











Projects / Bank assignment 3

  Launch IDE 

Add to project 

0 assets selected.

<input type="checkbox"/>	Name	Type	Created by	Last modified	
<input type="checkbox"/>	CSV bank.csv	Data Asset	Krish gupta	Dec 22, 2021, 06:10 PM	



Models

Watson Machine Learning models

Name	Type	Software specification	Last modified	
Team Deposit Classification	spss-modeler_18.2	spss-modeler_18.2	Dec 22, 2021	

Modeler flows

[New Modeler flow](#) 

Name	Type	Created by	Last modified		
Team Deposit Classification	SPSS Modeler	Krish gupta	Dec 22, 2021, 11:22 PM		

Projects / Bank assignment 3



Launch IDE

Add to project



Watson Machine Learning models

Name	Type	Software specification	Last modified
Team Deposit Classification	spss-modeler_18.2	spss-modeler_18.2	Dec 22, 2021

Modeler flows

[New Modeler flow](#)

Name	Type	Created by	Last modified
Team Deposit Classification	SPSS Modeler	Krish gupta	Dec 22, 2021, 11:22 PM

Data Refinery flows

[New Data Refinery flow](#)

Name	Type	Created by	Last modified
bank.csv_flow	Data Refinery flow	Krish gupta	Dec 22, 2021, 10:37 PM



IBM Watson Studio

All

Search

Buy

2

Krish gupta's Account

KG

Projects / Bank assignment 3 / bank.csv

Preview

Activities

Visualization

Schema: 17 Columns

Preview: First 1000 rows


Last refresh: 16 seconds ago

Refine

age String	job String	marital String	education String	default String	balance String	housing String	loan String	contact String	day String	month String	duration String	campaign String	pdays String	prev String
59	admin.	married	secondary	no	2343	yes	no	unknown	5	may	1042	1	-1	0
56	admin.	married	secondary	no	45	no	no	unknown	5	may	1467	1	-1	0
41	technician	married	secondary	no	1270	yes	no	unknown	5	may	1389	1	-1	0
55	services	married	secondary	no	2476	yes	no	unknown	5	may	579	1	-1	0
54	admin.	married	tertiary	no	184	no	no	unknown	5	may	673	2	-1	0
42	management	single	tertiary	no	0	yes	yes	unknown	5	may	562	2	-1	0
56	management	married	tertiary	no	830	yes	yes	unknown	6	may	1201	1	-1	0
60	retired	divorced	secondary	no	545	yes	no	unknown	6	may	1030	1	-1	0
37	technician	married	secondary	no	1	yes	no	unknown	6	may	608	1	-1	0
28	services	single	secondary	no	5090	yes	no	unknown	6	may	1297	3	-1	0
38	admin.	single	secondary	no	100	yes	no	unknown	7	may	786	1	-1	0
30	blue-collar	married	secondary	no	309	yes	no	unknown	7	may	1574	2	-1	0
29	management	married	tertiary	no	199	yes	yes	unknown	7	may	1689	4	-1	0
46	blue-collar	single	tertiary	no	460	yes	no	unknown	7	may	1102	2	-1	0

Team Deposit Classification

Promote to deployment space



Overview

Activities

Input Schema

Input		
Column	↑	Type
age		"integer"
balance		"integer"
campaign		"integer"
contact		"string"
day		"integer"
default		"string"
deposit		"string"
duration		"integer"
education		"string"

Output		
Column	↑	Type
Partition		"string"
age		"integer"
balance		"integer"
campaign		"integer"
contact		"string"
day		"integer"
default		"string"
deposit		"string"
duration		"integer"



Team Deposit Classification

Promote to deployment space

Overview

Activities

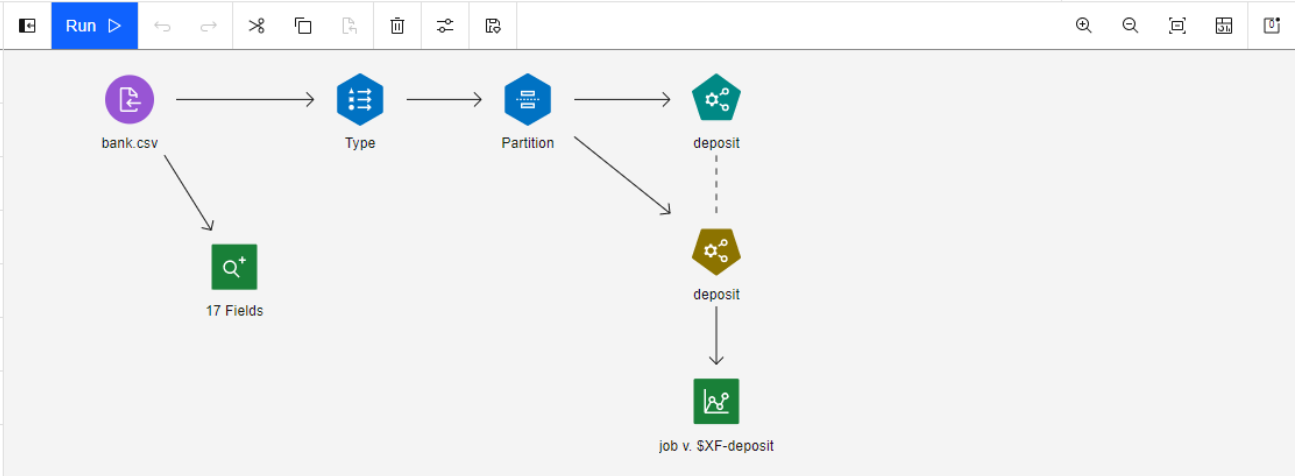
Input Schema

Input	
duration	"integer"
education	"string"
housing	"string"
job	"string"
loan	"string"
marital	"string"
month	"string"
pdays	"integer"
poutcome	"string"
previous	"integer"

Output	
duration	"integer"
education	"string"
housing	"string"
job	"string"
loan	"string"
marital	"string"
month	"string"
pdays	"integer"
poutcome	"string"
previous	"integer"



- 🔍 Find palette nodes
- 📄 Import ▼
- ⚙ Record Operations ▼
- ⚙ Field Operations ▼
- 💎 Modeling ▼
- 🔍 Text Analytics ▼
- 📊 Graphs ▼
- 📄 Outputs ▼
- 📄 Export ▼





Type

[Read Values](#)[Clear All Values](#)


Find in column Field









<input type="checkbox"/>	Field	Measure		Role		Value mode	Values	Check
<input type="checkbox"/>	# age	Continuous	▼	None	▼	Instantiated ▼	18, 95	None ▼
<input type="checkbox"/>	abc job	Nominal	▼	Input	▼	Instantiated ▼	admin., blue-collar...	None ▼
<input type="checkbox"/>	abc marital	Nominal	▼	Input	▼	Instantiated ▼	divorced, married, ...	None ▼
<input type="checkbox"/>	abc education	Nominal	▼	None	▼	Instantiated ▼	primary, secondar...	None ▼
<input type="checkbox"/>	abc default	Flag	▼	None	▼	Instantiated ▼	no, yes	None ▼
<input type="checkbox"/>	# balance	Continuous	▼	None	▼	Instantiated ▼	-6847, 81204	None ▼
<input type="checkbox"/>	abc housing	Flag	▼	None	▼	Instantiated ▼	no, yes	None ▼
<input type="checkbox"/>	abc loan	Flag	▼	None	▼	Instantiated ▼	no, yes	None ▼

Cancel

Save

Type

 Find in column Field

<input type="checkbox"/>	Field	Measure		Role		Value mode	Values	Check
<input type="checkbox"/>	abc contact	Nominal	▼	None	▼	Instantiated ▼	cellular, telephone...	None ▼ 
<input type="checkbox"/>	# day	Continuous	▼	None	▼	Instantiated ▼	1, 31	None ▼ 
<input type="checkbox"/>	abc month	Nominal	▼	None	▼	Instantiated ▼	apr, aug, dec, feb, ...	None ▼ 
<input type="checkbox"/>	# duration	Continuous	▼	None	▼	Instantiated ▼	2, 3881	None ▼ 
<input type="checkbox"/>	# campaign	Continuous	▼	None	▼	Instantiated ▼	1, 63	None ▼ 
<input type="checkbox"/>	# pdays	Continuous	▼	None	▼	Instantiated ▼	-1, 854	None ▼ 
<input type="checkbox"/>	# previous	Continuous	▼	None	▼	Instantiated ▼	0, 58	None ▼ 
<input type="checkbox"/>	abc poutcome	Nominal	▼	None	▼	Instantiated ▼	failure, other, succ...	None ▼ 

Format 



Type

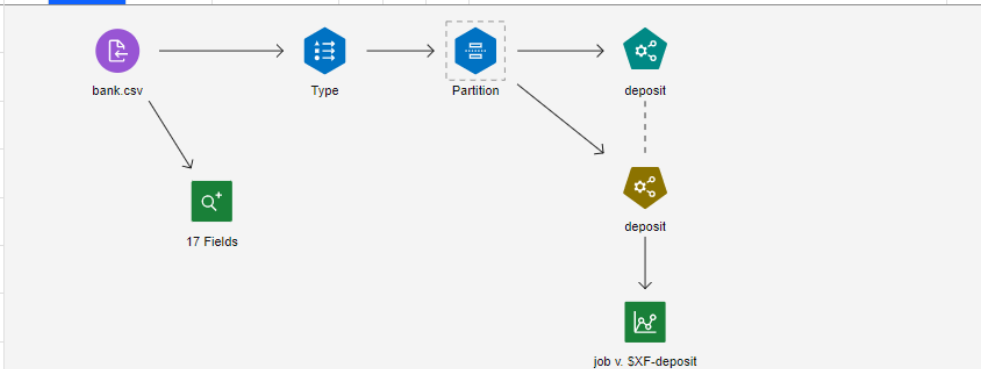
Find in column Field

<input type="checkbox"/>	Field	Measure		Role		Value mode	Values	Check
<input type="checkbox"/>	# day	Continuous	▼	None	▼	Instantiated	1, 31	None ▼ ⚙
<input type="checkbox"/>	abc month	Nominal	▼	None	▼	Instantiated	apr, aug, dec, feb, ...	None ▼ ⚙
<input type="checkbox"/>	# duration	Continuous	▼	None	▼	Instantiated	2, 3881	None ▼ ⚙
<input type="checkbox"/>	# campaign	Continuous	▼	None	▼	Instantiated	1, 63	None ▼ ⚙
<input type="checkbox"/>	# pdays	Continuous	▼	None	▼	Instantiated	-1, 854	None ▼ ⚙
<input type="checkbox"/>	# previous	Continuous	▼	None	▼	Instantiated	0, 58	None ▼ ⚙
<input type="checkbox"/>	abc poutcome	Nominal	▼	None	▼	Instantiated	failure, other, succ...	None ▼ ⚙
<input type="checkbox"/>	abc deposit	Flag	▼	Target	▼	Instantiated	no, yes	None ▼ ⚙

Format ▼

Cancel

Save



eu-gb.dataplatform.cloud.ibm.com/canvas/streams/asset/d3d0bc5b-9eee-4ae0-aebf-0553f63f42ec?context=cpdaas&projectGuid=d47f9e48-a481-46a1-b9...

Apps VIT Recruitment: Te... Student Dashboard Inbox (4,351) - krish... https://www.online... SmartBridge SmartBridge My Home Catalog - IBM Cloud Reading list

IBM Watson StudioAllSearchBuyKrish gupta's AccountKG

Projects / Bank assignment 3 / Team Deposit Classification

Find palette nodes

Run

UndoRedoCopyPasteDeleteLinkBreakLink

FindZoomFitResetFullscreen

Import

Record Operations

Field Operations

Modeling

Text Analytics

Graphs

Outputs

Export

bank.csv

Type

Partition

deposit

17 Fields

deposit

job v. \$XF-deposit

Plot

job v. \$XF-deposit

Plot

☐ 3-D graph

X fieldjob



Y field\$XF-deposit

Z fieldmarital

Overlay








CancelSave

View Output: Data Audit of [17 fields]




	Field	Sample Graph	Measurement	Min	Max	Mean	Std. Dev	Skewness	Unique	Valid
1	age		Continuous	18	95	41.232	11.913	0.863	--	11162
2	job		Categorical	--	--	--	--	--	12	11162
3	marital		Categorical	--	--	--	--	--	3	11162
4	education		Categorical	--	--	--	--	--	4	11162
5	default		Categorical	--	--	--	--	--	2	11162
6	balance		Continuous	-6847	81204	1528.539	3225.413	8.225	--	11162
7	housing		Categorical	--	--	--	--	--	2	11162

View Output: Data Audit of [17 fields]



8	loan		Categorical	--	--	--	--	--	2	11162
9	contact		Categorical	--	--	--	--	--	3	11162
10	day		Continuous	1	31	15.658	8.421	0.111	--	11162
11	month		Categorical	--	--	--	--	--	12	11162
12	duration		Continuous	2	3881	371.994	347.128	2.144	--	11162
13	campaign		Continuous	1	63	2.508	2.722	5.546	--	11162
14	pdays		Continuous	-1	854	51.330	108.758	2.450	--	11162
15	previous		Continuous	0	58	0.833	2.292	7.335	--	11162

View Output: Data Audit of [17 fields]

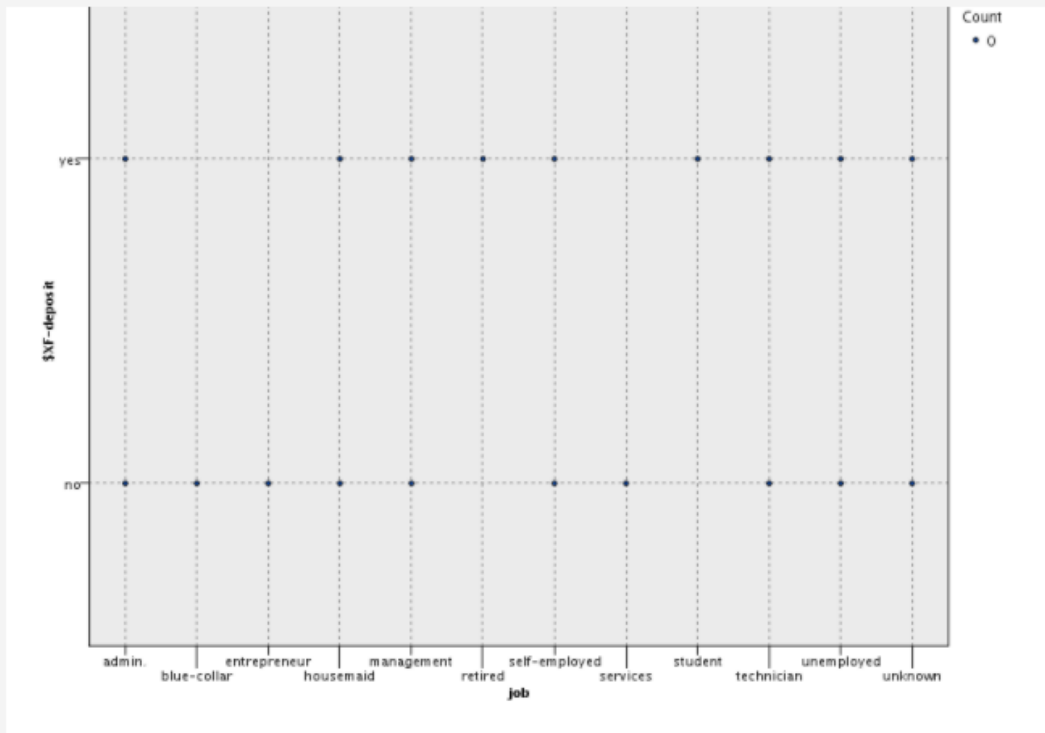
15	previous		Continuous	0	58	0.833	2.292	7.335	--	11162
16	poutcome		Categorical	--	--	--	--	--	4	11162
17	deposit		Categorical	--	--	--	--	--	2	11162

	Field	Measurement	Outliers	Extremes	Action	Impute Missing	Method	% Complete	Valid Records	Null Value	Empty String	White Space	
1	age	Continuous	132	0	None	Never	Fixed	100.000	11162	0	0	0	0
2	job	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
3	marital	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
4	education	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
5	default	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
6	balance	Continuous	99	74	None	Never	Fixed	100.000	11162	0	0	0	0

View Output: Data Audit of [17 fields]

6	balance	Continuous	99	74	None	Never	Fixed	100.000	11162	0	0	0	0
7	housing	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
8	loan	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
9	contact	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
10	day	Continuous	0	0	None	Never	Fixed	100.000	11162	0	0	0	0
11	month	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
12	duration	Continuous	179	22	None	Never	Fixed	100.000	11162	0	0	0	0
13	campaign	Continuous	136	74	None	Never	Fixed	100.000	11162	0	0	0	0
14	pdays	Continuous	149	27	None	Never	Fixed	100.000	11162	0	0	0	0
15	previous	Continuous	163	57	None	Never	Fixed	100.000	11162	0	0	0	0
16	poutcome	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0
17	deposit	Categorical	--	--	--	Never	Fixed	100.000	11162	0	0	0	0

View Output: job v. \$XF-deposit



View Model: deposit



Auto Classifier ①

Models

Auto Classifier - Models ①

TARGET : DEPOSIT

USE	MODEL NAME	ESTIMATOR ▼	BUILD TIME (MINS)	NO. FIELDS USED	ACCURACY	ACCUMULATED ACCURACY	AREA UNDER CURVE	ACCUMULATED AUC	RECALL	PRECISION	ACTIONS
✓	Random Trees 1	Random Trees	< 1	2	57.295	57.295	0.595	0.595	0.581	0.548	
✓	LSVM 1	Linear SVM	< 1	2	57.414	57.414	0.609	0.609	0.408	0.573	
✓	Tree-AS 1	CHAID	< 1	2	57.622	57.622	0.605	0.605	0.378	0.583	
✓	CHAID 1	CHAID	< 1	2	57.622	57.622	0.605	0.605	0.378	0.583	
✓	C5 1	C5.0	< 1	2	57.444	57.444	0.587	0.587	0.388	0.578	

▼

Steps

Use a code template to add a step

Data

Profile

Visualizations

age

Integer

job

String

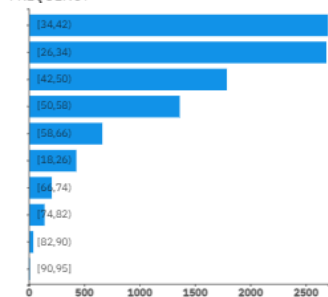
marital

String

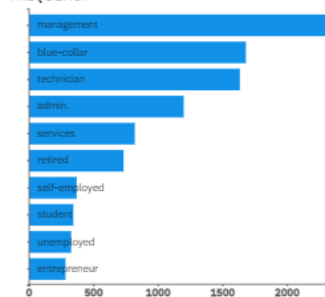
education

String

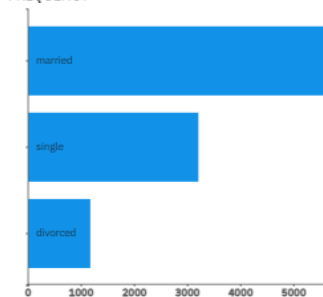
FREQUENCY



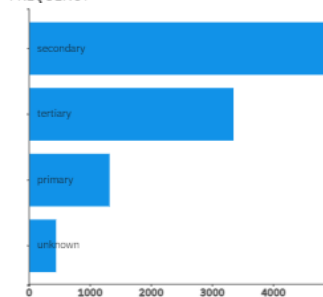
FREQUENCY



FREQUENCY



FREQUENCY



STATISTICS

Interquartile Range	17
Minimum	18
Maximum	95
Median	39

STATISTICS

Maximum length	13
Minimum length	6
Mean length	9.3258
Unique	12

STATISTICS

Maximum length	8
Minimum length	6
Mean length	6.7966
Unique	3

STATISTICS

Maximum length	9
Minimum length	7
Mean length	8.314
Unique	4

Steps  Use a code template to add a step

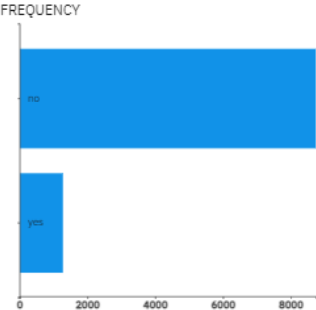
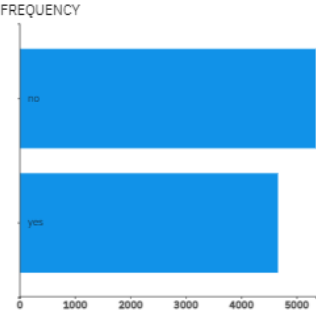
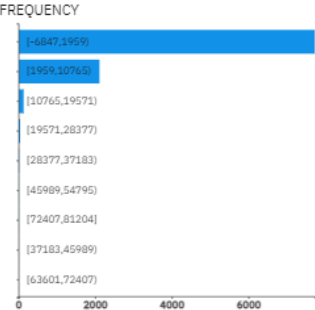
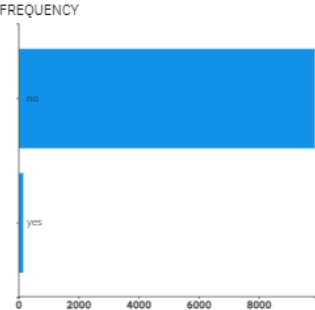
Data **Profile** Visualizations

default
String

balance
Integer

housing
String

loan
String



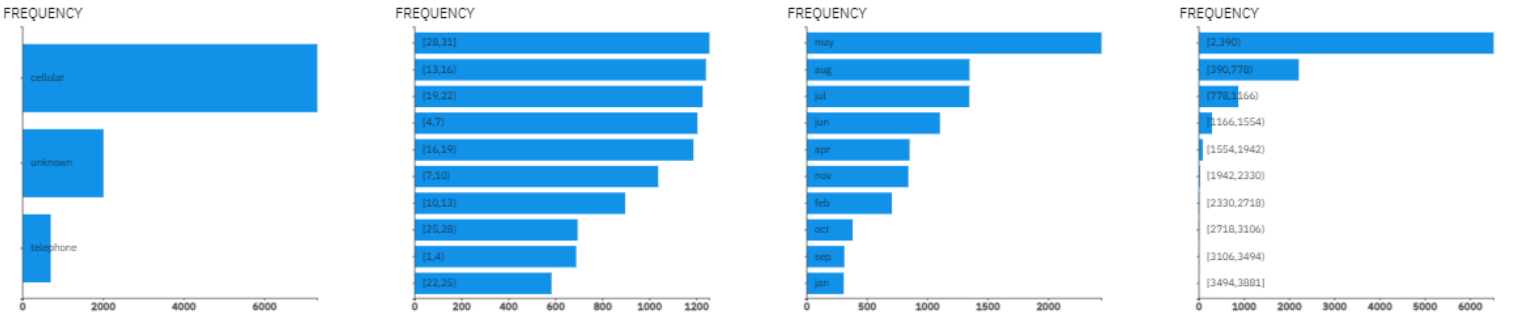
STATISTICS		STATISTICS	
Maximum length	3	Interquartile Range	1620
Minimum length	2	Minimum	-6847
Mean length	2.0146	Maximum	81204
Unique	2	Median	565

STATISTICS		STATISTICS	
Maximum length	3	Maximum length	3
Minimum length	2	Minimum length	2
Mean length	2.4657	Mean length	2.1267
Unique	2	Unique	2

Steps Use a code template to add a step

Data Profile Visualizations

contact day month duration
 String Integer String Integer



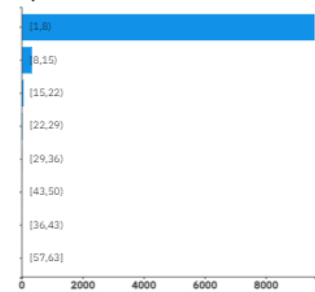
STATISTICS		STATISTICS		STATISTICS		STATISTICS	
Maximum length	9	Interquartile Range	14	Maximum length	3	Interquartile Range	381.25
Minimum length	7	Minimum	1	Minimum length	3	Minimum	2
Mean length	7.8692	Maximum	31	Mean length	3	Maximum	3881
Unique	3	Median	15	Unique	12	Median	267

Steps

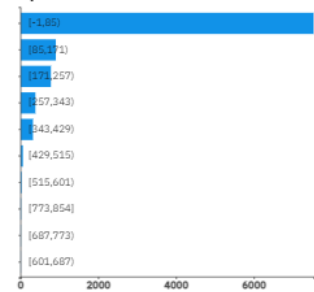
Use a code template to add a step

Data	Profile	Visualizations
campaign Integer	pdays Integer	previous Integer
		poutcome String

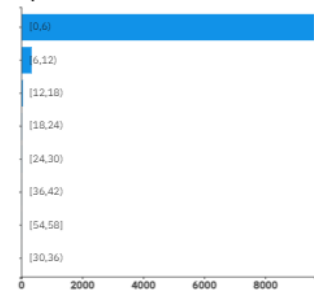
FREQUENCY



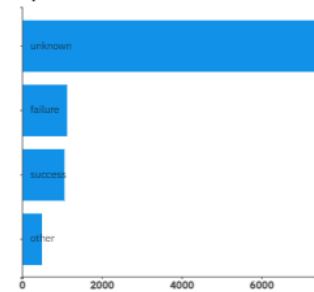
FREQUENCY



FREQUENCY



FREQUENCY



STATISTICS

Interquartile Range	2
Minimum	1
Maximum	63
Median	2
Standard Deviation	2.67789571309069

STATISTICS

Interquartile Range	82
Minimum	-1
Maximum	854
Median	-1
Standard Deviation	110.415410055703

STATISTICS

Interquartile Range	1
Minimum	0
Maximum	58
Median	0
Standard Deviation	2.31263109042486

STATISTICS

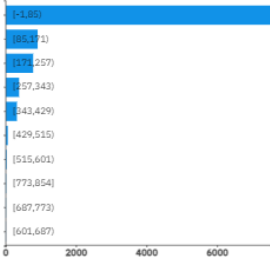
Maximum length	7
Minimum length	5
Mean length	6.9022
Unique	4

Steps Use a code template to add a step

Data Profile Visualizations

pdays
Integer

FREQUENCY

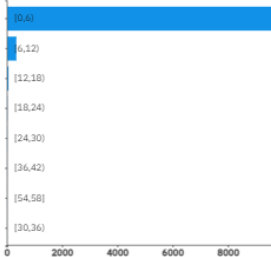


STATISTICS

2	Interquartile Range	82
1	Minimum	-1
63	Maximum	854
2	Median	-1
2.67799571209042	Standard Deviation	110.115410055703

previous
Integer

FREQUENCY

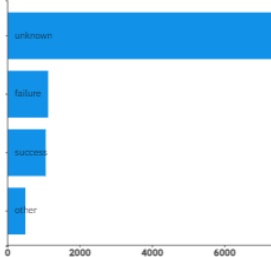


STATISTICS

1	Interquartile Range	58
0	Minimum	0
58	Maximum	58
0	Median	0
2.21263109042496	Standard Deviation	2.21263109042496

poutcome
String

FREQUENCY

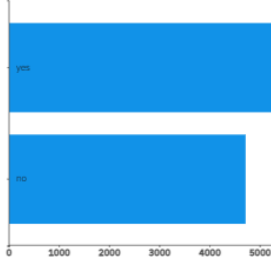


STATISTICS

7	Maximum length	7
5	Minimum length	5
6.9022	Mean length	6.9022
4	Unique	4

deposit
String

FREQUENCY



STATISTICS

3	Maximum length	3
2	Minimum length	2
2.5289	Mean length	2.5289
2	Unique	2

Steps

Use a code template to add a step

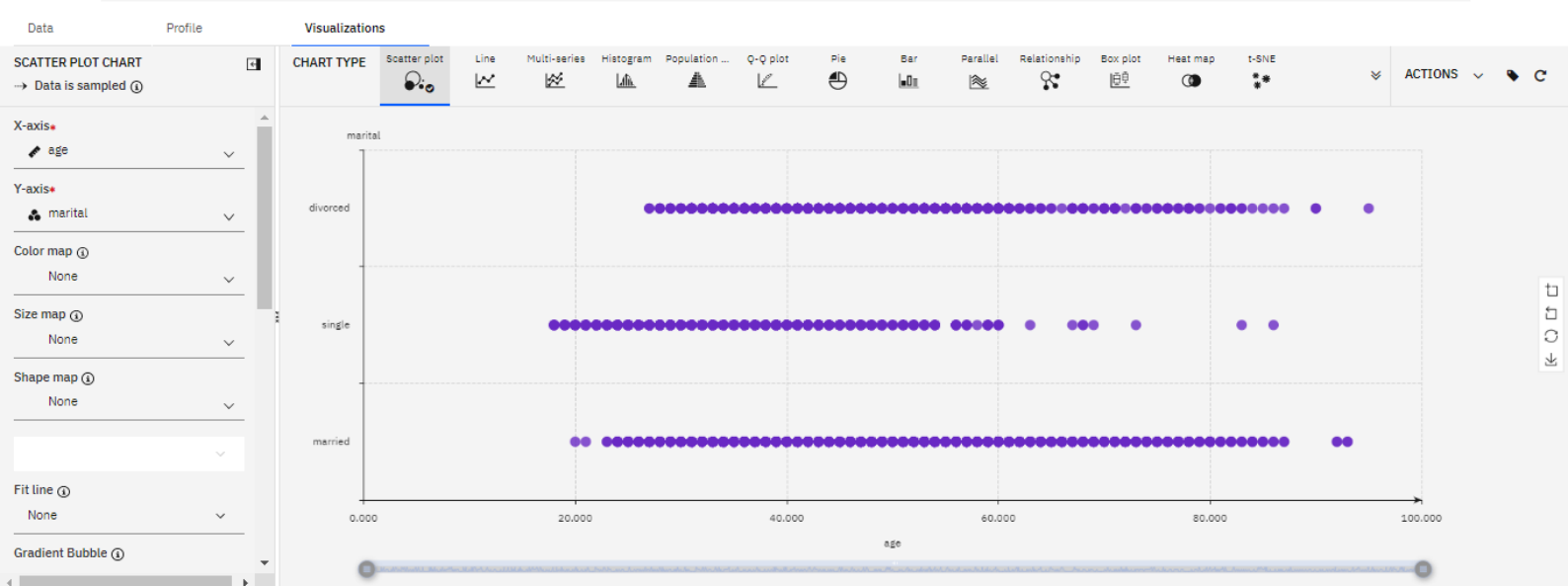


CHART TYPE

Scatter plot

Line

Multi-series

Histogram

Population ...

Q-Q plot

Pie

Bar

Parallel

Relationship

Box plot

Heat map

t-SNE

ACTIONS

marital

divorced

single

married

0.000

20.000

40.000

60.000

80.000

100.000

age