

DATA ANALYTICS

ASSIGNMENT – 3

Classification of term deposit buyers for retail banking

NAME : K.S.Sachin

Reg no : 19BEC0487

Campus : VIT Vellore

The screenshot displays the IBM Watson Studio interface. At the top, there are browser tabs for 'Vellore Institute of Technology', 'VL2021220501173_DA (1).pdf', 'Service Details - IBM Cloud', 'IBM Watson Studio', and 'Student Dashboard'. The address bar shows a URL from 'eu-gb.dataplatform.cloud.ibm.com'. The IBM Watson Studio header includes a search bar, a 'Buy' button, and a user profile for 'Sachin K S's Account'. The main content area is titled 'My projects / Classification of Term Deposition / bank.csv'. It features a 'Preview' tab and a table of data. The table has 13 columns: age, job, marital, education, default, balance, housing, loan, contact, day, month, duration, and campaign. The data is previewed for 13 rows. A 'Refine' button is visible on the right. The bottom of the image shows a Windows taskbar with the search bar, task view button, and several application icons. The system tray shows the date and time as '14:10:04 24-04-2022'.

Schema: 17 Columns
The preview includes only a limited set of columns and rows. ①

Last refresh: 1 minute 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
59	admin.	married	secondary	no	2343	yes	no	unknown	5	may	1042	1
56	admin.	married	secondary	no	45	no	no	unknown	5	may	1467	1
41	technician	married	secondary	no	1270	yes	no	unknown	5	may	1389	1
55	services	married	secondary	no	2476	yes	no	unknown	5	may	579	1
54	admin.	married	tertiary	no	184	no	no	unknown	5	may	673	2
42	management	single	tertiary	no	0	yes	yes	unknown	5	may	562	2
56	management	married	tertiary	no	830	yes	yes	unknown	6	may	1201	1
60	retired	divorced	secondary	no	545	yes	no	unknown	6	may	1030	1
37	technician	married	secondary	no	1	yes	no	unknown	6	may	608	1
28	services	single	secondary	no	5090	yes	no	unknown	6	may	1297	3

IBM Watson Studio

Projects / Classification of Term Deposition / bank.csv / Refine data

Steps (1)

Data Source: bank.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

Use a code template to add a step

Data Profile Visualizations

age Integer job String marital String

FREQUENCY

age

job

marital

STATISTICS

Statistic	age	job	marital
Interquartile Range	17	13	8
Maximum length	18	6	6
Minimum			

IBM Watson Studio

Projects / Classification of Term Deposition / bank.csv_flow

Steps 1

Use a code template to add a step

Data Profile Visualizations

secondary tertiary primary unknown

no yes

frequency

STATISTICS

Statistic	secondary	tertiary	primary	unknown
Maximum length	9	7	8.314	4
Minimum length				
Mean length				
Unique				

STATISTICS

Statistic	no	yes
Maximum length	3	2
Minimum length		
Mean length		
Unique		

STATISTICS

Statistic	frequency
Interquartile Range	1620
Maximum	-6847
Minimum	81204
Median	565
Standard Deviation	3179.43009362707

Information

Details Help

Edit

LOCATION

Classification of Term Deposition

DATA REFINERY FLOW NAME

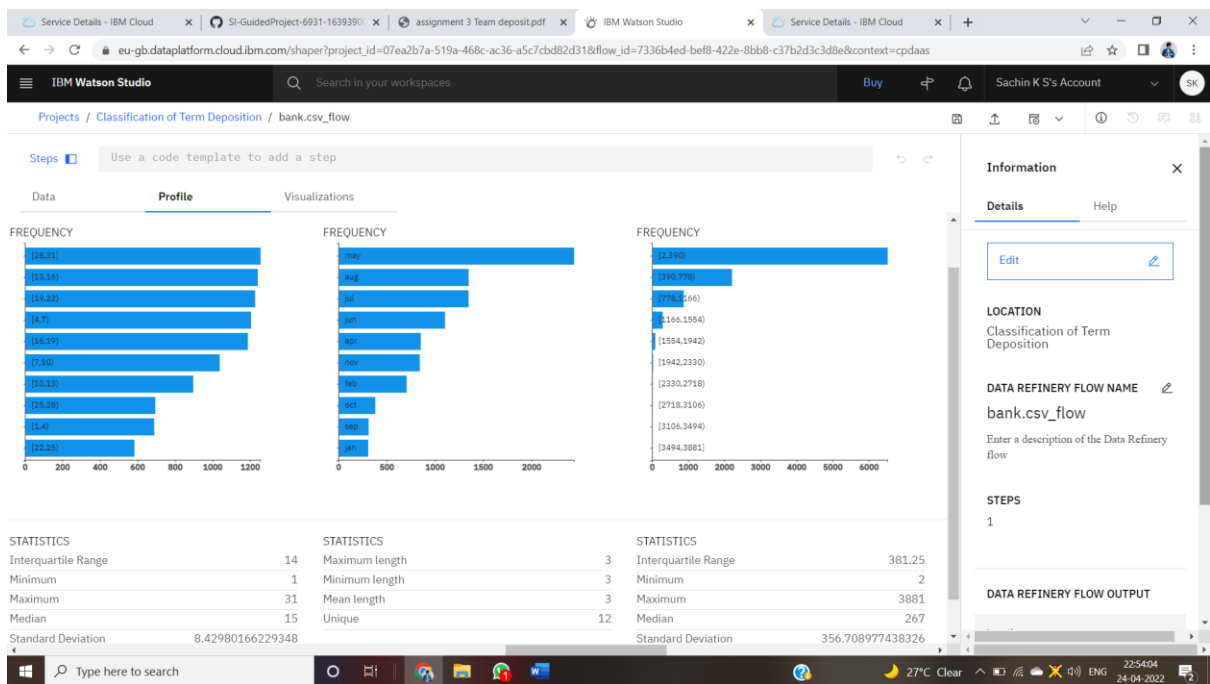
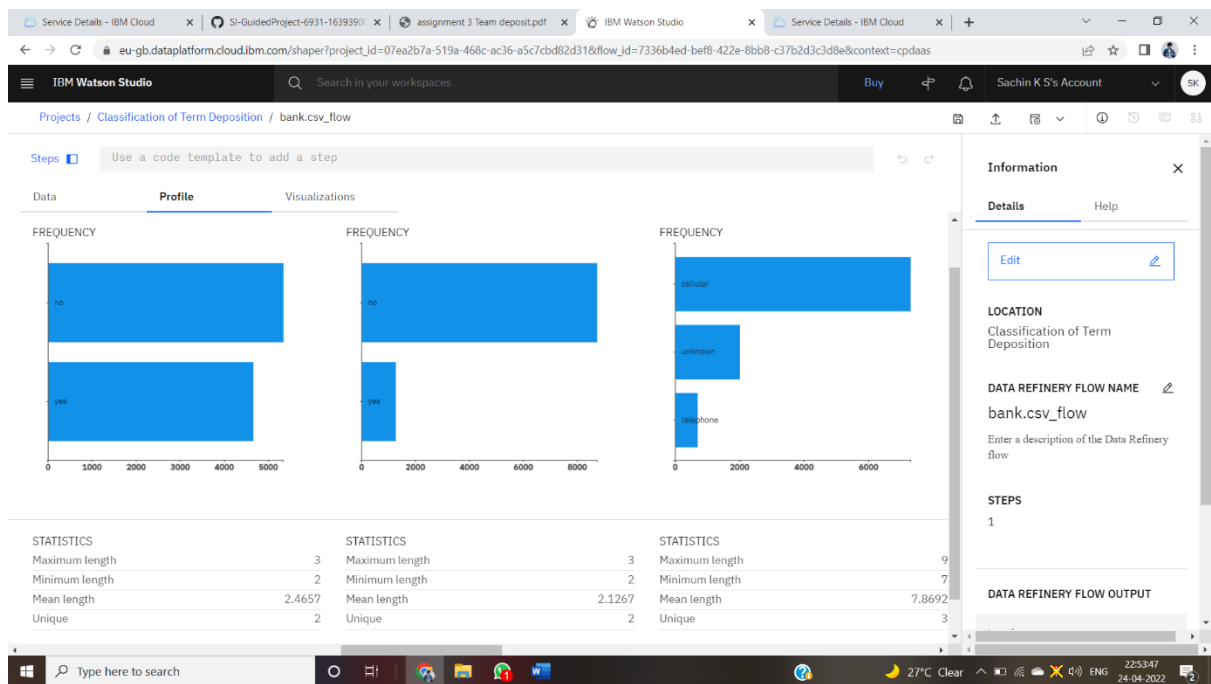
bank.csv_flow

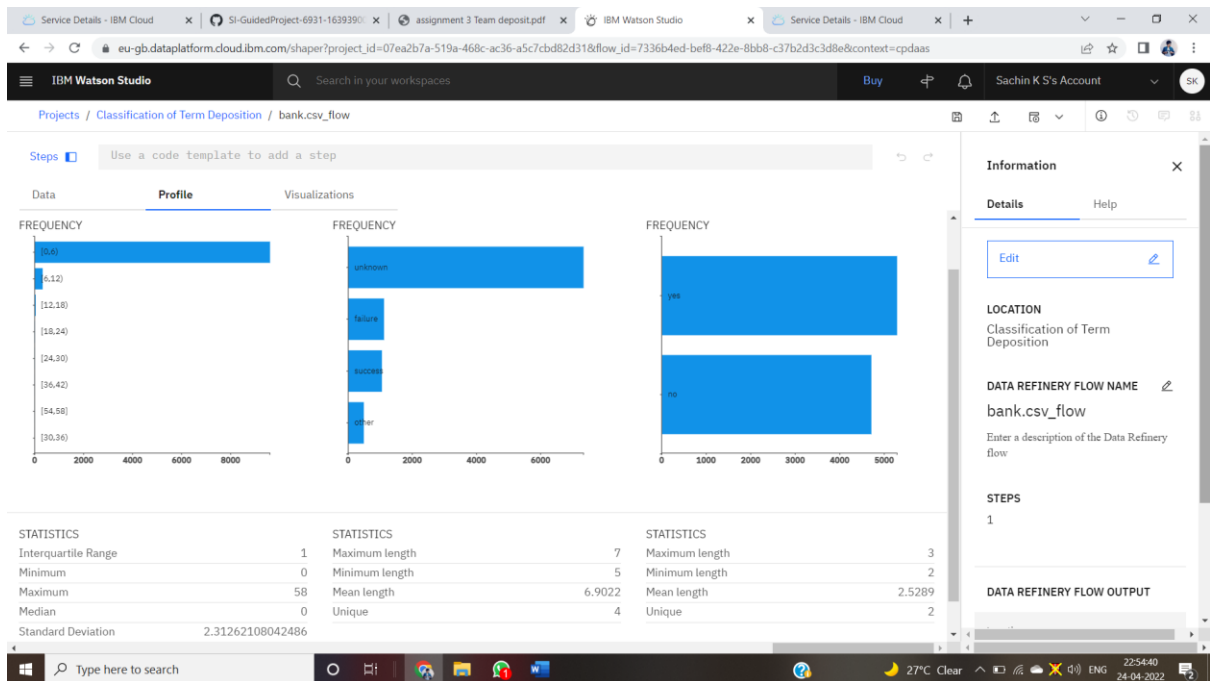
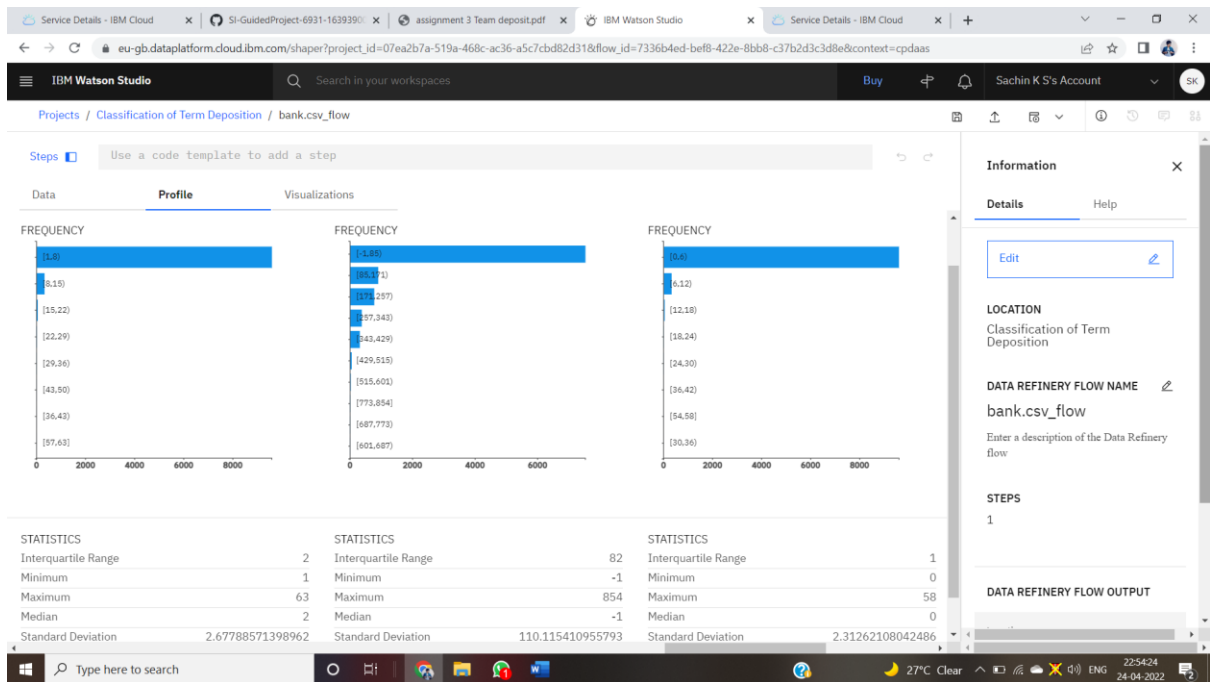
Enter a description of the Data Refinery flow

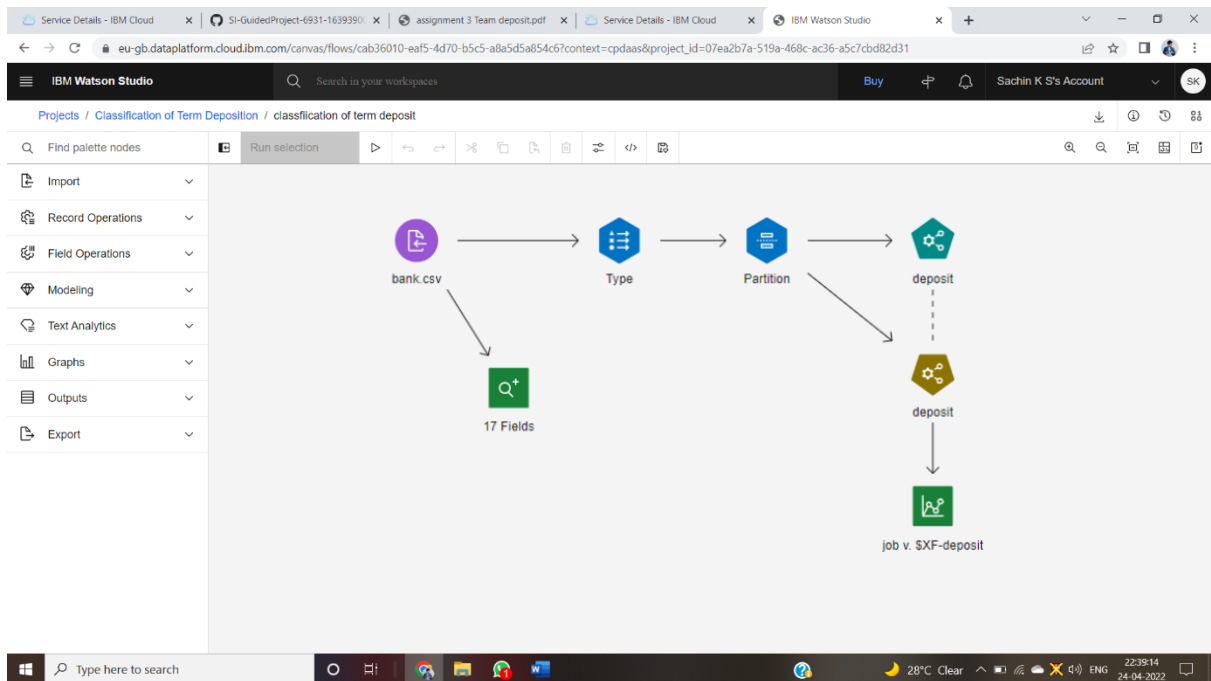
STEPS

1

DATA REFINERY FLOW OUTPUT







Vellore Institute of Technology x VL2021220501173_DA (1).pdf x Service Details - IBM Cloud x IBM Watson Studio x Student Dashboard x

eu-gb.dataplatform.cloud.ibm.com/canvas/flows/cab36010-eaf5-4d70-b5c5-a8a5d5a854c6?context=cddaas&projectGuid=07ea2b7a-519a-468c-ac36-a5c7cbd82d31&env_id=mods-07ea2b7a-51...

IBM Watson Studio Search in your workspaces Buy Sachin K S's Account SK

Projects / Classification of Term Deposition / classification of term deposit

View Output: Data Audit of [17 fields] Compare x

	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

Type here to search 38°C Mostly sunny 16:27:39 24-04-2022

View Output: Data Audit of [17 fields]

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

Type

Read Values Clear All Values

Find in column Field

	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 ⓘ

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 ⓘ

Type



Find in column Field

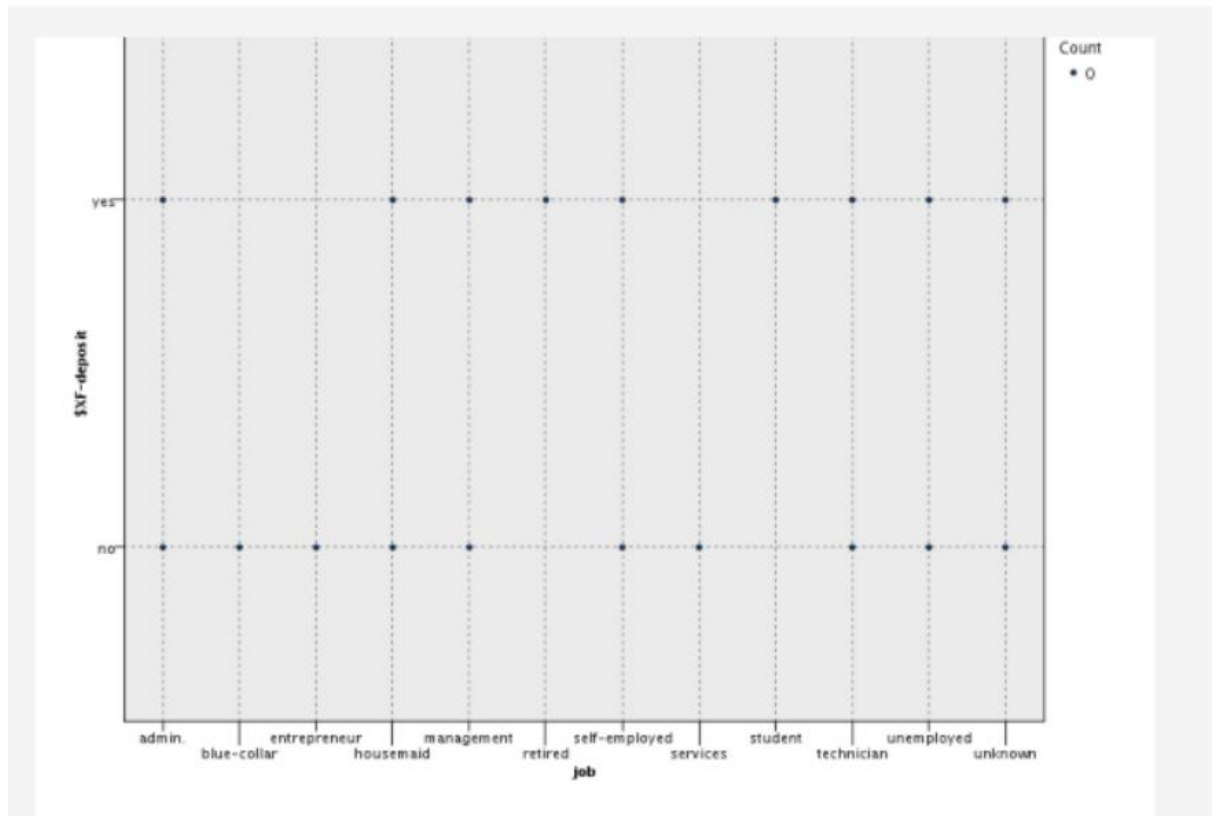
<input type="checkbox"/>	Field	Measure	Role	Value mode	Values	Check
<input type="checkbox"/>	# day	Continuous	None	Instantiated	1, 31	None
<input type="checkbox"/>	abc month	Nominal	None	Instantiated	apr, aug, dec, feb, ...	None
<input type="checkbox"/>	# duration	Continuous	None	Instantiated	2, 3881	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

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
<input checked="" type="checkbox"/>	Random Trees.1	Random Trees	< 1	2	57.295	57.295	0.595	0.595	0.581	0.548	
<input checked="" type="checkbox"/>	LSVM.1	Linear SVM	< 1	2	57.414	57.414	0.609	0.609	0.408	0.573	
<input checked="" type="checkbox"/>	Tree-AS.1	CHAID	< 1	2	57.622	57.622	0.605	0.605	0.378	0.583	
<input checked="" type="checkbox"/>	CHAID.1	CHAID	< 1	2	57.622	57.622	0.605	0.605	0.378	0.583	
<input checked="" type="checkbox"/>	C5.1	C5.0	< 1	2	57.444	57.444	0.587	0.587	0.388	0.578	