

Santander Product Recommendation

Data Description

In this competition, you are provided with 1.5 years of customers behavior data from Santander bank to predict what new products customers will purchase. The data starts at 2015-01-28 and has monthly records of products a customer has, such as "credit card", "savings account", etc. You will predict what **additional** products a customer will get in the last month, 2016-06-28, in addition to what they already have at 2016-05-28. These products are the columns named: ind_(xyz)_ult1, which are the columns #25 - #48 in the training data. You will predict what a customer will buy **in addition to what they already had at 2016-05-28**.

The test and train sets are split by time, and public and private leaderboard sets are split randomly.

Please note: This sample does not include any real Santander Spain customers, and thus it is not representative of Spain's customer base.

File descriptions

- **train.csv** - the training set
- **test.csv** - the test set
- **sample_submission.csv** - a sample submission file in the correct format

Data fields

Column Name	Description
fecha_dato	The table is partitioned for this column
ncodpers	Customer code
ind_empleado	Employee index: A active, B ex employed, F filial, N not employee, P pasive
pais_residencia	Customer's Country residence
sexo	Customer's sex
age	Age
fecha_alta	The date in which the customer became as the first holder of a contract in the bank
ind_nuevo	New customer Index. 1 if the customer registered in the last 6 months.
antiguedad	Customer seniority (in months)
indrel	1 (First/Primary), 99 (Primary customer during the month but not at the end of the month)
ult_fec_cli_1t	Last date as primary customer (if he isn't at the end of the month)
indrel_1mes	Customer type at the beginning of the month ,1 (First/Primary customer), 2 (co-owner),P (Potential),3 (former primary), 4(former co-owner)
tiprel_1mes	Customer relation type at the beginning of the month, A (active), I (inactive), P (former customer),R (Potential)
indresi	Residence index (S (Yes) or N (No) if the residence country is the same than the bank country)
indext	Foreigner index (S (Yes) or N (No) if the customer's birth country is different than the bank country)
conyuemp	Spouse index. 1 if the customer is spouse of an employee

Column Name	Description
canal_entrada	channel used by the customer to join
indfall	Deceased index. N/S
tipodom	Addres type. 1, primary address
cod_prov	Province code (customer's address)
nomprov	Province name
ind_actividad_cliente	Activity index (1, active customer; 0, inactive customer)
renta	Gross income of the household
segmento	segmentation: 01 - VIP, 02 - Individuals 03 - college graduated
ind_ahor_fin_ult1	Saving Account
ind_aval_fin_ult1	Guarantees
ind_cco_fin_ult1	Current Accounts
ind_cder_fin_ult1	Derivada Account
ind_cno_fin_ult1	Payroll Account
ind_ctju_fin_ult1	Junior Account
ind_ctma_fin_ult1	Más particular Account
ind_ctop_fin_ult1	particular Account
ind_ctpp_fin_ult1	particular Plus Account
ind_deco_fin_ult1	Short-term deposits
ind_deme_fin_ult1	Medium-term deposits
ind_dela_fin_ult1	Long-term deposits
ind_ecue_fin_ult1	e-account
ind_fond_fin_ult1	Funds
ind_hip_fin_ult1	Mortgage
ind_plan_fin_ult1	Pensions
ind_pres_fin_ult1	Loans
ind_reca_fin_ult1	Taxes
ind_tjcr_fin_ult1	Credit Card
ind_valo_fin_ult1	Securities
ind_viv_fin_ult1	Home Account
ind_nomina_ult1	Payroll
ind_nom_pens_ult1	Pensions
ind_recibo_ult1	Direct Debit

Data (237 MB)

API

kaggle competitions download -c santander-product-recommendation

<https://github.com/Kaggle/kaggle-api>

Kaggle API installation and documentation

API `kaggle competitions download -c santander-product-recommendation`

kaggle competitions download -c santander-product-recommendation

<https://github.com/Kaggle/kaggle-api>

Kaggle API installation and documentation

[Download All](#)

Data Sources

sample_submission.csv

sample_submission.csv

930k x 2

930k rows x 2 columns

test_ver2.csv

test_ver2.csv

930k x 24

train_ver2.csv

train_ver2.csv

About this file

No description yet

Columns

Date

fecha_dato

Numeric

ncodpers

String

ind_empleado

String

pais_residencia

String

sexo

Numeric

age

Date

fecha_alta

Numeric

ind_nuevo

Numeric

antiguedad

Numeric

indrel

String

ult_fec_cli_1t

Numeric

indrel_1mes

String

tiprel_1mes

String

indresi

String

indext

String

conyuemp

String

canal_entrada

String

indfall

Numeric

tipodom

Numeric

cod_prov

String

nomprov

Numeric

ind_actividad_cliente

String

renta

...

Views

	Date fecha_dato fecha_dato	Numeric ncodpers ncodpers	String ind_empleado ind_empleado	String pais_residencia pais_residencia	String sexo sexo	Numeric age age																																																																																																																				
			N 100% N B 0% B Other (3) 0%	ES 100% ES FR 0% FR Other (116) 0%	V 54% V H 46% H																																																																																																																					
		<table><tr><th>Range</th><th>Count</th></tr><tr><td>-Infinity - 46645.00</td><td>14,591</td></tr><tr><td>46645.00 - 77401.00</td><td>15,249</td></tr><tr><td>77401.00 - 108157.00</td><td>16,087</td></tr><tr><td>108157.00 - 138913.00</td><td>16,347</td></tr><tr><td>138913.00 - 169669.00</td><td>15,233</td></tr><tr><td>169669.00 - 200425.00</td><td>14,858</td></tr><tr><td>200425.00 - 231181.00</td><td>14,527</td></tr><tr><td>231181.00 - 261937.00</td><td>14,801</td></tr><tr><td>261937.00 - 292693.00</td><td>14,848</td></tr><tr><td>292693.00 - 323449.00</td><td>14,787</td></tr><tr><td>323449.00 - 354205.00</td><td>14,543</td></tr><tr><td>354205.00 - 384961.00</td><td>14,851</td></tr><tr><td>384961.00 - 415717.00</td><td>15,457</td></tr><tr><td>415717.00 - 446473.00</td><td>15,978</td></tr><tr><td>446473.00 - 477229.00</td><td>16,936</td></tr><tr><td>477229.00 - 507985.00</td><td>15,622</td></tr><tr><td>507985.00 - 538741.00</td><td>14,835</td></tr><tr><td>538741.00 - 569497.00</td><td>10,887</td></tr><tr><td>569497.00 - 600253.00</td><td>13,566</td></tr><tr><td>600253.00 - 631009.00</td><td>13,664</td></tr><tr><td>631009.00 - 661765.00</td><td>14,374</td></tr><tr><td>661765.00 - 692521.00</td><td>13,444</td></tr><tr><td>692521.00 - 723277.00</td><td>13,213</td></tr><tr><td>723277.00 - 754033.00</td><td>13,498</td></tr><tr><td>754033.00 - 784789.00</td><td>11,737</td></tr><tr><td>784789.00 - 815545.00</td><td>12,742</td></tr><tr><td>815545.00 - 846301.00</td><td>12,725</td></tr><tr><td>846301.00 - 877057.00</td><td>13,234</td></tr><tr><td>877057.00 - 907813.00</td><td>17,054</td></tr><tr><td>907813.00 - 938569.00</td><td>21,993</td></tr><tr><td>938569.00 - 969325.00</td><td>25,429</td></tr><tr><td>969325.00 - 1000081.00</td><td>25,412</td></tr><tr><td>1000081.00 - 1030837.00</td><td>20,984</td></tr><tr><td>1030837.00 - 1061593.00</td><td>24,441</td></tr><tr><td>1061593.00 - 1092349.00</td><td>26,141</td></tr><tr><td>1092349.00 - 1123105.00</td><td>24,431</td></tr><tr><td>1123105.00 - 1153861.00</td><td>20,415</td></tr><tr><td>1153861.00 - 1184617.00</td><td>25,589</td></tr></table>	Range	Count	-Infinity - 46645.00	14,591	46645.00 - 77401.00	15,249	77401.00 - 108157.00	16,087	108157.00 - 138913.00	16,347	138913.00 - 169669.00	15,233	169669.00 - 200425.00	14,858	200425.00 - 231181.00	14,527	231181.00 - 261937.00	14,801	261937.00 - 292693.00	14,848	292693.00 - 323449.00	14,787	323449.00 - 354205.00	14,543	354205.00 - 384961.00	14,851	384961.00 - 415717.00	15,457	415717.00 - 446473.00	15,978	446473.00 - 477229.00	16,936	477229.00 - 507985.00	15,622	507985.00 - 538741.00	14,835	538741.00 - 569497.00	10,887	569497.00 - 600253.00	13,566	600253.00 - 631009.00	13,664	631009.00 - 661765.00	14,374	661765.00 - 692521.00	13,444	692521.00 - 723277.00	13,213	723277.00 - 754033.00	13,498	754033.00 - 784789.00	11,737	784789.00 - 815545.00	12,742	815545.00 - 846301.00	12,725	846301.00 - 877057.00	13,234	877057.00 - 907813.00	17,054	907813.00 - 938569.00	21,993	938569.00 - 969325.00	25,429	969325.00 - 1000081.00	25,412	1000081.00 - 1030837.00	20,984	1030837.00 - 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		1215373.00 - 1246129.00		23,882				
		1246129.00 - 1276885.00		20,719				
		1276885.00 - 1307641.00		24,381				
		1307641.00 - 1338397.00		26,877				
		1338397.00 - 1369153.00		26,075				
		1369153.00 - 1399909.00		21,250				
		1399909.00 - 1430665.00		24,200				
		1430665.00 - 1461421.00		25,623				
		1461421.00 - 1492177.00		27,353				
		1492177.00 - 1522933.00		25,694				
		1522933.00 - Infinity		21,691				
		15.9k						
		1.55m						
1	2016-06-28	15889		F	ES	V	56	
2	2016-06-28	1170544		N	ES	H	36	
3	2016-06-28	1170545		N	ES	V	22	
4	2016-06-28	1170547		N	ES	H	22	
5	2016-06-28	1170548		N	ES	H	22	
6	2016-06-28	1170550		N	ES	V	22	
7	2016-06-28	1170552		N	ES	H	51	
8	2016-06-28	1170553		N	ES	H	22	
9	2016-06-28	1170555		N	ES	V	22	
10	2016-06-28	1170557		N	ES	H	22	
11	2016-06-28	1170559		N	ES	H	22	
12	2016-06-28	1170563		N	ES	H	22	
13	2016-06-28	1170542		N	ES	H	22	
14	2016-06-28	1170565		N	ES	H	22	
15	2016-06-28	1170568		N	ES	H	22	
16	2016-06-28	1170570		N	ES	H	22	
17	2016-06-28	1170576		N	ES	V	22	
18	2016-06-28	1170578		N	ES	V	41	
19	2016-06-28	1170579		N	ES	H	36	
20	2016-06-28	1170581		N	ES	H	22	

22	2016-06-28	1170585	N	ES	V	22
23	2016-06-28	1170587	N	ES	H	33
24	2016-06-28	1170588	N	ES	H	41
25	2016-06-28	1170589	N	ES	H	22
26	2016-06-28	1170567	N	ES	V	23
27	2016-06-28	1170541	N	ES	V	43
28	2016-06-28	1170539	N	ES	H	22
29	2016-06-28	1170538	N	ES	H	22
30	2016-06-28	1170493	N	ES	V	22
31	2016-06-28	1170495	N	ES	H	22
32	2016-06-28	1170497	N	ES	V	22
33	2016-06-28	1170499	N	ES	H	63
34	2016-06-28	1170500	N	ES	H	62
35	2016-06-28	1170501	N	ES	V	32
36	2016-06-28	1170502	N	ES	H	22
37	2016-06-28	1170504	N	ES	H	22
38	2016-06-28	1170506	N	ES	H	22
39	2016-06-28	1170507	N	ES	H	22
40	2016-06-28	1170509	N	ES	V	58
41	2016-06-28	1170510	N	ES	H	22
42	2016-06-28	1170512	N	ES	H	23
43	2016-06-28	1170513	N	ES	H	22
44	2016-06-28	1170515	N	ES	V	22
45	2016-06-28	1170516	N	ES	H	22
46	2016-06-28	1170518	N	ES	H	22
47	2016-06-28	1170520	N	ES	V	22
48	2016-06-28	1170522	N	ES	H	22
49	2016-06-28	1170524	N	ES	H	22
50	2016-06-28	1170526	N	ES	H	22
51	2016-06-28	1170528	N	ES	H	22

52	2016-06-28	1170533	N	ES	V	71
53	2016-06-28	1170535	N	ES	H	22
54	2016-06-28	1170537	N	ES	V	31
55	2016-06-28	1170591	N	ES	H	30
56	2016-06-28	1170491	N	ES	V	22
57	2016-06-28	1170592	N	ES	V	59
58	2016-06-28	1170596	N	ES	V	45
59	2016-06-28	1170632	N	ES	V	32
60	2016-06-28	1170633	N	ES	H	22
61	2016-06-28	1170635	N	ES	H	22
62	2016-06-28	1170637	N	ES	H	22
63	2016-06-28	1170639	N	ES	H	22
64	2016-06-28	1170641	N	ES	V	22
65	2016-06-28	1170643	N	ES	V	22
66	2016-06-28	1170645	N	ES	H	22
67	2016-06-28	1170647	N	ES	V	22
68	2016-06-28	1170649	N	ES	H	22
69	2016-06-28	1170651	N	ES	V	22
70	2016-06-28	1170631	N	ES	V	37
71	2016-06-28	1170653	N	ES	V	22
72	2016-06-28	1170657	N	ES	V	22
73	2016-06-28	1170659	N	ES	H	22
74	2016-06-28	1170661	N	ES	V	22
75	2016-06-28	1170663	N	ES	V	39
76	2016-06-28	1170665	N	ES	H	22
77	2016-06-28	1170667	N	ES	H	22
78	2016-06-28	1170669	N	ES	H	22
79	2016-06-28	1170671	N	ES	H	38
80	2016-06-28	1170673	N	ES	H	22
81	2016-06-28	1170675	N	ES	V	22

82	2016-06-28	1170676	N	ES	V	22
83	2016-06-28	1170655	N	ES	H	22
84	2016-06-28	1170630	N	ES	H	34
85	2016-06-28	1170628	N	ES	V	35
86	2016-06-28	1170627	N	ES	H	31
87	2016-06-28	1170597	N	ES	V	42
88	2016-06-28	1170598	N	ES	H	29
89	2016-06-28	1170599	N	ES	H	88
90	2016-06-28	1170601	N	ES	V	30
91	2016-06-28	1170602	N	ES	H	51
92	2016-06-28	1170603	N	ES	H	64
93	2016-06-28	1170604	N	ES	H	36
94	2016-06-28	1170605	N	ES	H	48
95	2016-06-28	1170606	N	ES	H	41
96	2016-06-28	1170607	N	ES	V	41
97	2016-06-28	1170608	N	ES	V	22
98	2016-06-28	1170609	N	ES	H	22
99	2016-06-28	1170610	N	ES	V	23
100	2016-06-28	1170611	N	ES	H	33