



TEAM 62

How might we provide visually intuitive, personalized financial recommendations based on transaction history to users who are not data savvy?



MANU
MBA

ANANYA
CS



YIQI
DESIGN

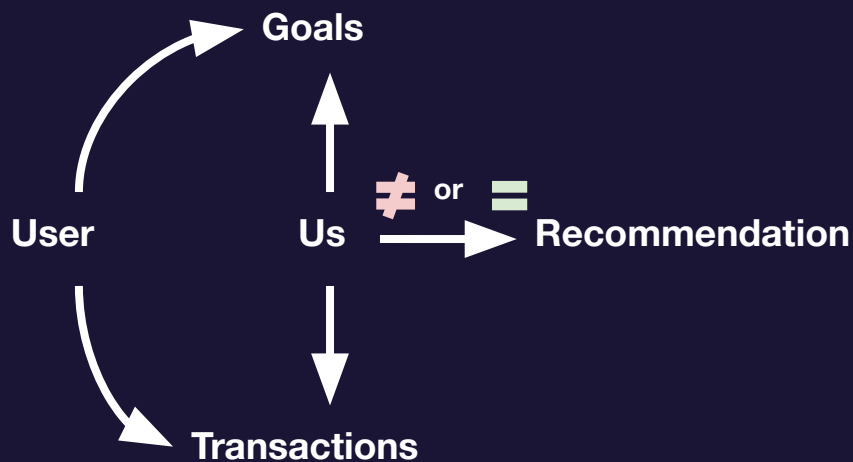
ATHALIA
LLM



ZHENGLUN
CS



An application that (1) records your financial goals, (2) generates recommendations to improve your finances, and (3) helps you stay on track to make your financial dream into reality.



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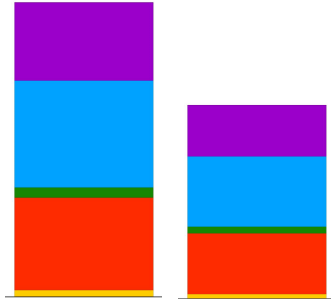


Experiment Outcomes



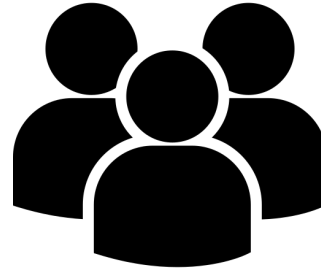
Visual Intuition

Stacked bar graphs
fastest for information
retrieval and most
accurate for estimation



Social Influence

People approximately 1.5X
more likely to achieve goal
if aware of how others with
similar goals are doing



Initial Configuration Most Likely to Succeed

- **Customer Segments**
 - Financial literacy beginners
 - Non-tech savvy
- **Product Features:**
 - Simplification through visually intuitive designs
 - Support for multiple bank account and credit card connectivity
 - Goal setting and suggestion generation

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Account
Winnie



Balance
\$4,427

Credit card
\$-346

Cash Account
\$4081

Investment
\$3480



Add an account

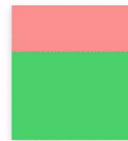
November Breakdown



Spending
\$2473



Income
\$3,860



View my November spending



Recent Transactions

[See All](#)



Food & Dining

Starbucks

11/18/2019

\$8.50



Goal



Review



Profile



Tips

< Home

GOALS



Dining

2 days left

Spend less than \$75 this week
compared to previous week



Total amount to spend: \$345

Entertainment

8 days left

Spend less than 25% less
compared to previous month



Total amount to spend: \$568

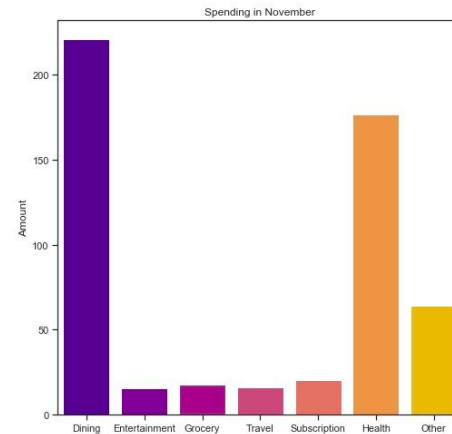
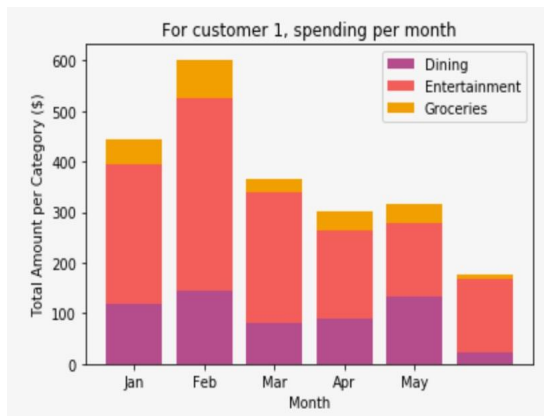
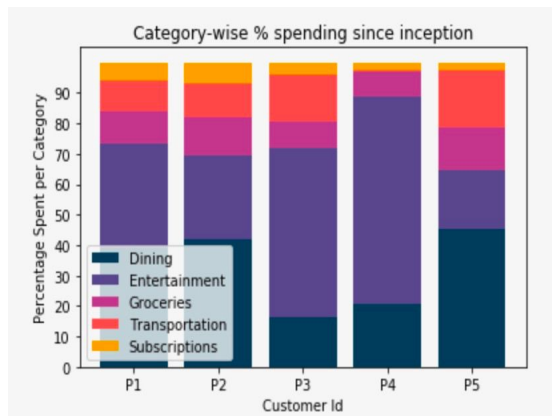
Dataset Exploration

Dataset : Transaction History Sample

kaggle.com/c/acquire-valued-shoppers-challenge/data

Shape of dataset

- **id** - A unique id representing a customer
- **category** - The product category (e.g. sparkling water)
- **date** - The date of purchase
- **purchaseAmount** - The dollar amount of the purchase



Next Steps



- Integrate Bank APIs
- Additional drill down capabilities, dynamic charting
- Complex recommendations
- Connection between front-end and back-end

Q&A

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< Goals

Custom Goals

Groceries ▼

Length

4 ▼

Weeks ▼

Amount

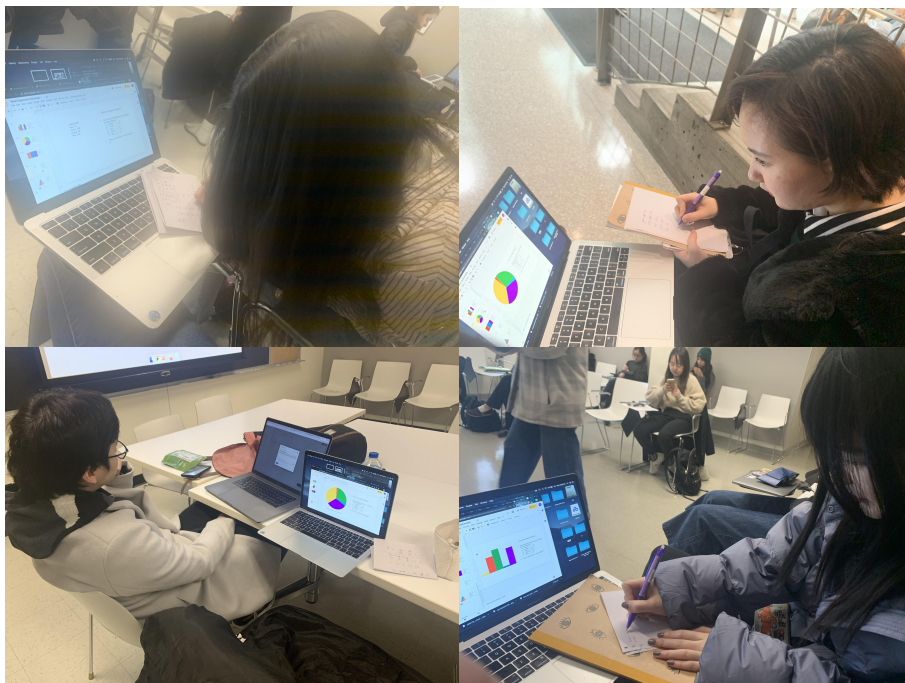
\$

180.00

Add Goal

Appendix

Experiment pictures & Calculation



Bar	P1(46)F	P2(43)M	P3	P4	P5	P6		
Q1	2.4	1.69	1.92	1.54	5.48	3.09	2.686666667	
Q2	115	71	76.6	29.24	67	122	80.14	
Q3	3.6	2	2.26	1.82	2.06	0.88	2.103333333	
Pie								
Q1	2.17	11.13	3.83	2.71	3.5	1.47	4.135	
Q2	39	84	130.32	33.37	50.17	97	72.31	
Q3	1.85	3.83	4.11	1.29	1.22	2.01	2.385	
Stacked								
Q1	3.18	1.31	1.05	3.45	1.28	2.69	2.16	
Q2	72	38	79.4	41.77	41.7	74	57.81166667	
Q3	2.3	2.13	1.84	2.89	0.71	1.24	1.851666667	
Text								
Q1	7.34	7	5.36	3.42	3.83	2.73	4.946666667	
Q2	67	65	120	29.61	69	70	70.10166667	
Q3	6.92	11.62	0.78	2.33	1.51	2.73	4.315	
Pyramid								
Q1	2.38	3.1	5.6					
Q2	39.2	106	74.23					
Q3	11.1	1.65	1.44					
Q2(Bar)	37.31,27.8.3	40.30,25.3.2	40.35,20.3.2	35.30,25.3.2	34.28,30.4.3	45.30,20.3.2		
Q2(Pie)	37.28,26.6.3	38.35,20.5.2	35.30,28.4.3	40.30,20.4.1	34.30,27.5.4	45.28,25.5.2		
Q2(Stacked)	40.28,23.5.4	38.35,20.5.2	40.30,25.3.2	45.30,25.3.2	36.30,28.4.2	40.30,25.10.5		
Q2(Text)	32.26,23.6.4	38.30,25.10.7	40.30,20.6.4	50.45,40.8.5	36.30,28.4.2	33.3,28.20.8.5		
Q2(Pyramid)	40.35,10.8.3	40.38,20.1.5,0.5		50.30,10.4.3	30.27,24.3.2			

	Correct	Bar	Pie	Inferred from =>			Bar	Pie	Errors =>			Text	Pyramid
				Stacked	Text	Pyramid			Stacked				
P1	36.2	37	37	40	32	40	38	38	38	4.2	3.8		
	31.4	31	28	28	28	30	30	30	3.4	3.4	3.4		
	26.5	27	26	23	23	10	0.5	0.5	3.5	3.5	16.5		
	3.4	8	6	5	8	8	4.6	2.8	1.6	2.6	4.6		
	2.2	3	3	4	4	3	0.8	0.8	1.8	1.8	0.8		
P2	36.2	40	38	38	38	40	3.8	1.8	1.8	1.8	3.8		
	31.4	30	38	38	30	30	1.4	3.6	3.6	1.4	6.6		
	26.5	25	20	20	25	20	1.5	6.5	6.5	1.5	6.5		
	3.4	3	5	5	10	1.5	0.4	1.6	1.6	6.6	1.9		
	2.2	2	2	2	7	0.5	0.2	0.2	0.2	4.8	1.7		
P3	36.2	40	35	40	40	None	3.8	1.2	3.8	3.8	None		
	31.4	35	30	30	30	None	3.6	1.4	1.4	1.4	None		
	26.5	20	28	20	20	None	6.5	1.5	1.5	6.5	None		
	3.4	3	4	3	6	None	0.4	0.6	0.4	2.6	None		
	2.2	2	3	2	4	None	0.2	0.6	0.2	1.6	None		
P4	36.2	35	40	45	50	50	1.2	3.8	8.8	13.8	13.8		
	31.4	30	30	30	45	30	1.4	1.4	1.4	13.6	1.4		
	26.5	25	20	25	40	10	1.5	6.5	1.5	13.5	16.5		
	3.4	3	4	3	8	4	0.4	0.6	0.4	4.6	0.6		
	2.2	2	1	2	5	3	0.2	1.2	0.2	2.6	0.8		
P5	36.2	34	34	36	36	30	2.2	2.2	0.2	0.2	6.2		
	31.4	28	30	30	30	27	3.4	1.4	1.4	1.4	4.4		
	26.5	30	27	28	38	34	3.6	0.5	1.5	1.5	2.5		
	3.4	4	5	4	4	3	0.8	1.6	0.6	0.6	0.4		
	2.2	3	4	3	2	2	0.8	1.8	0.2	0.2	0.2		
P6	36.2	45	45	40	33.3	None	8.8	6.8	3.8	2.8	None		
	31.4	30	28	30	28	None	1.4	3.4	1.4	3.4	None		
	26.5	20	25	25	20	None	4.5	1.5	1.5	6.5	None		
	3.4	3	5	10	8	None	0.4	1.6	6.6	4.6	None		
	2.2	2	2	5	5	None	0.2	0.2	2.8	2.8	None		