



# ASA DATAFEST 2023

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GROUP 6



# Our Objective

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Predict probable questions asked by users on the ABA platform and hire lawyers with matching expertise for each state's hiring process.

# How do we help ABA?

We facilitate direct promotion of two major objectives of the American Bar Association:

**Goal 1 - Serve Our Members** : Our model aims to enhance the communication process between users and lawyers by reducing response time, achieved by identifying and recruiting lawyers who possess expertise in the most commonly asked questions in each state.

**GOAL 2 - Improve Our Profession** : Our model aims to advance high-quality education on frequently asked legal questions, while simultaneously offering pro-bono legal services of exceptional quality.

# How we help increase Customer Satisfaction?

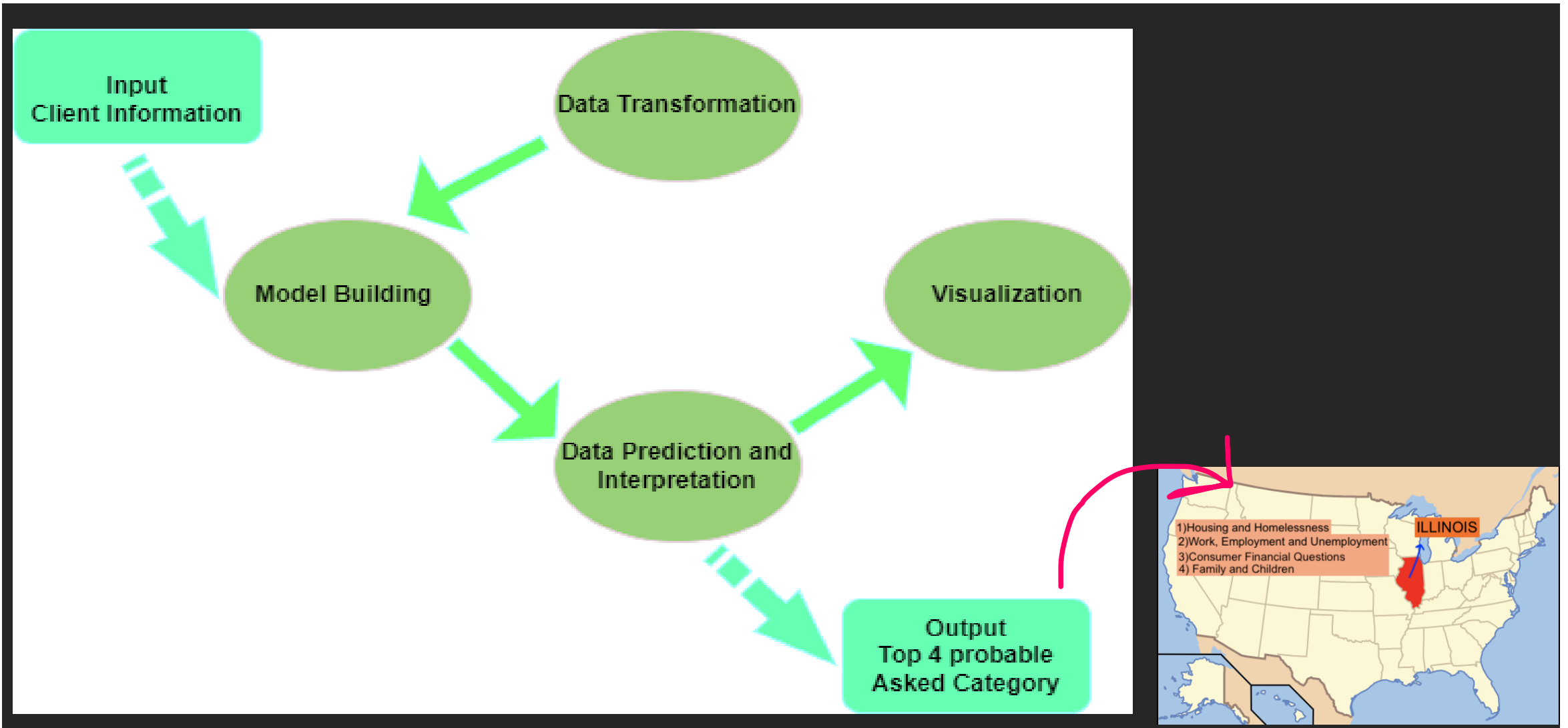
**P** = Prediction of the question a User may ask

**H** = Hired lawyers expert in the predicted category

**Q** = Question asked by a User

**A** = Answer right away!

# METHADOLOGY



# How our model helps the hiring procedure?

Our Predictive multinomial classification helps predict the top 4 frequently asked questions in each state with an accuracy of 72%(top 5 questions with an accuracy of 82%)



Information reaches the company , so they can hire required lawyers

Note: Questions are not ranked in order of popularity



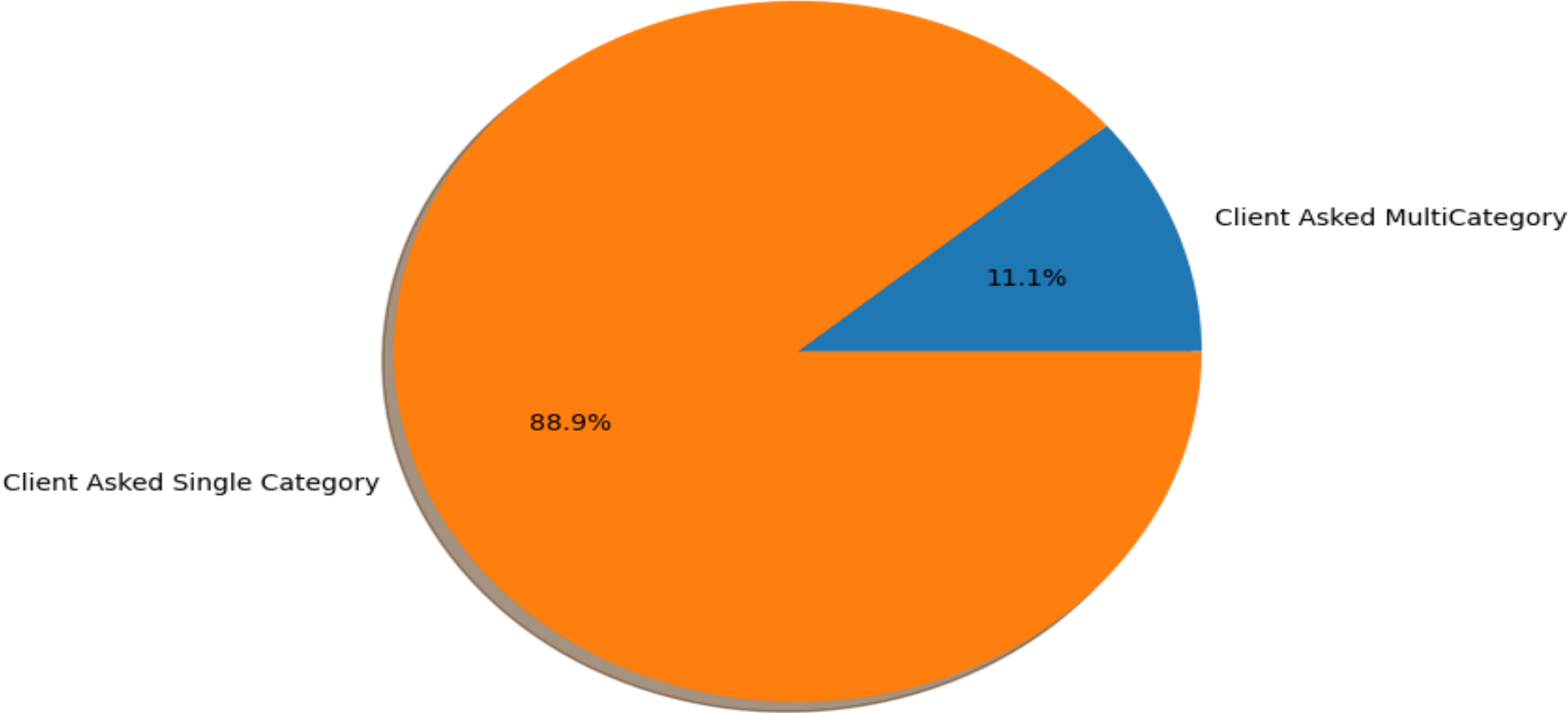
	State	C1	C2	C3	C4
0	AK	Family and Children	Other	Individual Rights	Consumer Financial Questions
1	AL				
2	AR	Individual Rights	Other	Family and Children	Consumer Financial Questions
3	AZ	Individual Rights	Housing and Homelessness	Consumer Financial Questions	Other
4	CA	Consumer Financial Questions	Housing and Homelessness	Family and Children	Other
5	CT	Work, Employment and Unemployment	Other	Housing and Homelessness	Family and Children
6	FL	Housing and Homelessness	Other	Consumer Financial Questions	Family and Children
7	GA	Housing and Homelessness	Consumer Financial Questions	Individual Rights	Family and Children
8	HI	Other	Consumer Financial Questions	Income Maintenance	Family and Children
9	IA	Family and Children	Consumer Financial Questions	Other	Work, Employment and Unemployment
10	IL	Housing and Homelessness	Work, Employment and Unemployment	Consumer Financial Questions	Family and Children
11	IN	Housing and Homelessness	Other	Work, Employment and Unemployment	Family and Children
12	KS	Work, Employment and Unemployment	Other	Housing and Homelessness	Health and Disability
13	LA	Other	Housing and Homelessness	Family and Children	Consumer Financial Questions
14	MA	Income Maintenance	Housing and Homelessness	Consumer Financial Questions	Work, Employment and Unemployment
15	MD	Consumer Financial Questions	Work, Employment and Unemployment	Individual Rights	Family and Children
16	ME	Individual Rights	Consumer Financial Questions	Work, Employment and Unemployment	Family and Children
17	MI				
18	MO	Health and Disability	Consumer Financial Questions	Housing and Homelessness	Education
19	MS	Other	Work, Employment and Unemployment	Housing and Homelessness	Education
20	NC	Housing and Homelessness	Other	Consumer Financial Questions	Family and Children
21	NE	Family and Children	Housing and Homelessness	Other	Consumer Financial Questions
22	NH	Family and Children	Consumer Financial Questions	Income Maintenance	Housing and Homelessness
23	NJ	Other	Consumer Financial Questions	Individual Rights	Family and Children
24	NM	Housing and Homelessness	Consumer Financial Questions	Income Maintenance	Individual Rights
25	NY	Individual Rights	Other	Housing and Homelessness	Consumer Financial Questions
26	OK	Other	Consumer Financial Questions	Individual Rights	Housing and Homelessness
27	PA	Education	Consumer Financial Questions	Other	Family and Children
28	SC	Work, Employment and Unemployment	Consumer Financial Questions	Housing and Homelessness	Family and Children
29	SD	Consumer Financial Questions	Other	Work, Employment and Unemployment	Family and Children
30	TN	Work, Employment and Unemployment	Consumer Financial Questions	Individual Rights	Housing and Homelessness
31	TX	Housing and Homelessness	Consumer Financial Questions	Other	Family and Children
32	US	Housing and Homelessness	Family and Children	Individual Rights	Other
33	UT	Work, Employment and Unemployment	Consumer Financial Questions	Individual Rights	Housing and Homelessness
34	VA	Other	Work, Employment and Unemployment	Consumer Financial Questions	Housing and Homelessness
35	VT	Other	Work, Employment and Unemployment	Housing and Homelessness	Family and Children
36	WI	Consumer Financial Questions	Other	Housing and Homelessness	Family and Children
37	WV	Housing and Homelessness	Family and Children	Consumer Financial Questions	Work, Employment and Unemployment
38	WY	Consumer Financial Questions	Other	Housing and Homelessness	Education

## LIMITATIONS:

- Mixture of Categorical and Numerical Data
- Many One Hot Encoding intrude multicollinearity affecting accuracy
- Small dataset size for training
- 11% of clients in dataset asked questions in multiple Categories



Percentage of Clients who asked MultiCategory



## SUMMARY:

- We predict questions a user may ask
- We help hire lawyer with expertise in the required fields in advance.
- This may help increase probability of users' questions being answered in a faster and efficient manner

How we help increase Customer Satisfaction?

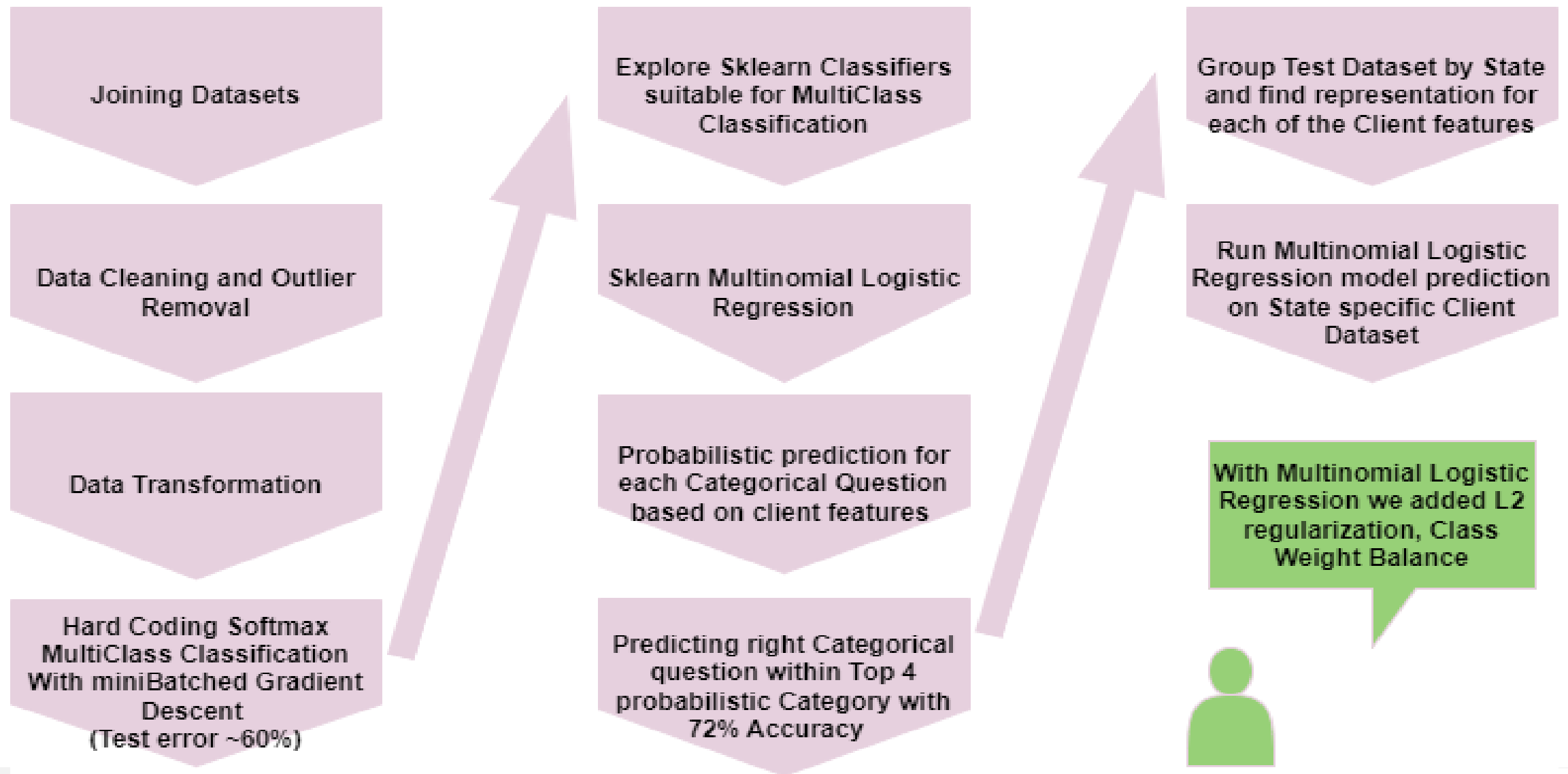
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# Technical Working of the model





# Thank You