Assignment-4

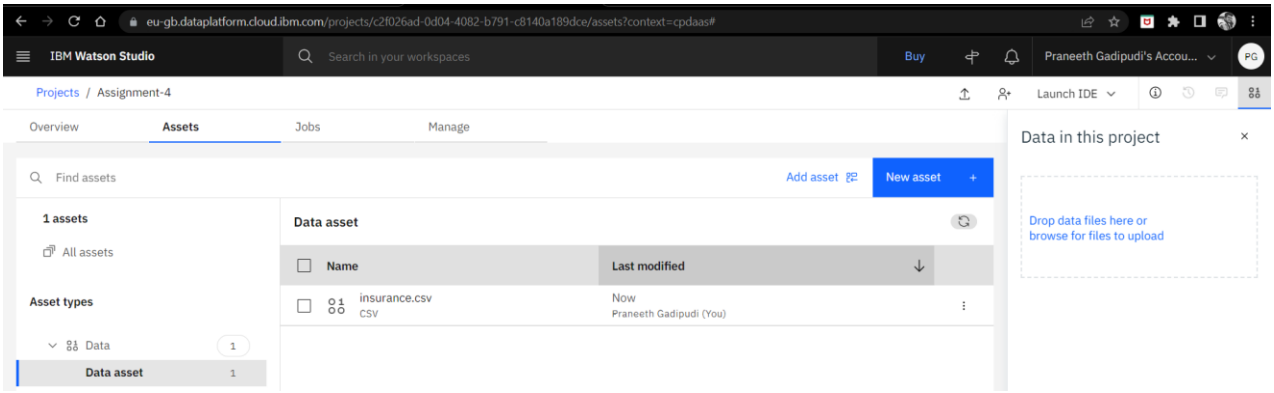
Name: G. Naga Sai Praneeth

Regd:19MIM10044

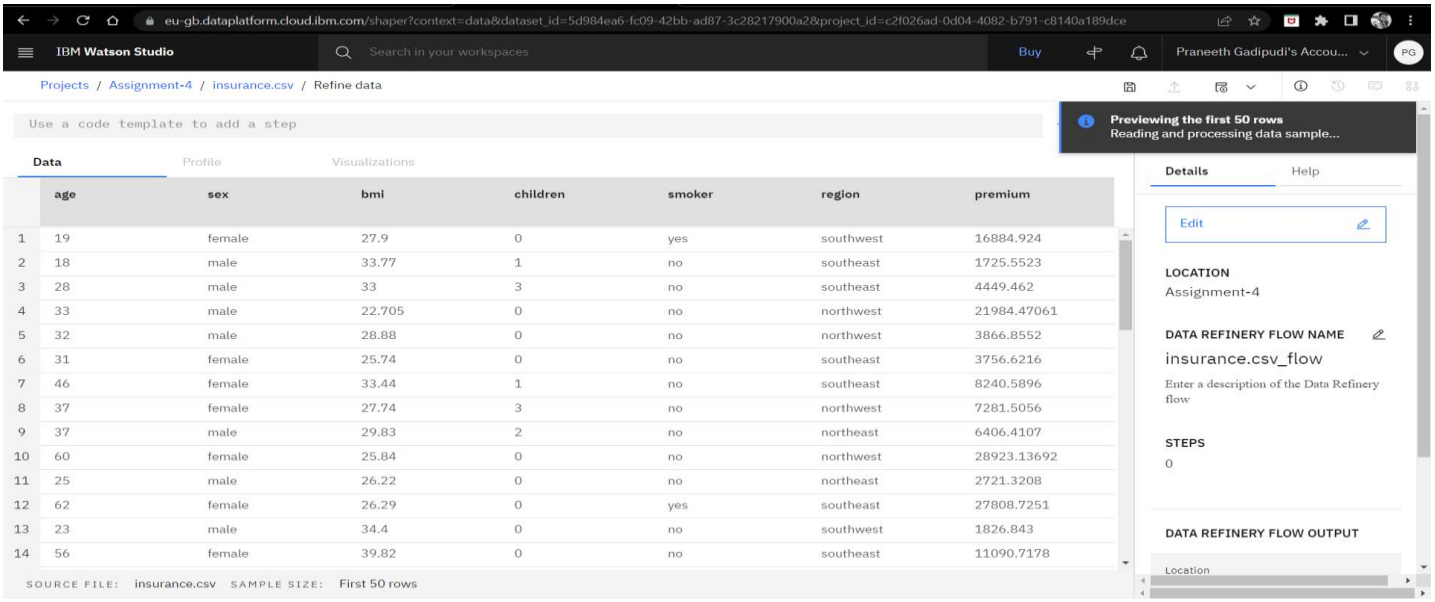
Clustering: Analysis of Medical Premium Charges for Insurance

Dataset: insurance.csv

Adding the dataset to the project

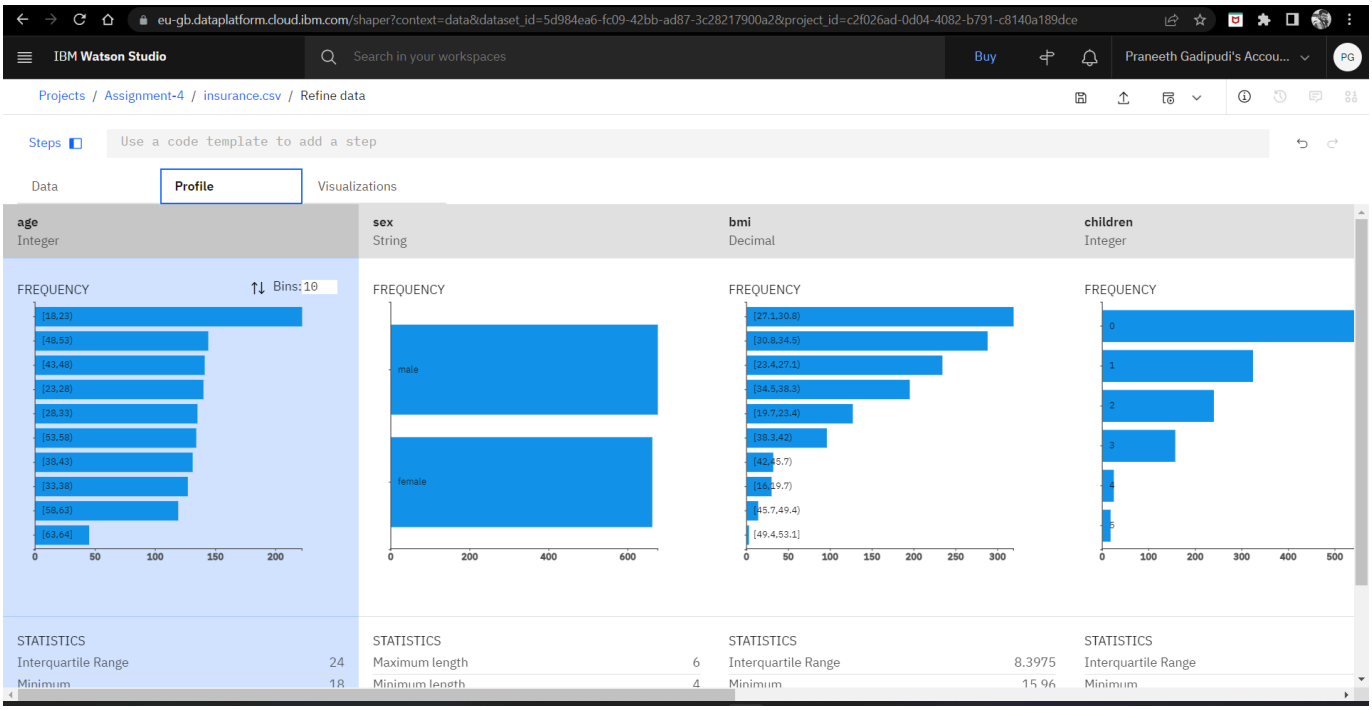


Data Refinery

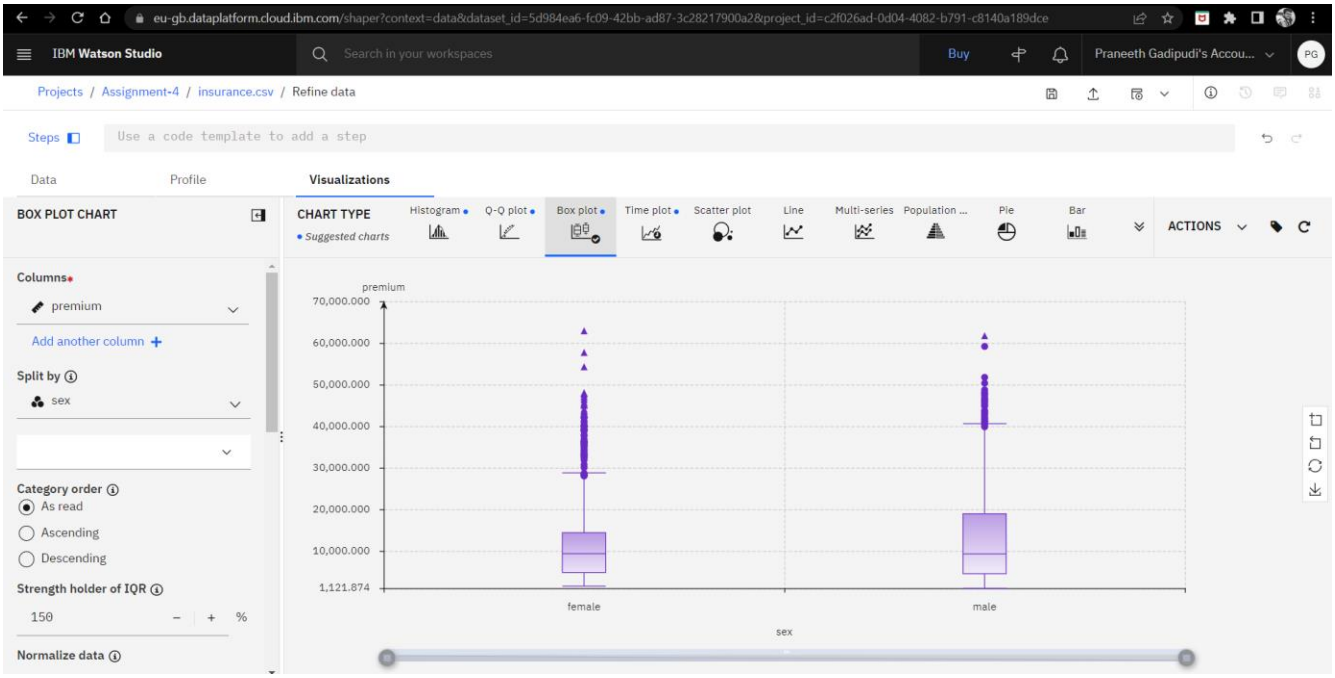


	age	sex	bmi	children	smoker	region	premium
1	19	female	27.9	0	yes	southwest	16884.924
2	18	male	33.77	1	no	southeast	1725.5523
3	28	male	33	3	no	southeast	4449.462
4	33	male	22.705	0	no	northwest	21984.47061
5	32	male	28.88	0	no	northwest	3866.8552
6	31	female	25.74	0	no	southeast	3756.6216
7	46	female	33.44	1	no	southeast	8240.5896
8	37	female	27.74	3	no	northwest	7281.5056
9	37	male	29.83	2	no	northeast	6406.4107
10	60	female	25.84	0	no	northwest	28923.13692
11	25	male	26.22	0	no	northeast	2721.3208
12	62	female	26.29	0	yes	southeast	27808.7251
13	23	male	34.4	0	no	southwest	1826.843
14	56	female	39.82	0	no	southeast	11090.7178

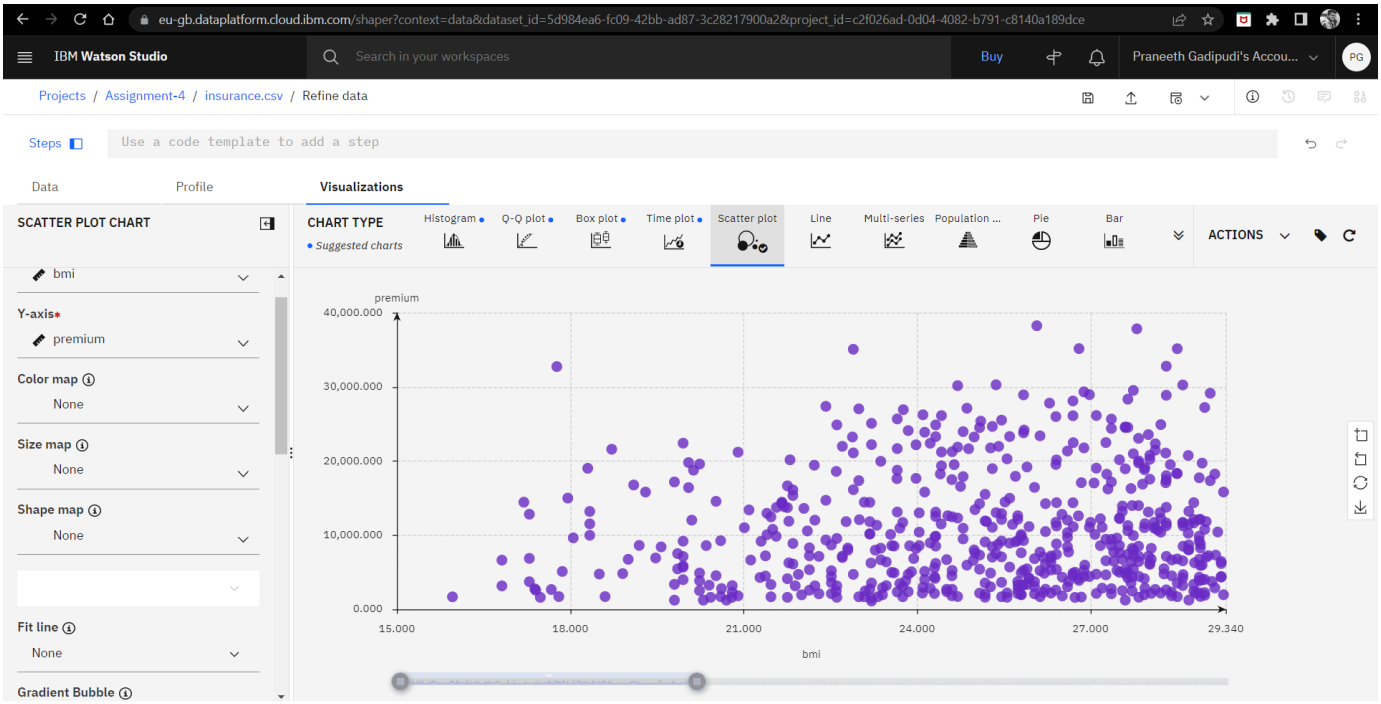
Profile:



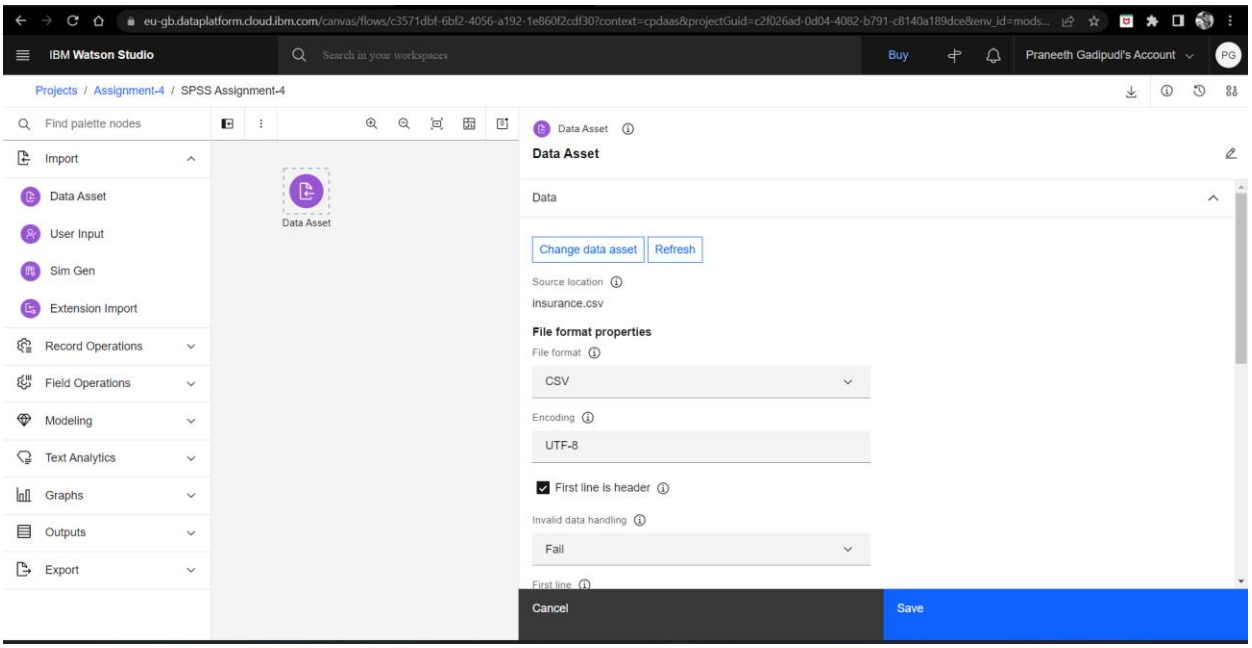
Visualization: Viewing Boxplot of Sex vs Premium



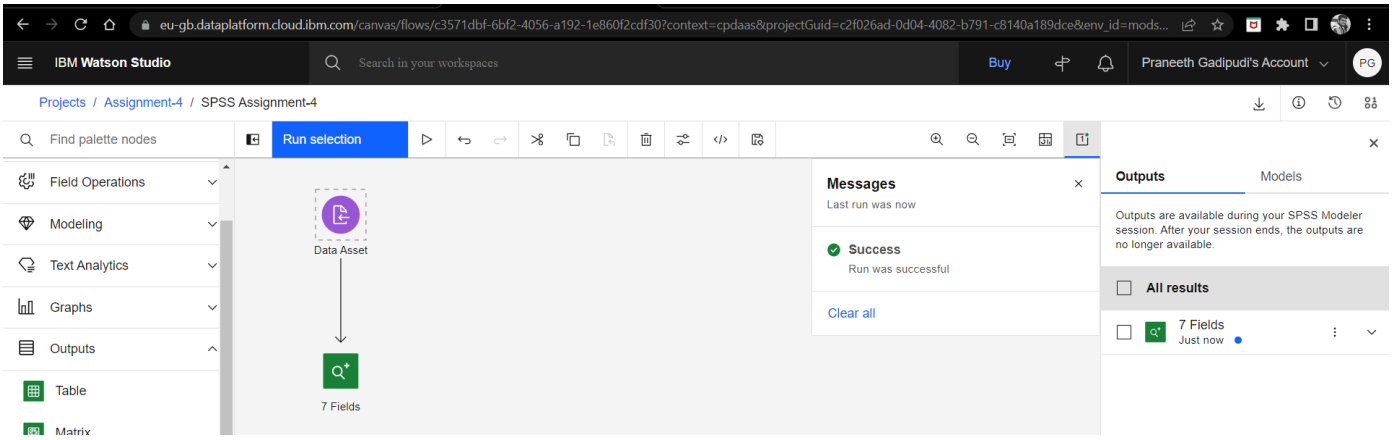
Scatterplot of BMI vs Premium:



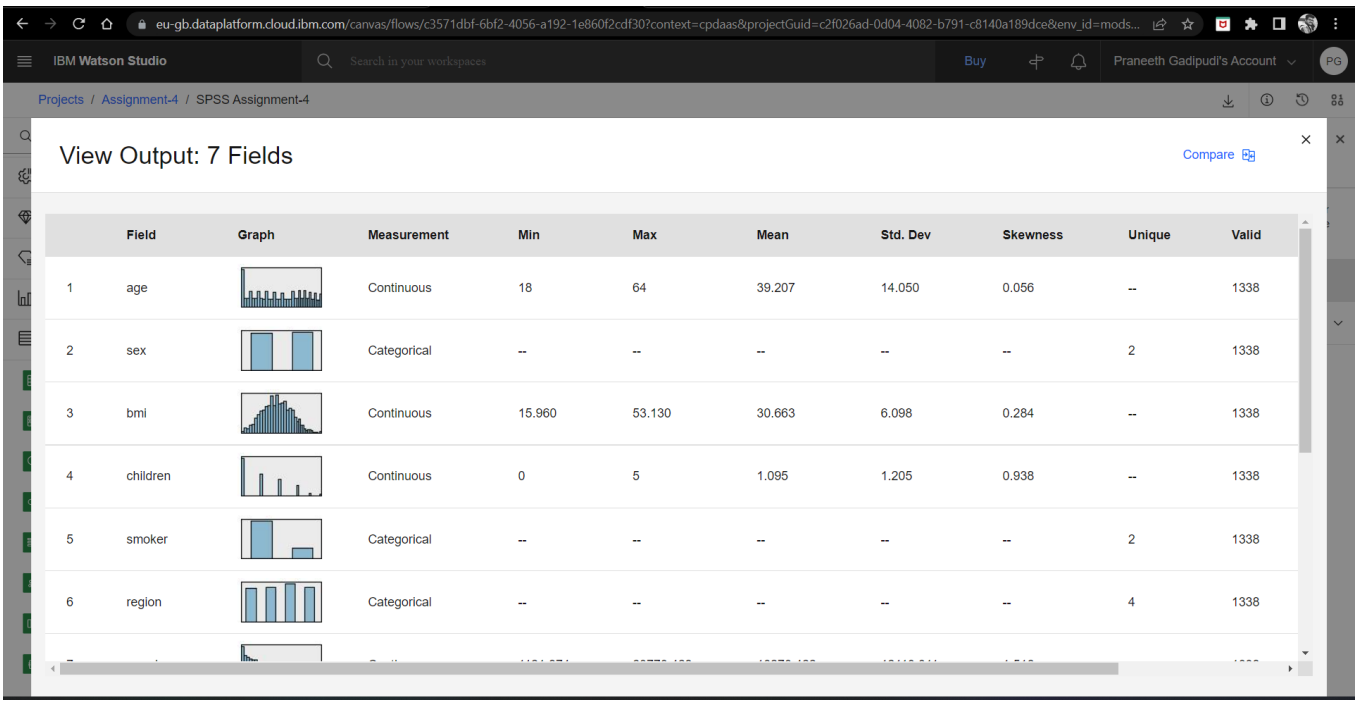
Creating an SPSS Modeler and uploading the dataset:



Data Audit:

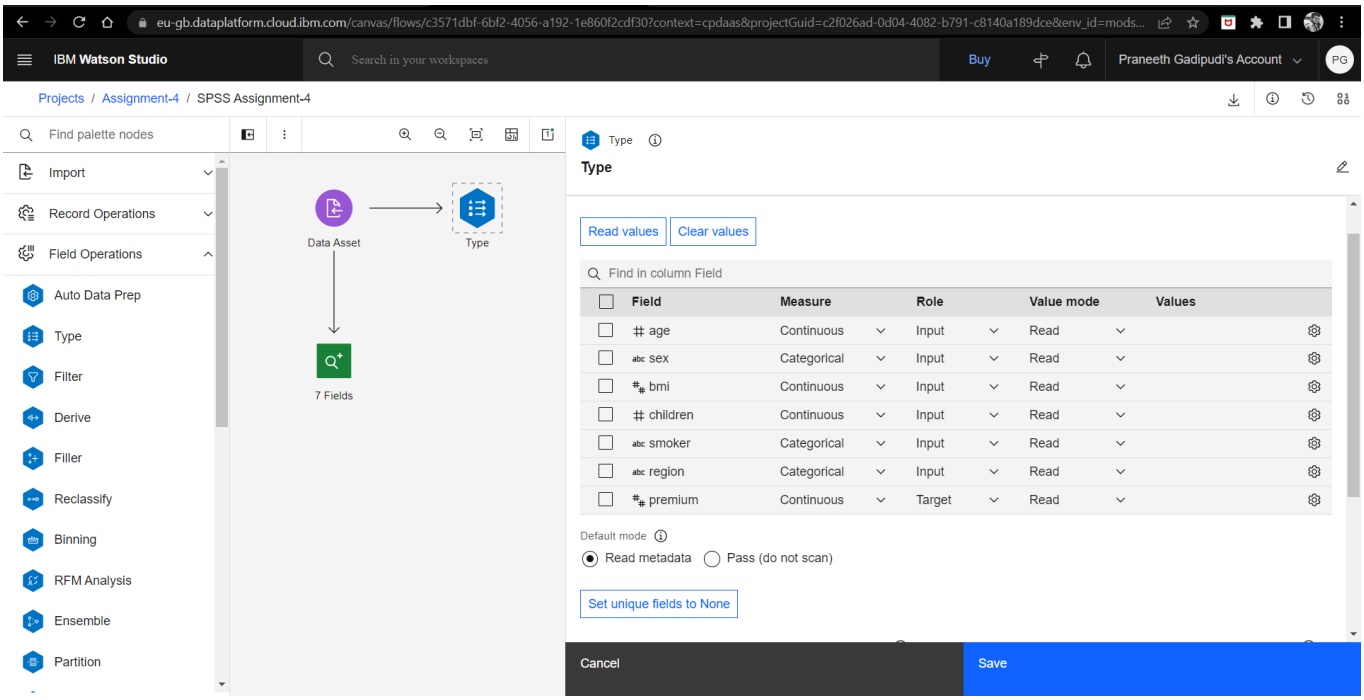


Data Audit output:

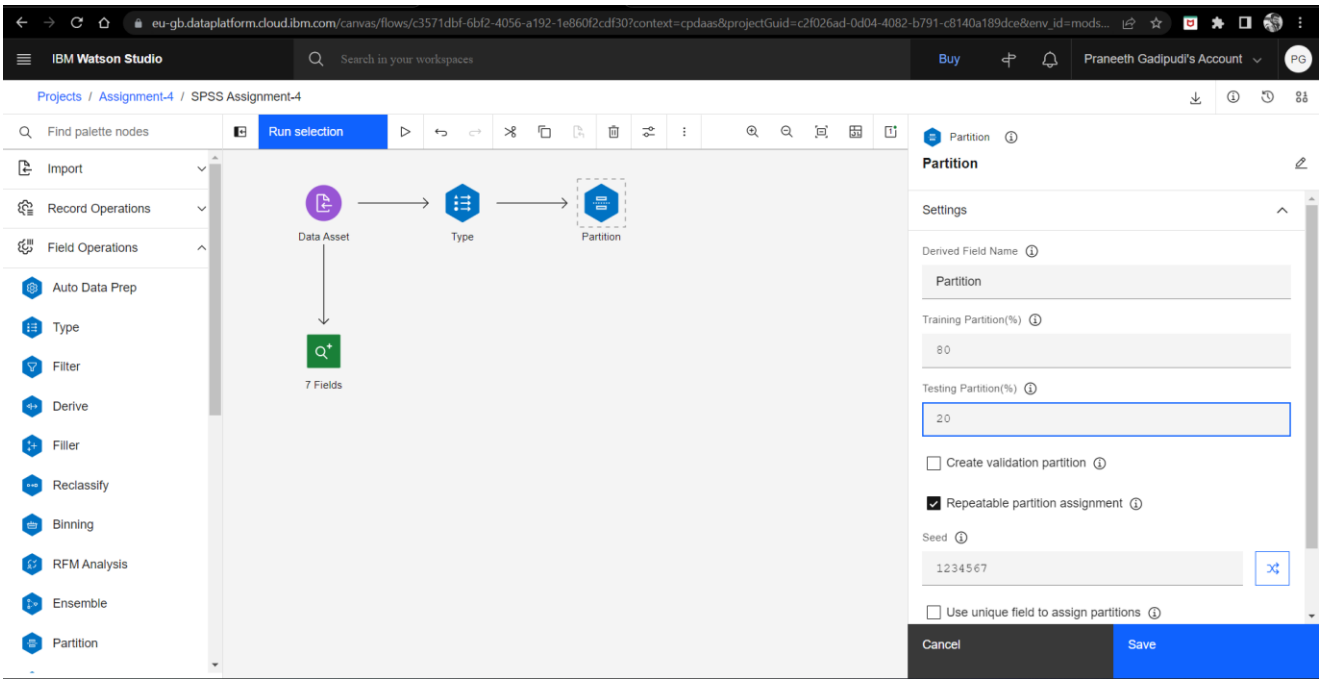


	Field	Graph	Measurement	Min	Max	Mean	Std. Dev	Skewness	Unique	Valid
1	age		Continuous	18	64	39.207	14.050	0.056	--	1338
2	sex		Categorical	--	--	--	--	--	2	1338
3	bmi		Continuous	15.960	53.130	30.663	6.098	0.284	--	1338
4	children		Continuous	0	5	1.095	1.205	0.938	--	1338
5	smoker		Categorical	--	--	--	--	--	2	1338
6	region		Categorical	--	--	--	--	--	4	1338

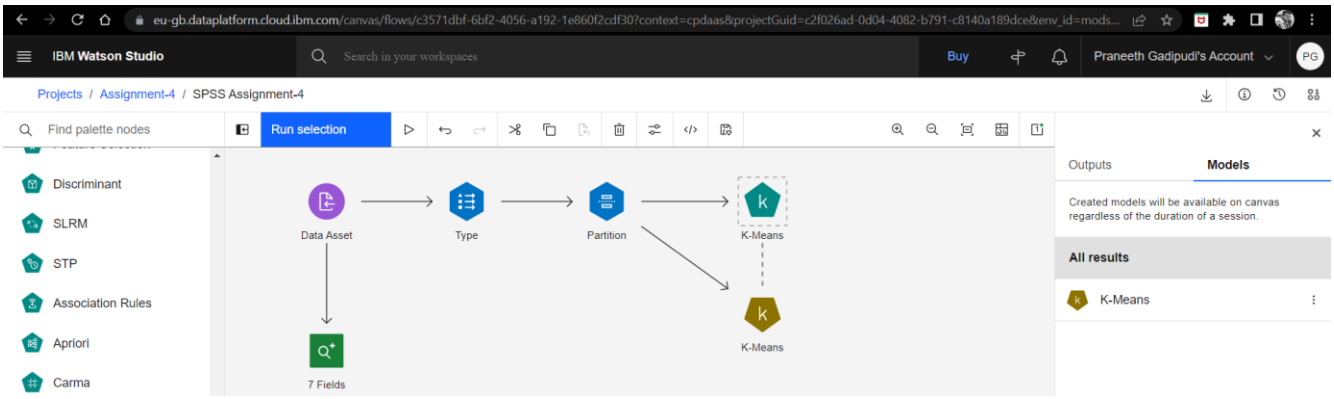
Type Node:



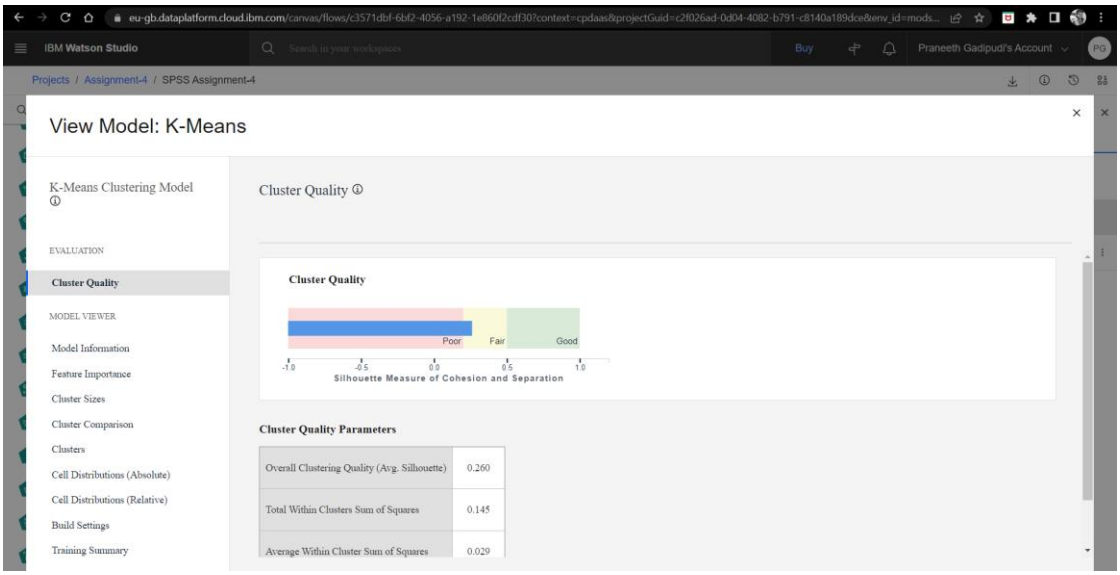
Partition Node:

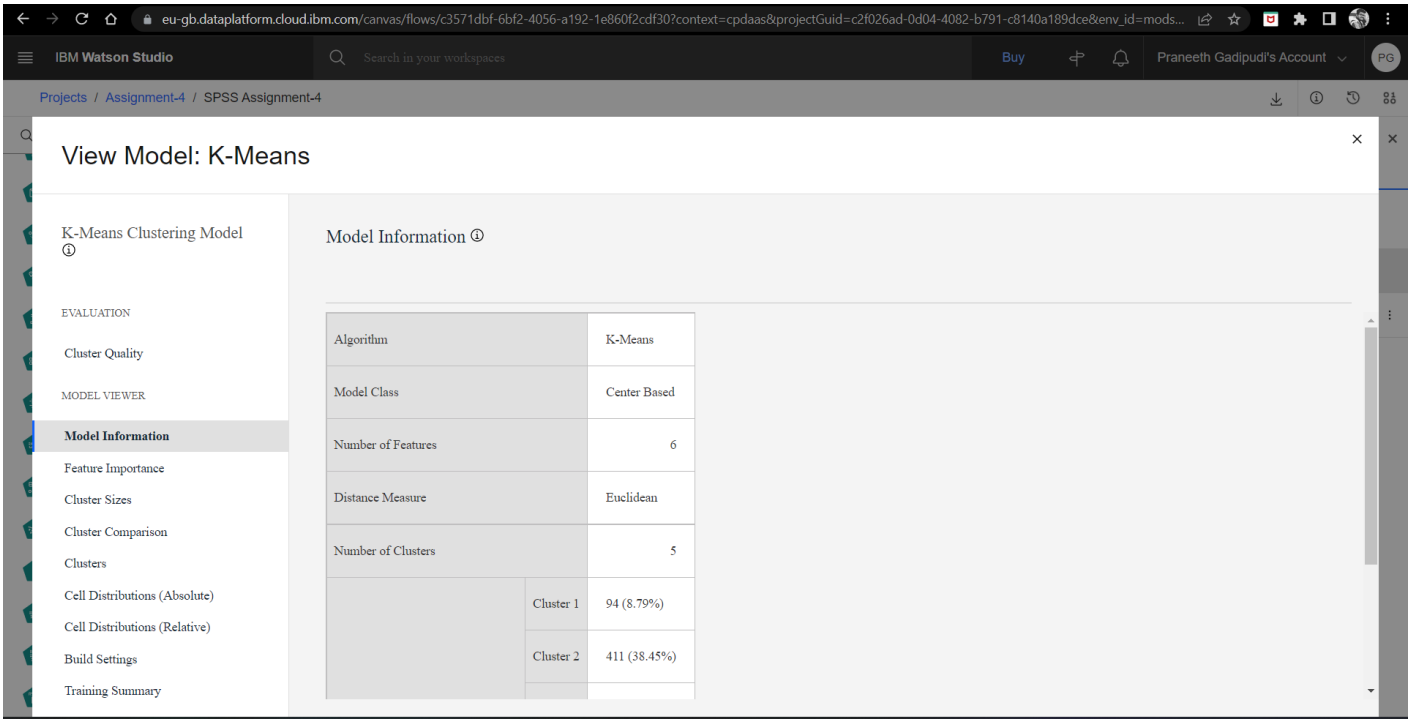


K-Means Cluster Model:



K-means Output:

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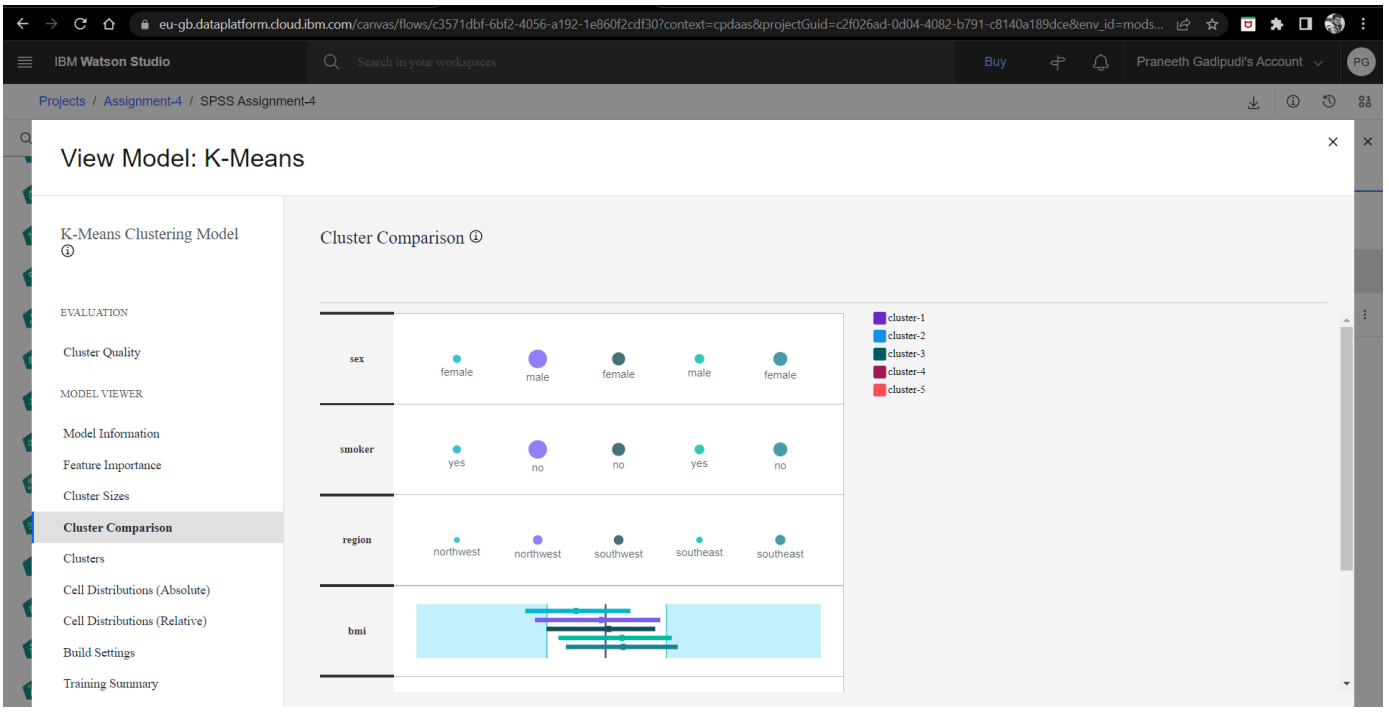
Projects / Assignment-4 / SPSS Assignment-4
View Model: K-Means
K-Means Clustering Model
EVALUATION
Cluster Quality
MODEL VIEWER
Model Information
Feature Importance
Cluster Sizes
Cluster Comparison
Clusters
Cell Distributions (Absolute)
Cell Distributions (Relative)
Build Settings
Training Summary
Model Information
Algorithm
K-Means
Model Class
Center Based
Number of Features
6
Distance Measure
Euclidean
Number of Clusters
5
Cluster 1
94 (8.79%)
Cluster 2
411 (38.45%)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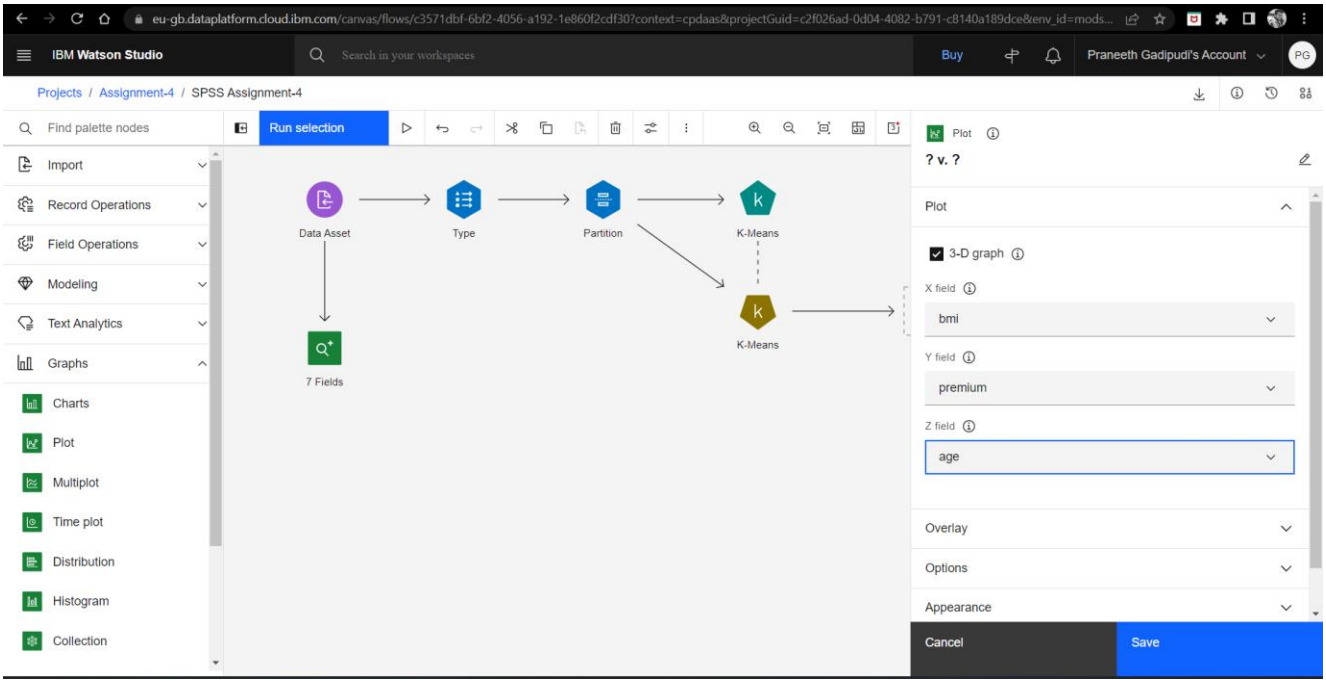
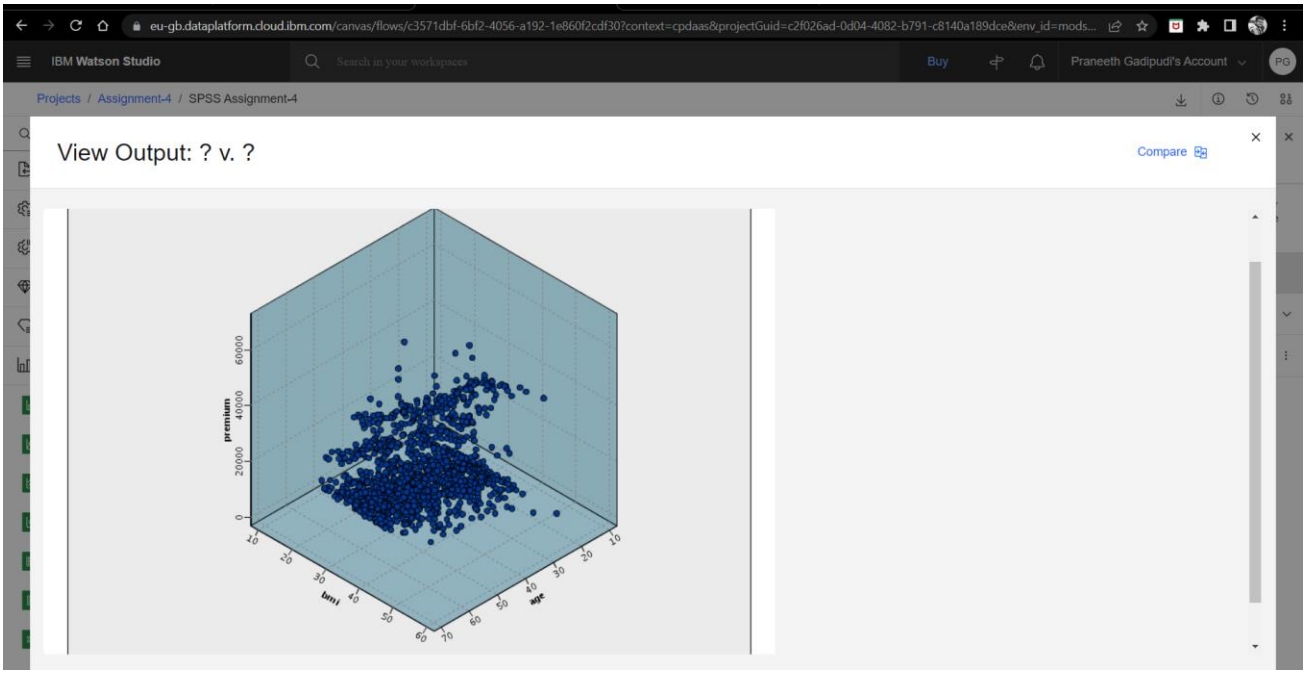
Cell Distributions (Relative)
Build Settings
Training Summary
Cluster Comparison
sex
female
male
female
male
female
smoker
yes
no
no
yes
no
region
northwest
northwest
southwest
southeast
southeast
bmi
cluster-1
cluster-2
cluster-3
cluster-4
cluster-5

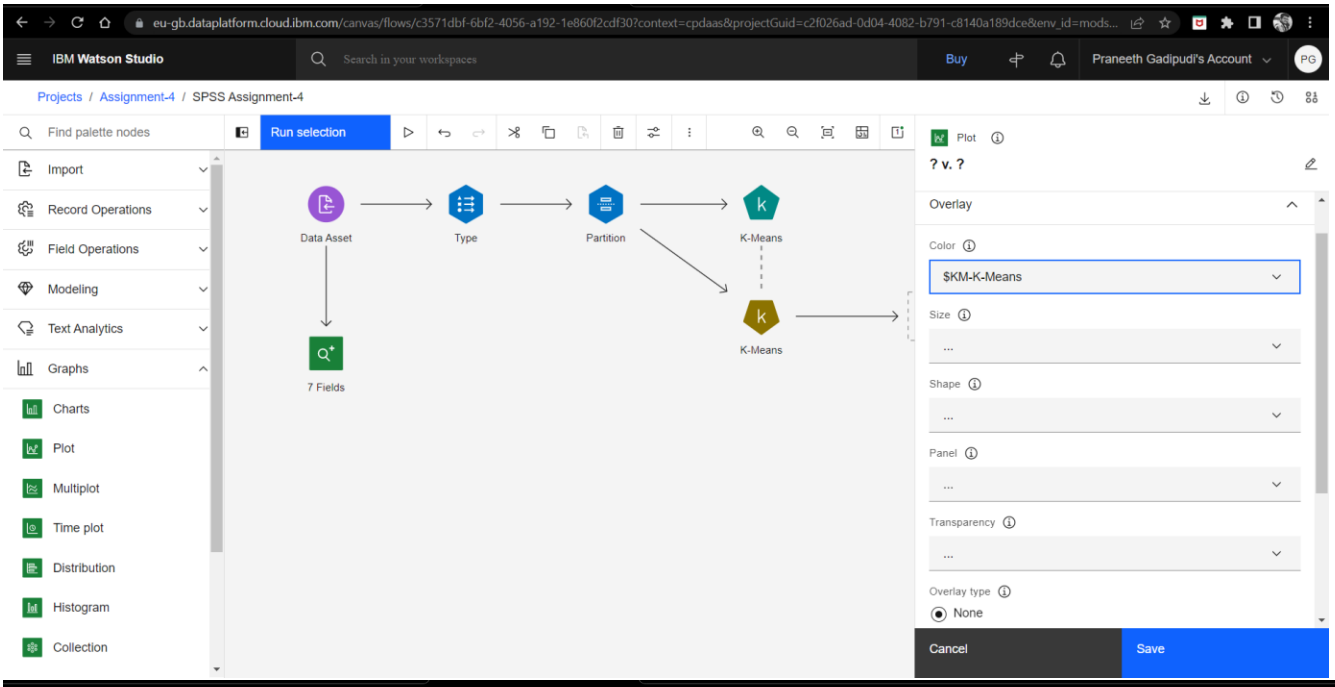
Plot Node:

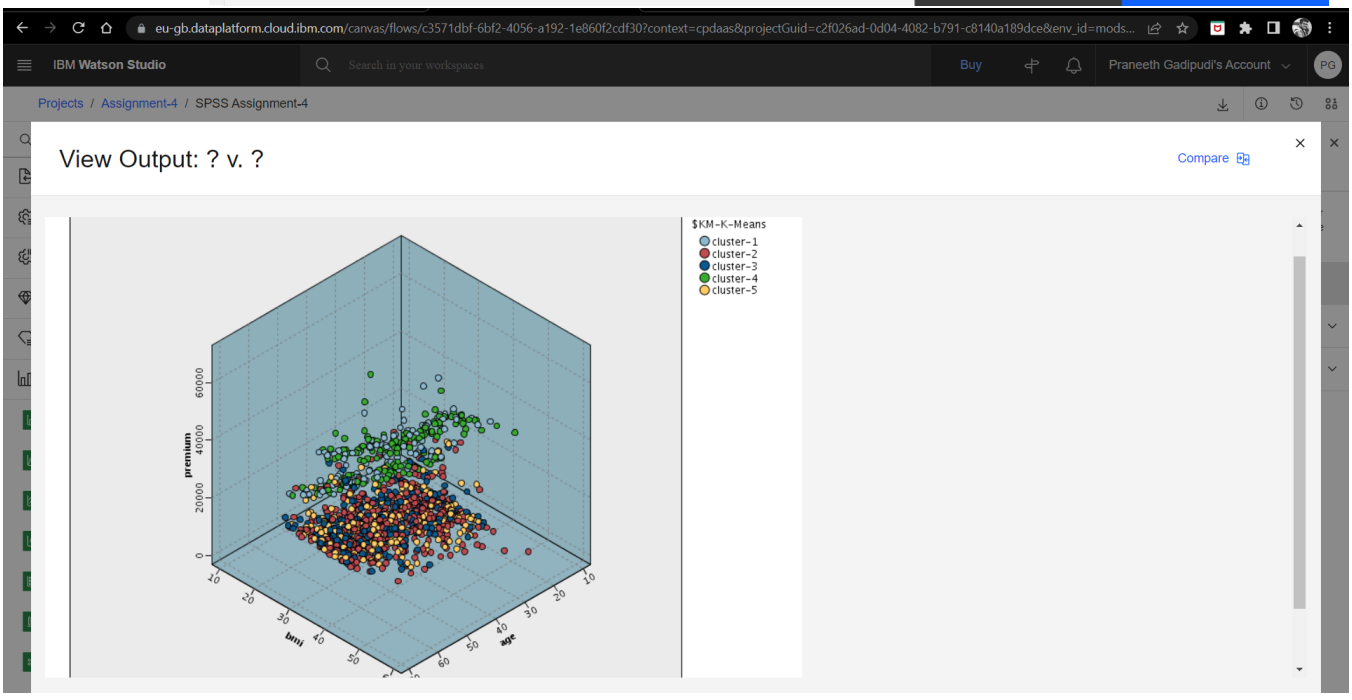


Output:

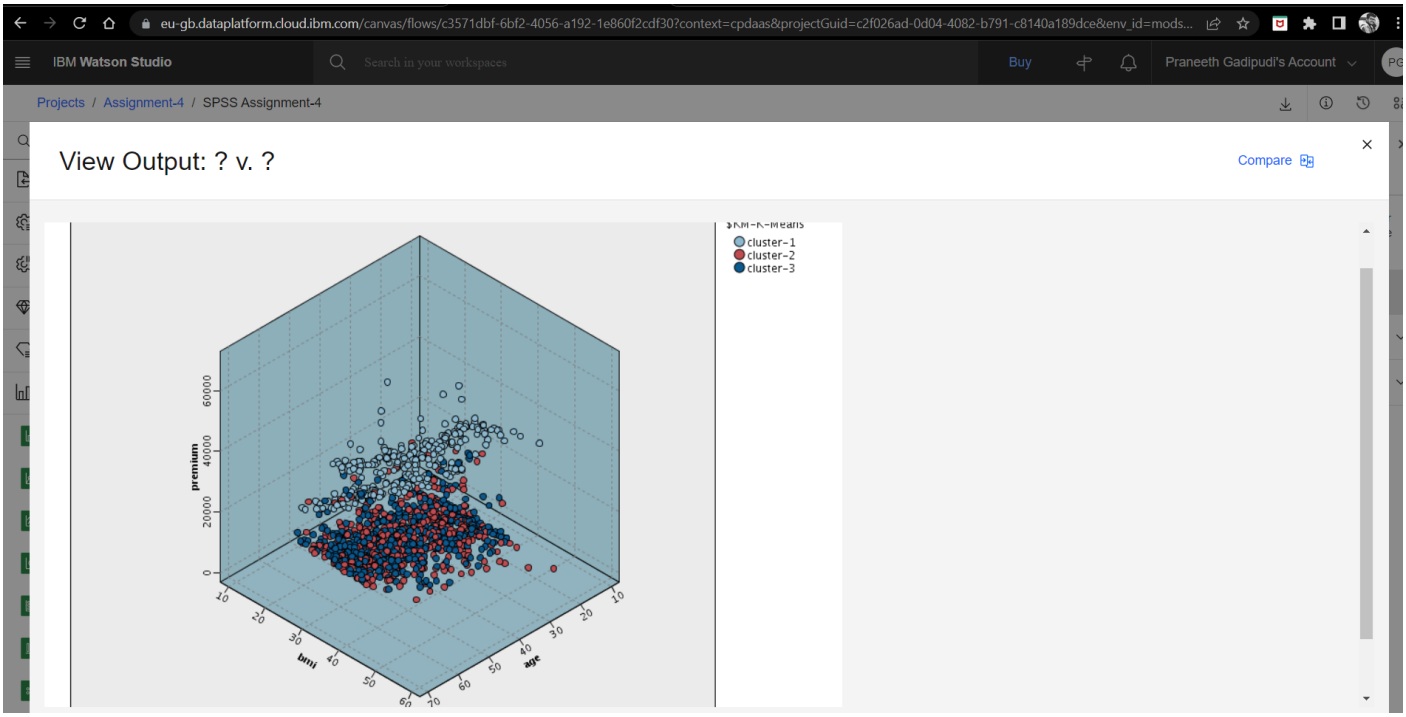


Assigning Color:





Cluster =3: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View Output: ? v. ?
Compare
cluster-1
cluster-2
cluster-3
premium
bmi
age