

DATA ANALYTICS

ASSIGNMENT-4

VIT-VELLORE CAMPUS

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REG.NO : 19BEC0398

CLUSTERING MEDICAL PREMIUM CHARGES

My projects / Medical Premium charges / insurance.csv

Preview Activities

Schema: 7 Columns
The preview includes only a limited set of columns and rows. ⓘ

Last refresh: just now [Refine](#)

age String	sex String	bmi String	children String	smoker String	region String	premium String
19	female	27.9	0	yes	southwest	16884.924
18	male	33.77	1	no	southeast	1725.5523
28	male	33	3	no	southeast	4449.462
33	male	22.705	0	no	northwest	21984.47061
32	male	28.88	0	no	northwest	3866.8552
31	female	25.74	0	no	southeast	3756.6216
46	female	33.44	1	no	southeast	8240.5896
37	female	27.74	3	no	northwest	7281.5056
37	male	29.83	2	no	northeast	6406.4107
60	female	25.84	0	no	northwest	28923.13692

Information

Data asset

insurance.csv

Description

No description available for this asset

Tags

No tags available for this asset

Creator

Sachin K S

Usage

Created on Apr 28, 2022, 10:58 PM

Size

55.628 KB

Projects / Medical Premium charges / insurance.csv / Refine data

Steps (1)

Data Source

insurance.csv

1. Convert column type

Automatically converted one or more columns to inferred data types. Strings that are converted to decimal use a dot (.) for the decimal symbol.

Auto-generated

New step

Use a code template to add a step

	Data	Profile	Visualizations		
	age Integer	sex String	bmi Decimal	children Integer	smoker String
1	19	female	27.9	0	yes
2	18	male	33.77	1	no
3	28	male	33	3	no
4	33	male	22.705	0	no
5	32	male	28.88	0	no
6	31	female	25.74	0	no
7	46	female	33.44	1	no
8	37	female	27.74	3	no
9	37	male	29.83	2	no
10	60	female	25.84	0	no
11	25	male	26.22	0	no
12	62	female	26.29	0	yes
13	23	male	34.4	0	no
14	56	female	39.82	0	no

SOURCE FILE: insurance.csv FULL DATA SET: 1338 rows

Information

Details

Help

Edit

LOCATION

Medical Premium charges

DATA REFINERY FLOW NAME

insurance.csv_flow

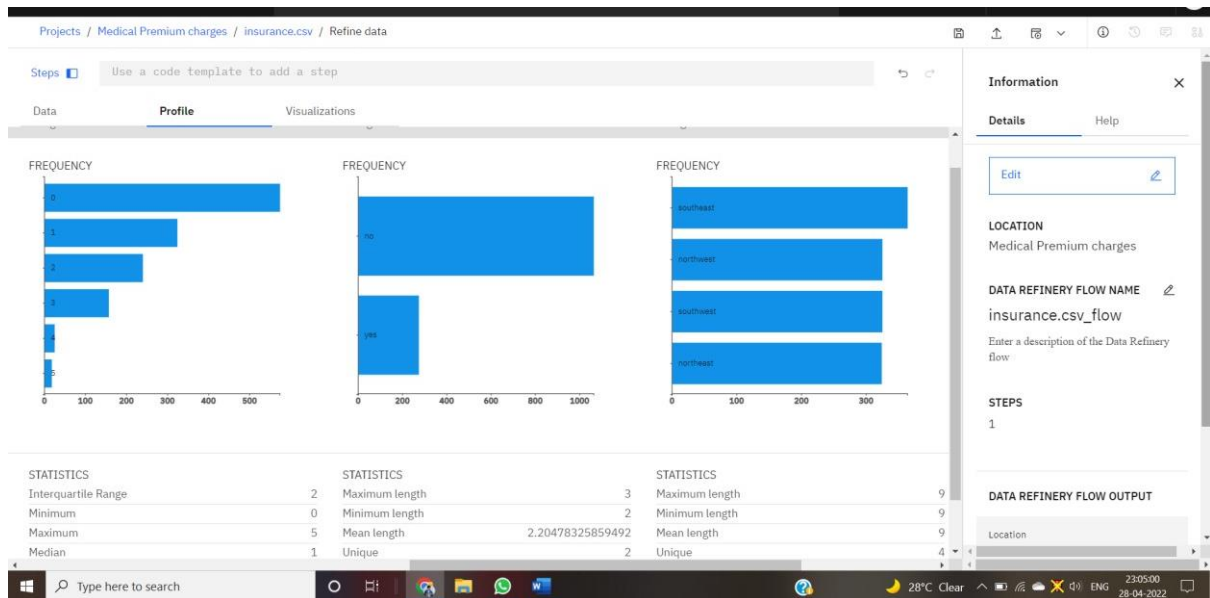
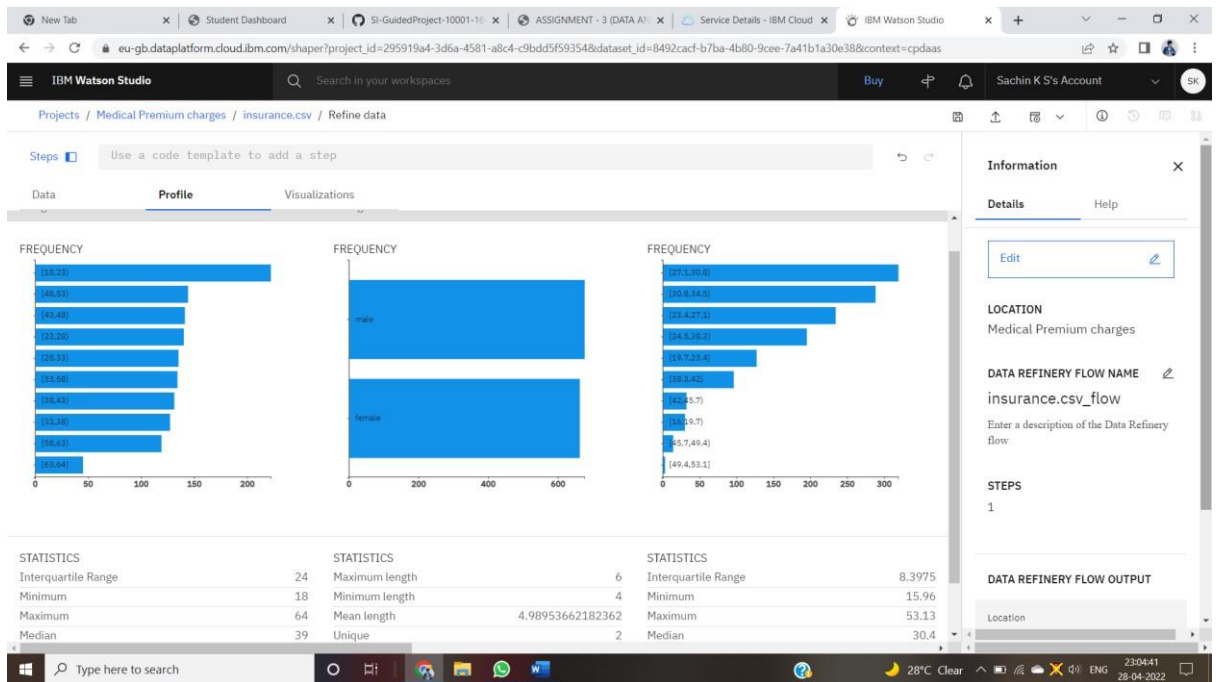
Enter a description of the Data Refinery flow

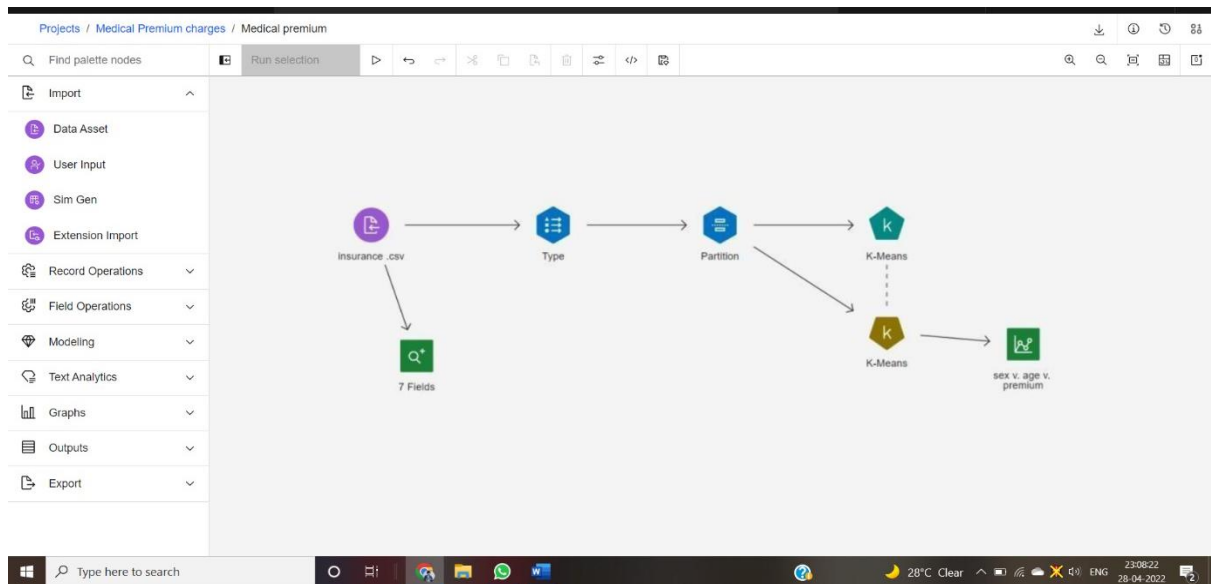
STEPS

1

DATA REFINERY FLOW OUTPUT

Location







View Output: Data Audit of [7 fields]

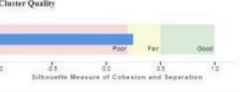
	Field	Graph	Measurement	Min	Max	Mean	Std. Dev	Skewness	Unique	Valid
1	age		Continuous	18	64	39.207	14.050	0.056	--	1338
2	sex		Categorical	--	--	--	--	--	2	1338
3	bmi		Continuous	15.960	53.130	30.663	6.098	0.284	--	1338
4	children		Continuous	0	5	1.095	1.205	0.938	--	1338
5	smoker		Categorical	--	--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

[Back](#)
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[Save Project](#)
[Export Project](#)
[Import Project](#)
[Delete Project](#)

View Output: Data Audit of [7 fields]

6	region		Categorical	--	--	--	--	--	4	1338	
7	premium		Continuous	1121.874	63770.428	13270.422	12110.011	1.516	--	1338	
	Field	Measurement	Outliers	Extremes	Action	Impute Missing	Method	% Complete	Valid Records	Null Value	Empty String
1	age	Continuous	0	0	None	Never	Fixed	100.000	1338	0	0
2	sex	Categorical	--	--	--	Never	Fixed	100.000	1338	0	0
3	bmi	Continuous	4	0	None	Never	Fixed	100.000	1338	0	0
4	children	Continuous	18	0	None	Never	Fixed	100.000	1338	0	0
5	smoker	Categorical	--	--	--	Never	Fixed	100.000	1338	0	0
6	region	Categorical	--	--	--	Never	Fixed	100.000	1338	0	0
7	premium	Continuous	7	0	None	Never	Fixed	100.000	1338	0	0

View Model: K-Means

K-Means Clustering Model	Cluster Quality								
EVALUATION									
Cluster Quality	<div><div>Cluster Quality</div><div>Silhouette Measure of Cohesion and Separation</div></div>								
MODEL VIEWER	Cluster Quality Parameters								
Model Information									
Feature Importance									
Cluster Size									
Cluster Comparisons									
Clusters									
Cell Distributions (Absolute)									
Cell Distributions (Relative)									
Build Settings									
Training Summary									
	<table><tr><td>Overall Clustering Quality (Avg. Silhouette)</td><td>0.249</td></tr><tr><td>Total Within Clusters Sum of Squares</td><td>0.132</td></tr><tr><td>Average Within Cluster Sum of Squares</td><td>0.026</td></tr><tr><td>Average SSB (Between ss)</td><td>0.075</td></tr></table>	Overall Clustering Quality (Avg. Silhouette)	0.249	Total Within Clusters Sum of Squares	0.132	Average Within Cluster Sum of Squares	0.026	Average SSB (Between ss)	0.075
Overall Clustering Quality (Avg. Silhouette)	0.249								
Total Within Clusters Sum of Squares	0.132								
Average Within Cluster Sum of Squares	0.026								
Average SSB (Between ss)	0.075								

View Model: K-Means

K-Means Clustering Model
ID

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparisons

Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Training Summary

Model Information ⓘ

Algorithm	K-Means	
Model Class	Center Based	
Number of Features	7	
Distance Measure	Euclidean	
Number of Clusters	5	
Number of instances in each cluster	Cluster 1	81 (8.75%)
	Cluster 2	388 (39.33%)
	Cluster 3	112 (12.03%)
	Cluster 4	190 (20.41%)
	Cluster 5	180 (19.21%)
Ratio of sizes (Largest to smallest)		4.543

View Model: K-Means

K-Means Clustering Model
ID

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparisons

Clusters

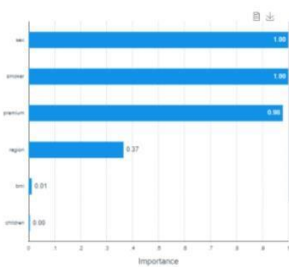
Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Training Summary

Feature Importance ⓘ



View Model: K-Means

K-Means Clustering Model
ID

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparisons

Clusters

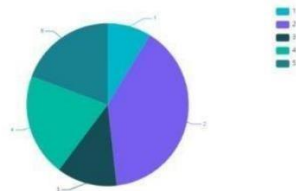
Cell Distributions (Absolute)

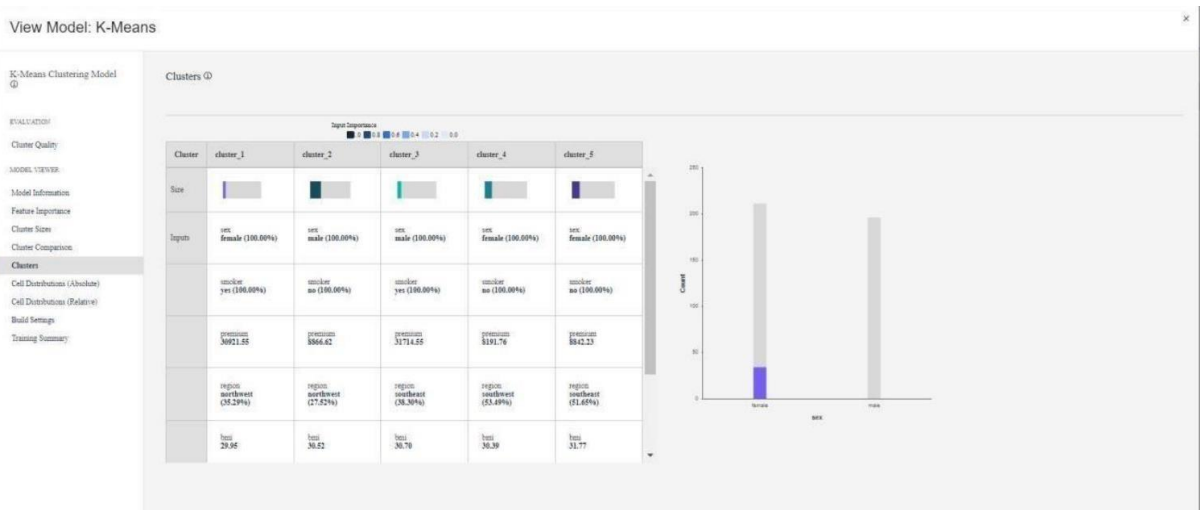
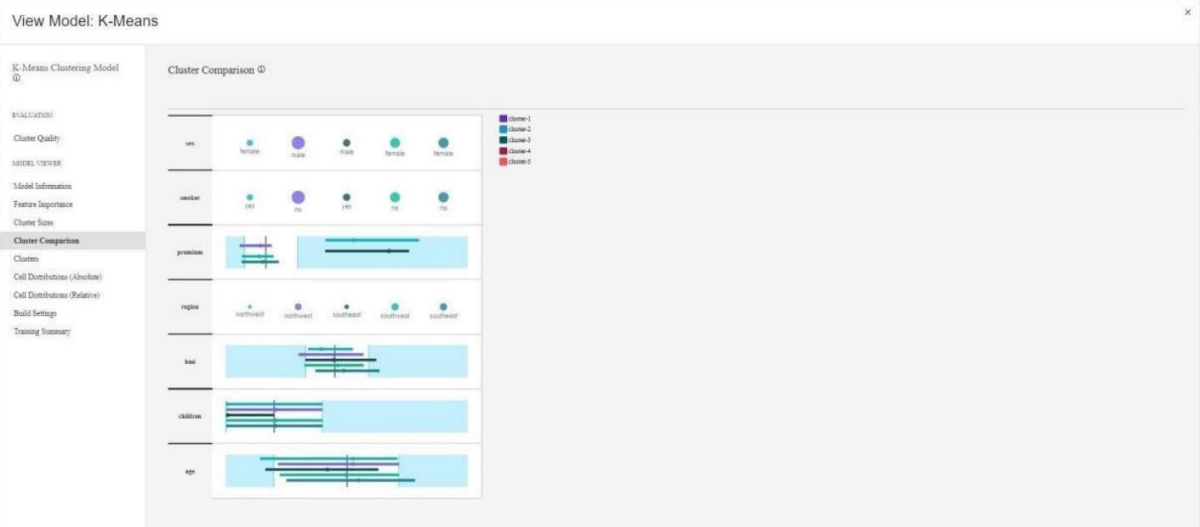
Cell Distributions (Relative)

Build Settings

Training Summary

Cluster Sizes ⓘ





View Model: K-Means

X

K-Means Clustering Model

⊞

EVALUATION

Cluster Quality

MODEL CENTER

Model Information

Feature Importance

Cluster Size

Cluster Composition

Clusters

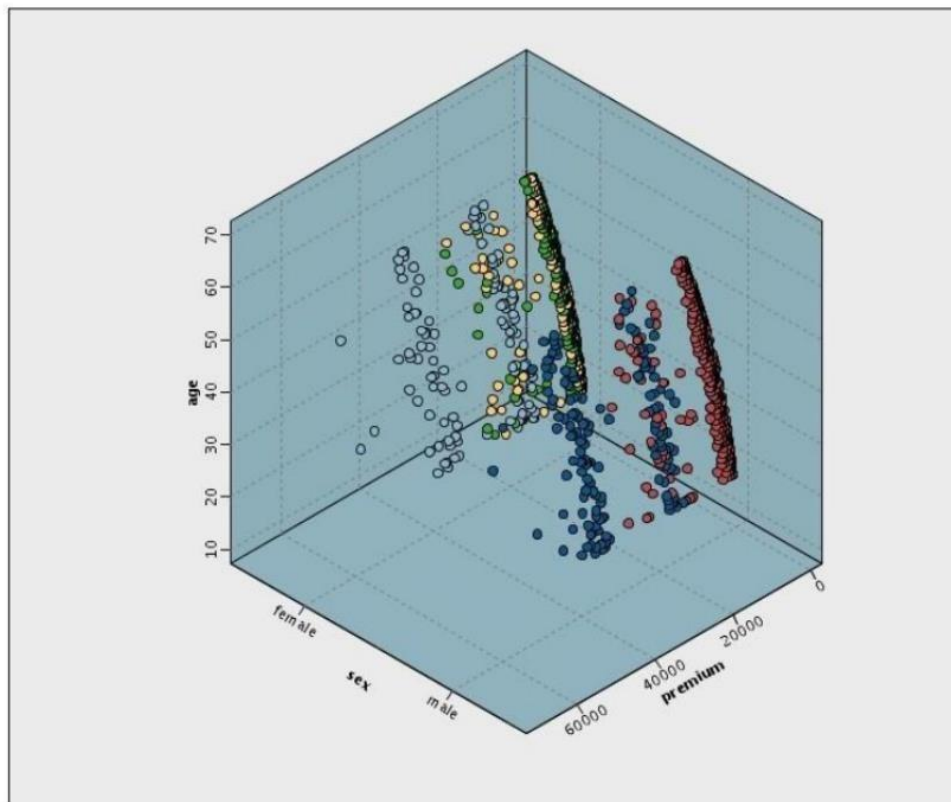
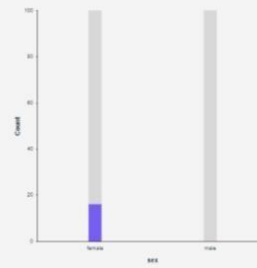
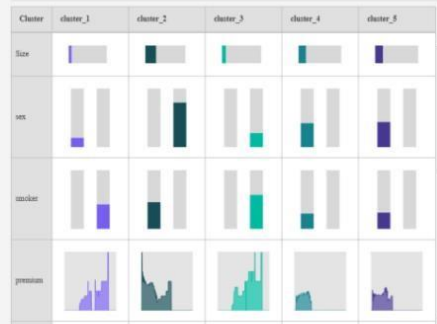
Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Training Summary

Cell Distributions (Relative) ⊞



\$KM-K-Means

- cluster-1
- cluster-2
- cluster-3
- cluster-4
- cluster-5