DS-SF-34 Final Project 1

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Lightning Pitch
by Sarah Kay

1. Predict Customer Upgrades - Logistic Regression

Problem: Identify customers that are ready to upgrade their Zendesk Support plan to assist sales and marketing efforts and increase revenue

Data: Product usage data, customer service interactions, account information

Hypothesis: Customers that upgrade share similar behavior patterns that can help us recognize others customers like them

Zendesk Prices and Sample Data:

Essential	Team	Professional*	Enterprise	Elite
from...	from...	from...	from...	from...
$5 per agent per month	$19 per agent per month	$49 per agent per month	$99 per agent per month	$199 per agent per month

id	year_won	month_won	upgraded_b	months_to_	pre_upgrade	post_upgrad	upgrade_lev	num_agents	mrr_pre_up	mrr_post_up	mrr_delta	num_trig	num_autom	num_tags	num_macros	num_groups	num_orgs	num_fields
312069	2016	4	1	6	Team	Professional	1	4	76	76	0	13	6	2656	4	6	1	3
509860	2015	11	1	2	Plus	Enterprise	1	4	236	1250	1014	10	1	293	4	2	3	0
685702	2015	12	1	3	Professional	Enterprise	1	5	295	1500	1205	7	2	19	4	2	9	0
717545	2015	11	1	2	Starter	Team	1	2	4	50	46	7	2	3	4	1	1	0
732873	2016	1	1	4	Professional	Enterprise	1	20	375	2673	2298	7	1	5	4	3	4	4
739326	2015	11	1	2	Essential	Team	1	1	10	38	28	3	3	4	4	1	1	0
746604	2015	11	1	4	Essential	Team	1	3	28	28	0	8	3	12	12	1	2	2
751289	2016	2	1	4	Essential	Team	1	1	9	25	16	7	1	2	4	1	1	0
754124	2015	11	1	6	Professional	Enterprise	1	25	1225	2970	1745	12	8	995	7	16	12	3
758088	2015	11	1	4	Team	Professional	1	5	125	295	170	7	1	2	5	3	1	0
758345	2015	11	1	4	Essential	Team	1	1	12.6	26.59	14	5	1	91	17	1	1	0
763572	2015	12	1	3	Essential	Team	1	4	21.74	82.62	61	5	1	46	4	4	5	3
772085	2015	11	1	5	Plus	Enterprise	1	4	28	500	472	6	1	1	4	1	1	2
772983	2015	11	1	4	Team	Professional	1	1	19	49	30	7	3	3	4	1	1	0
776698	2015	11	1	2	Starter	Team	1	1	2	25	23	7	1	2	4	1	1	1
780268	2015	2	1	2	Essential	Team	1	1	9	42	33	6	1	2	4	1	1	0
787154	2015	11	1	4	Regular	Professional	1	4	100	490	390	2	1	0	31	2	1	0
796904	2015	11	1	5	Starter	Team	1	3	3	19	16	7	1	3	4	1	1	0
799669	2015	12	1	3	Essential	Team	1	1	5	19	14	5	1	2	4	1	1	0
803849	2015	11	1	2	Starter	Team	1	1	1	19	18	7	1	2	4	1	1	0
803873	2016	3	1	2	Team	Professional	1	10	275	590	315	11	2	5	4	6	3	4
809645	2016	1	1	4	Essential	Team	1	2	14.61	43.83	29	6	1	6	4	1	1	0
814959	2016	1	1	2	Team	Professional	1	1	19	49	30	5	1	2	6	1	2	0
816785	2015	11	1	3	Essential	Team	1	2	10	38	28	5	1	6	25	1	1	0
819223	2015	12	1	6	Professional	Enterprise	1	11	1003	308	-695	7	1	15	4	10	15	0
820194	2015	11	1	3	Professional	Enterprise	1	2	118	2970	2852	8	1	6	64	9	1	4
821376	2016	3	1	6	Team	Professional	1	16	402.69	741.8	339	4	1	4514	42	7	1	2
822197	2016	2	1	4	Essential	Team	1	4	50.22	139.51	89	6	1	8	4	1	1	0
823287	2015	11	1	4	Starter	Team	1	1	1.09	20.66	20	7	2	36	4	1	1	0

Identify data driven patterns and causes of urgency for all upsell & x-sell.

Advanced

More X-sell & Upsell

Basic

Enterprise

Professional

Build a <u>customer journey</u> that ensures we send the right message to the right account at the right time.
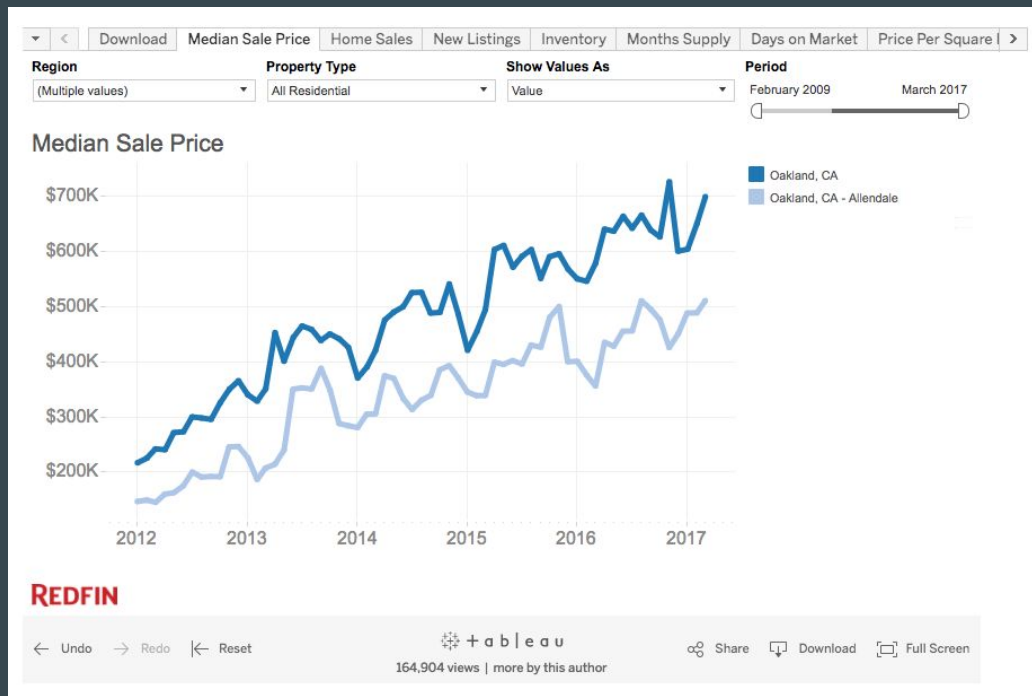
2. Predict Future Home Values - Linear Regression

Problem: How much will my house in Allendale, Oakland CA be worth in 15 years? Can I sell it and retire at age 50?!?!?

Data: Redfin Home Price, Sales & Inventory: https://www.redfin.com/blog/data-center

Hypothesis: Bay Area home prices will continue to rise and my house will be worth more in 15 years than it is now

Redfin Housing Data

Will housing prices continue to climb?

3.   Human Resources Analytics

The Problem: Why are our best and most experienced employees leaving prematurely?

The Data: A Kaggle Data Set: https://www.kaggle.com/ludobenistant/hr-analytics

Hypothesis: Lack of raises, promotions, and responsibility will lead to higher turnover rates across all departments

Kaggle Dataset:

	A	B	C	D	E	F	G	H	I	J
1	satisfaction_	last_evaluati	number_pro	average_mo	time_spend_	Work_accide	left	promotion_l	sales	salary
2	0.38	0.53	2	157	3	0	1	0	sales	low
3	0.8	0.86	5	262	6	0	1	0	sales	medium
4	0.11	0.88	7	272	4	0	1	0	sales	medium
5	0.72	0.87	5	223	5	0	1	0	sales	low
6	0.37	0.52	2	159	3	0	1	0	sales	low
7	0.41	0.5	2	153	3	0	1	0	sales	low
8	0.1	0.77	6	247	4	0	1	0	sales	low
9	0.92	0.85	5	259	5	0	1	0	sales	low
10	0.89	1	5	224	5	0	1	0	sales	low
11	0.42	0.53	2	142	3	0	1	0	sales	low
12	0.45	0.54	2	135	3	0	1	0	sales	low
13	0.11	0.81	6	305	4	0	1	0	sales	low
14	0.84	0.92	4	234	5	0	1	0	sales	low
15	0.41	0.55	2	148	3	0	1	0	sales	low
16	0.36	0.56	2	137	3	0	1	0	sales	low
17	0.38	0.54	2	143	3	0	1	0	sales	low
18	0.45	0.47	2	160	3	0	1	0	sales	low
19	0.78	0.99	4	255	6	0	1	0	sales	low
20	0.45	0.51	2	160	3	1	1	1	sales	low
21	0.76	0.89	5	262	5	0	1	0	sales	low
22	0.11	0.83	6	282	4	0	1	0	sales	low
23	0.38	0.55	2	147	3	0	1	0	sales	low
24	0.09	0.95	6	304	4	0	1	0	sales	low
25	0.46	0.57	2	139	3	0	1	0	sales	low
26	0.4	0.53	2	158	3	0	1	0	sales	low
27	0.89	0.92	5	242	5	0	1	0	sales	low