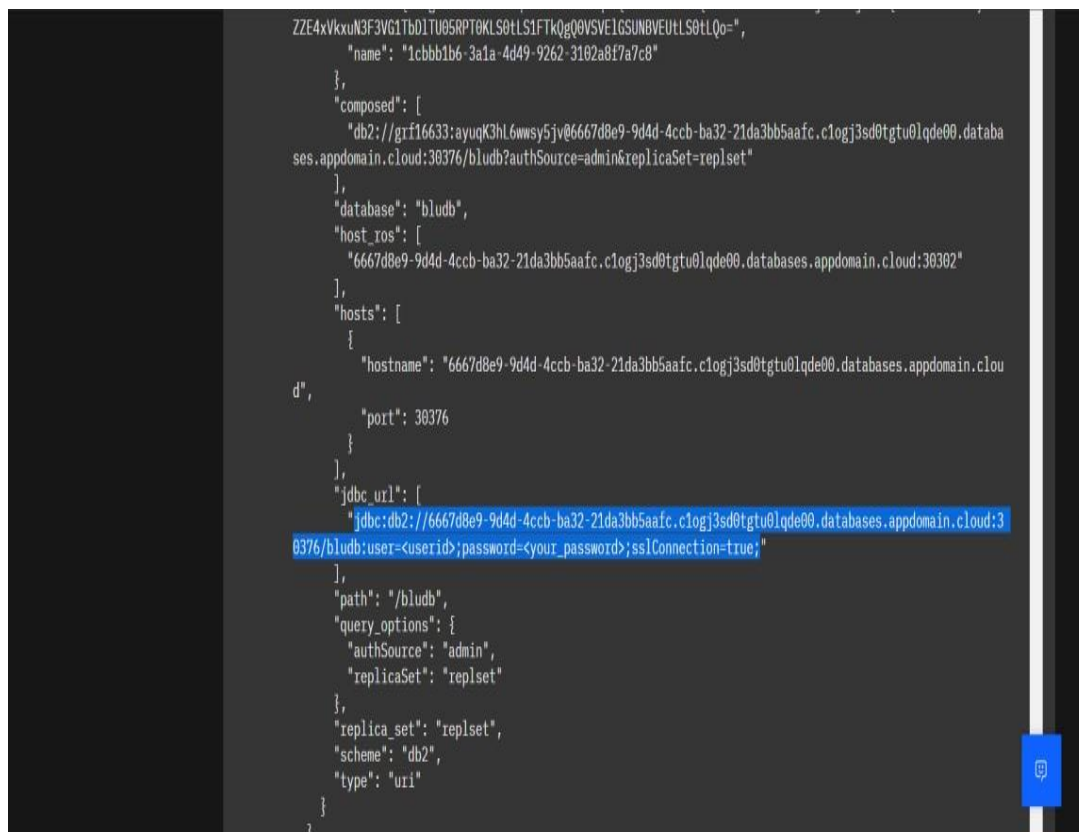
STEP 7: Resource usage of IBM Db2 on cloud.



STEP 8: Creation of new Service Credential.



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



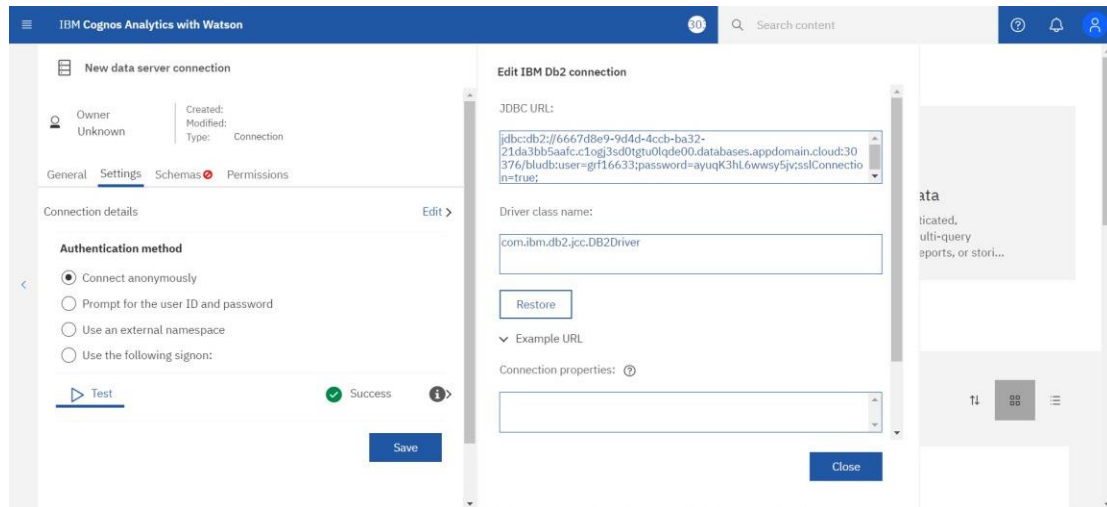
STEP 10: Copy the username and paste it in JDBC url in cognos for creating data server connection.

```
FJMDjVH5W5BN1JySWNHkwoZM9wxNnB4ZttdtIpLYIhncnBnMXJ3QZKnyJdLYuYhYMUENE4ZK9J1bzhvWGSYWNk6UG9Y1cIdYS1BoaGdXZ2
J5CKNdCddIKGNWnNq1efg3b95NS3VNSUNqRVZndnNLWnRqeIQ5VW51NVZzbHq0b1J3dTF1bGdzRDNjek1tbj1LREQKNH81REFvY1ZYmkt
ZZE4xVxxuN3F3VG1TbD1TU05RPT0KLS0tLS1FTkQg0QVSVE1GSUNBVEUtlS0tLQo=",
  "name": "1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8"
},
"composed": [
  "db2 -u grif16633 -p ayuqK3hL6wmsy5jv --ssl --sslCAFile 1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8 --aut
henticationDatabase admin --host 6667d8e9-9d4d-4ccb-ba32-21da3bb5aafc.c1ogj3sd0tgtu0lqde00.databases.appd
omain.cloud:39376"
],
"environment": {},
"type": "cli"
},
"db2": {
  "authentication": {
    "method": "direct",
    "password": "ayuqK3hL6wmsy5jv",
    "username": "grif16633"
  },
  "certificate": {
    "certificate_base64": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSB0tLS0tCk1JSURFakNDQWZxZ0F3SUJBZ0lKQVA1S0R3ZT
NCTkxiTUEwR0NTcUdTSW1ZRFFFQkN3VUFuNQjR4SERBYUJnTlYKQkFTU0UwbnEUNU0JEYkc5MVpDQkVZWfJ0wW1Ge1pYTXdLaGN0TWpBd01
qSTVNRRFF5TVRBeVdoY05NekF3TWpJMgpNRFF5TVRBeVdQgQWVNUnd3R2dZRFZRUUREQk5KUMswZ1EyeHZkV1FnUkdGMF1XSmhjMlZ6TU1J
QklqQU5CZ22txCmhraUc5dzBCQVFRkF0NBUtH8TU1JQkNnS0NBUEUvBdXUvbitpWw9xdkdGNu8xSGpEa1psK25iYjE4UkR4ZGwKTzRUL
3FoUGMxMTREY1FUK0p1RXdhG13aG1jTGxaQnF2QWFMb1hzbmhhqSVFOMG01L0x5YzdBY291VXNwSGR0QWpDVGczSUsxbjBrd0MtTHM3d1
dTakxqVE96N3M3MlZUSU5yYmx3cnRIRU1vM1JWTKV6SkNHYSLSXZmZWVSUtrCldNMLR0SD15cnFsSGN0Z2pIU1FmRkVTRmlYaH3i00h
SQmd0amIva8xtVGPcATfBeEVadNobW2QVRmEN0Y3EKY21QcHNqdDBPTnI0YnhJMVRyUWxEemN1N1HMSFBtWw91SUprdnVzMUZvaTey
SmRM1MxK3labfZPMUzZkU3bwpKMjhUdG6Joz3JG0G1U0NMSKJvTTF5Z3FPZG90Vn5Q0C9E0WZhamNN01Wd2V4a01S0TNKR1FJREFRQ
UJvMU13C1VUQWRZ05W5FE0RUZnUUV1Q3JZanF3Qzc1VUpxVnZEMDh1ZWdqeDZiUmN3SHdZRFZSMGpCQmd3Rm9BVWVdC1KkanFJQzc1VU
pxVnZEMDh1ZWdqeDZiUmN3RHdZRFZSMFRBUUgVqKfVd0F3RUIvekfQ0mdrcWhraUc5dzBCQVFrRgpBQU9DQVFFQkYyRTBUOUt3M1N3RjJ
2MXBqaH4M01kMwV2SGFVSkrMb0tPd0hSrnFS0Hgz2dRcGVEcfBnMk5SCKx3R08yek85SWZUMhLaMd1d2otWnJ5SGxxc1xQ0pLOHJE
U28xZUVPek1YmE2S1YrQTvcEttMmdjV3VHYzMKK1UzVTFzTddIUjd3ZFFuVjU0TVU4aERvN19sVHRMRVB2Mnc3N1NPS1FDK013ejgrT
```

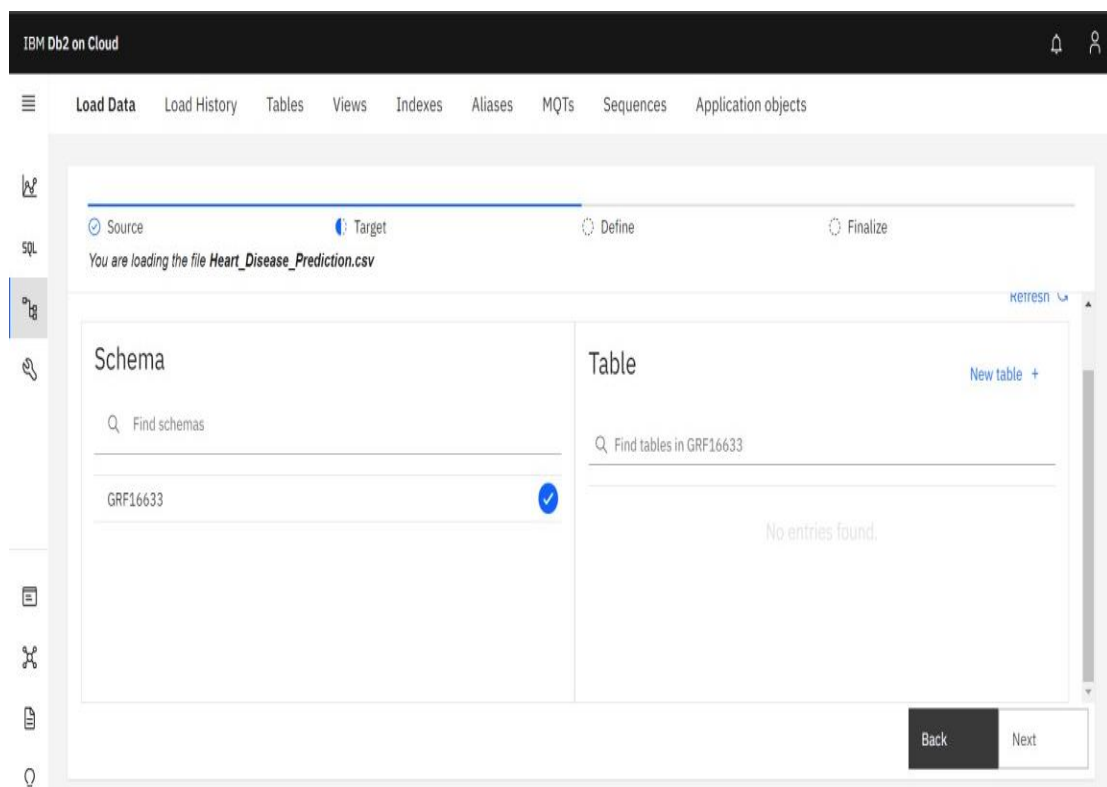
STEP 10: Copy the password and paste it in JDBC url in cognos.

```
FJMDjVH5W5BN1JySWNHkwoZM9wxNnB4ZttdtIpLYIhncnBnMXJ3QZKnyJdLYuYhYMUENE4ZK9J1bzhvWGSYWNk6UG9Y1cIdYS1BoaGdXZ2
J5CKNdCddIKGNWnNq1efg3b95NS3VNSUNqRVZndnNLWnRqeIQ5VW51NVZzbHq0b1J3dTF1bGdzRDNjek1tbj1LREQKNH81REFvY1ZYmkt
ZZE4xVxxuN3F3VG1TbD1TU05RPT0KLS0tLS1FTkQg0QVSVE1GSUNBVEUtlS0tLQo=",
  "name": "1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8"
},
"composed": [
  "db2 -u grif16633 -p ayuqK3hL6wmsy5jv --ssl --sslCAFile 1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8 --aut
henticationDatabase admin --host 6667d8e9-9d4d-4ccb-ba32-21da3bb5aafc.c1ogj3sd0tgtu0lqde00.databases.appd
omain.cloud:39376"
],
"environment": {},
"type": "cli"
},
"db2": {
  "authentication": {
    "method": "direct",
    "password": "ayuqK3hL6wmsy5jv",
    "username": "grif16633"
  },
  "certificate": {
    "certificate_base64": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSB0tLS0tCk1JSURFakNDQWZxZ0F3SUJBZ0lKQVA1S0R3ZT
NCTkxiTUEwR0NTcUdTSW1ZRFFFQkN3VUFuNQjR4SERBYUJnTlYKQkFTU0UwbnEUNU0JEYkc5MVpDQkVZWfJ0wW1Ge1pYTXdLaGN0TWpBd01
qSTVNRRFF5TVRBeVdoY05NekF3TWpJMgpNRFF5TVRBeVdQgQWVNUnd3R2dZRFZRUUREQk5KUMswZ1EyeHZkV1FnUkdGMF1XSmhjMlZ6TU1J
QklqQU5CZ22txCmhraUc5dzBCQVFRkF0NBUtH8TU1JQkNnS0NBUEUvBdXUvbitpWw9xdkdGNu8xSGpEa1psK25iYjE4UkR4ZGwKTzRUL
3FoUGMxMTREY1FUK0p1RXdhG13aG1jTGxaQnF2QWFMb1hzbmhhqSVFOMG01L0x5YzdBY291VXNwSGR0QWpDVGczSUsxbjBrd0MtTHM3d1
dTakxqVE96N3M3MlZUSU5yYmx3cnRIRU1vM1JWTKV6SkNHYSLSXZmZWVSUtrCldNMLR0SD15cnFsSGN0Z2pIU1FmRkVTRmlYaH3i00h
SQmd0amIva8xtVGPcATfBeEVadNobW2QVRmEN0Y3EKY21QcHNqdDBPTnI0YnhJMVRyUWxEemN1N1HMSFBtWw91SUprdnVzMUZvaTey
SmRM1MxK3labfZPMUzZkU3bwpKMjhUdG6Joz3JG0G1U0NMSKJvTTF5Z3FPZG90Vn5Q0C9E0WZhamNN01Wd2V4a01S0TNKR1FJREFRQ
UJvMU13C1VUQWRZ05W5FE0RUZnUUV1Q3JZanF3Qzc1VUpxVnZEMDh1ZWdqeDZiUmN3SHdZRFZSMGpCQmd3Rm9BVWVdC1KkanFJQzc1VU
pxVnZEMDh1ZWdqeDZiUmN3RHdZRFZSMFRBUUgVqKfVd0F3RUIvekfQ0mdrcWhraUc5dzBCQVFrRgpBQU9DQVFFQkYyRTBUOUt3M1N3RjJ
2MXBqaH4M01kMwV2SGFVSkrMb0tPd0hSrnFS0Hgz2dRcGVEcfBnMk5SCKx3R08yek85SWZUMhLaMd1d2otWnJ5SGxxc1xQ0pLOHJE
U28xZUVPek1YmE2S1YrQTvcEttMmdjV3VHYzMKK1UzVTFzTddIUjd3ZFFuVjU0TVU4aERvN19sVHRMRVB2Mnc3N1NPS1FDK013ejgrT
```

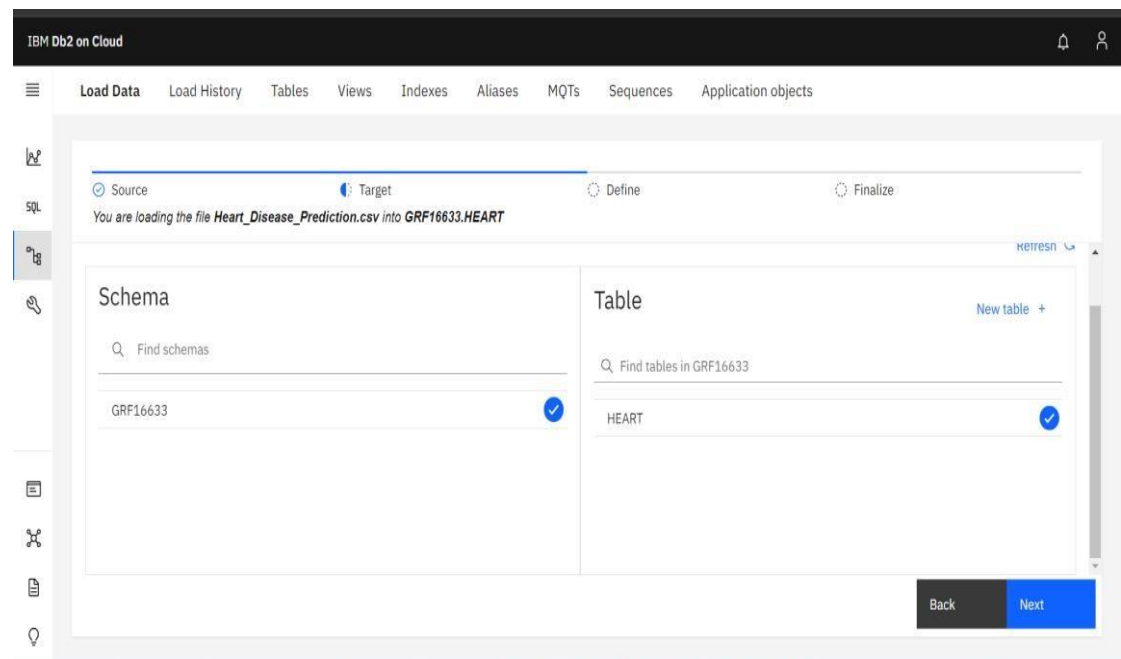
STEP 11: Data Server Connection is created



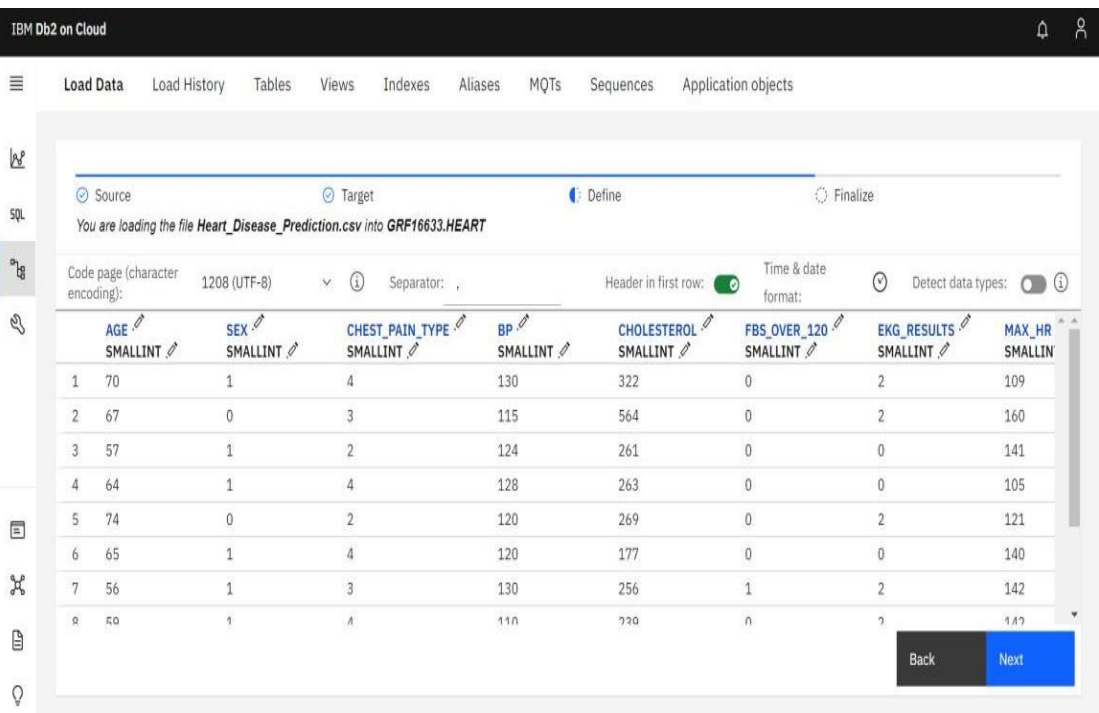
STEP 12: In IBM Db2 Select a schema and create a table.



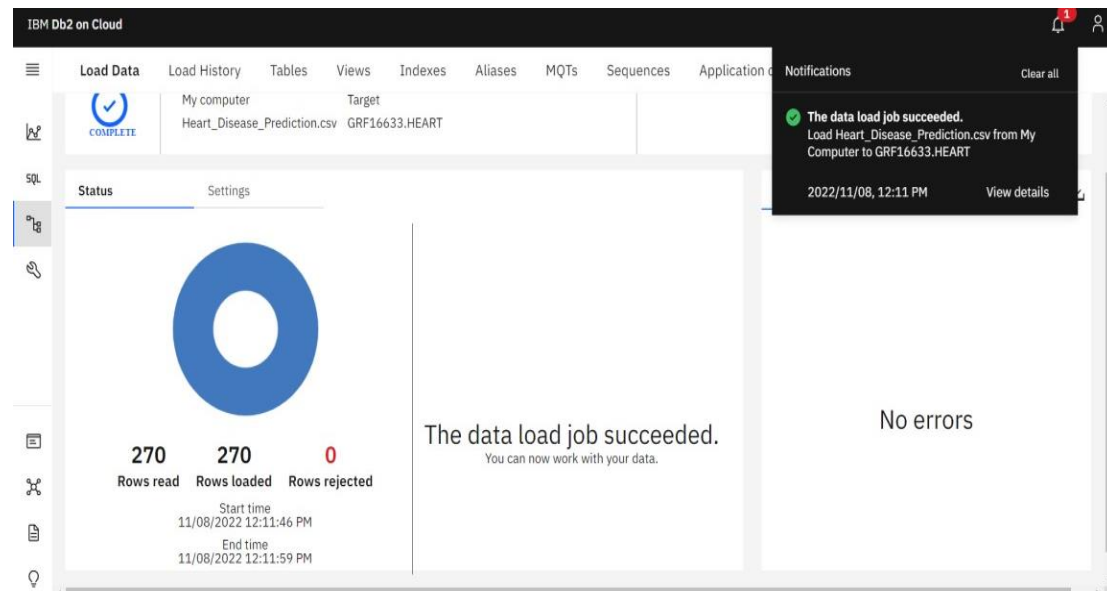
STEP 13: Schema and table has been created.



STEP 14: The creation of table is shown below:



STEP 15: The data has been loaded successfully in

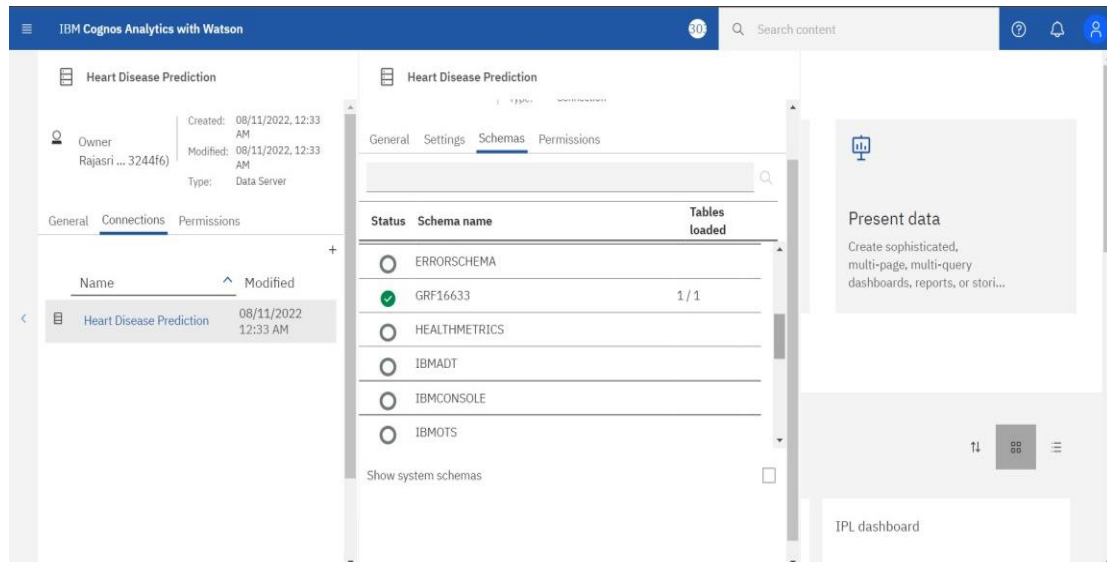


STEP 16: The below table represents the data present in our Dataset.

The screenshot shows the IBM Db2 on Cloud interface for the 'GRF16633.HEART' table. The table is displayed with 8 rows of data. The columns are: AGE (SMALLINT), SEX (SMALLINT), CHEST_PAIN_T... (SMALLINT), BP (SMALLINT), CHOLESTEROL (SMALLINT), FBS_OVER_120 (SMALLINT), EKG_RESULTS (SMALLINT), MAX_HR (SMALLINT), and EXERCISE_AN... (SMALLINT). An 'Export to CSV' button is visible in the top right corner of the table view.

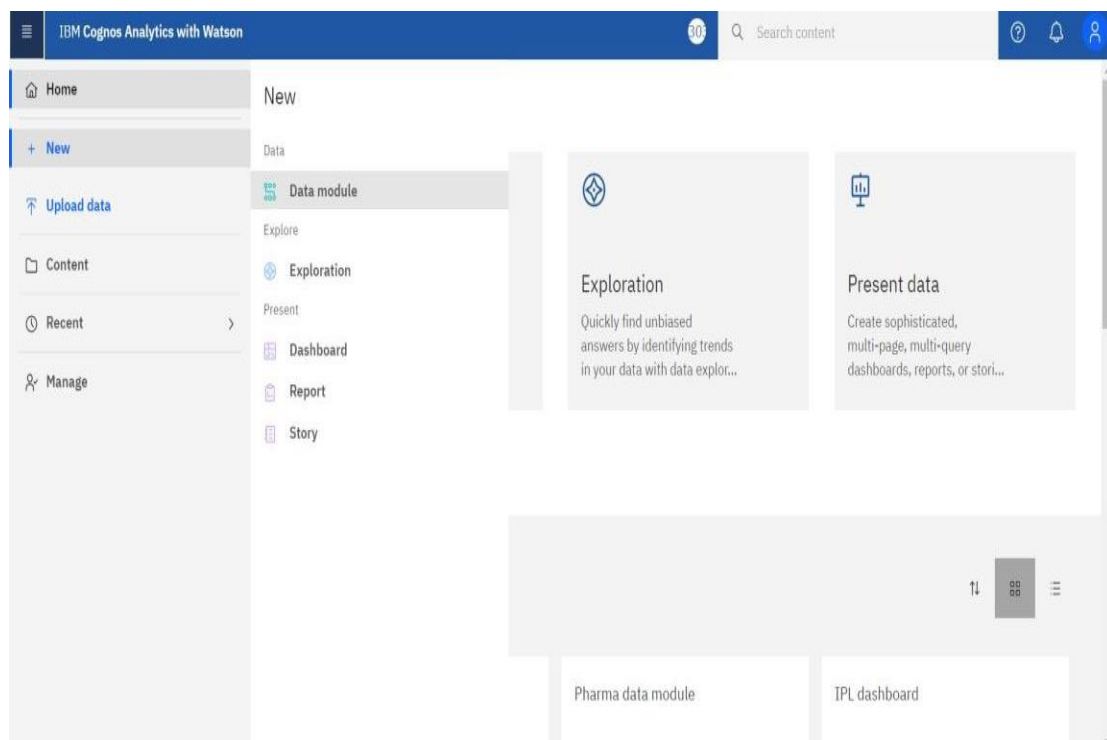
	AGE SMALLINT	SEX SMALLINT	CHEST_PAIN_T... SMALLINT	BP SMALLINT	CHOLESTEROL SMALLINT	FBS_OVER_120 SMALLINT	EKG_RESULTS SMALLINT	MAX_HR SMALLINT	EXERCISE_AN... SMALLINT
1	29	1	2	130	204	0	2	202	0
2	34	0	2	118	210	0	0	192	0
3	34	1	1	118	182	0	2	174	0
4	35	1	4	120	198	0	0	130	1
5	35	0	4	138	183	0	0	182	0
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.

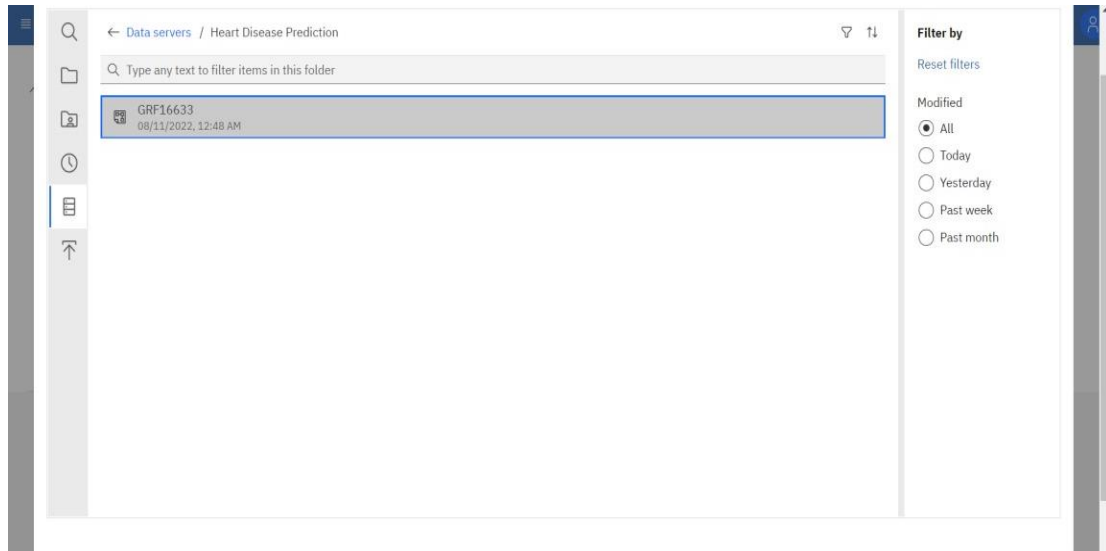


Creation of Data Module:

STEP 1: Creation of Data Module.



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

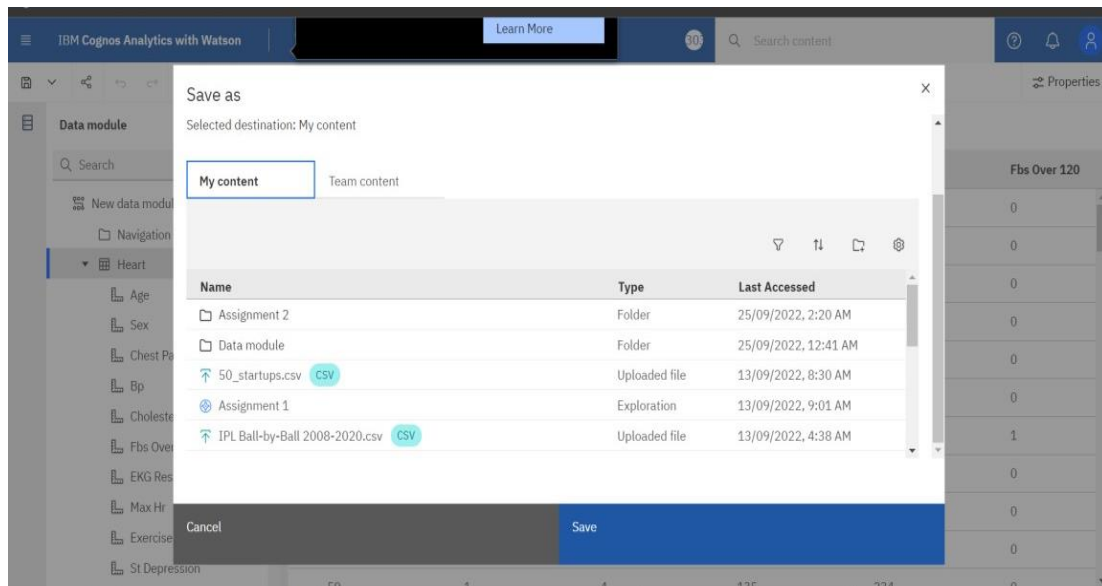


STEP 3: Data Module is created successfully.

The screenshot displays the IBM Cognos Analytics interface. The top navigation bar includes 'IBM Cognos Analytics with Watson', a 'Learn More' button, a user profile icon, and a search bar. The main content area is titled 'Data module' and shows a list of data modules under the 'Heart' category. The 'Heart' module is selected, and its details are displayed in a table view. The table has columns for 'Age', 'Sex', 'Chest Pain Type', 'Bp', 'Cholesterol', and 'Fbs Over 120'. The data is sorted by 'Age' in descending order.

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	234	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 IBM Cognos Analytics interface with the 'Heart Disease Prediction' data module selected. The data is displayed in a grid view with the following columns: Age, Sex, Chest Pain Type, Bp, Cholesterol, and Fbs Over 120. The 'Heart' data module is selected in the left sidebar.

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	234	0