Auto Judge

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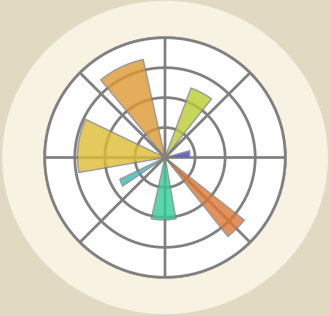
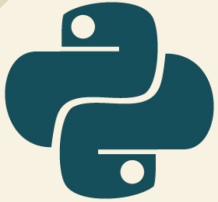
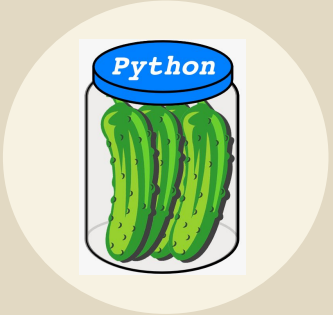
INTRODUCTION

- Unsupervised model to Match similar court cases.
- Supervised Model to predict the judgment results.

TOOLS





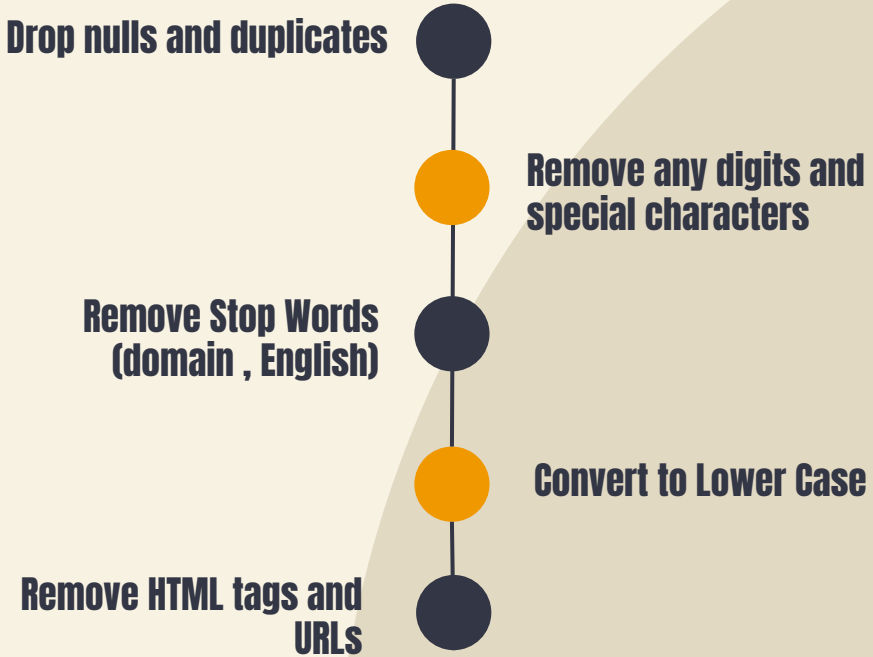


DATA STORY

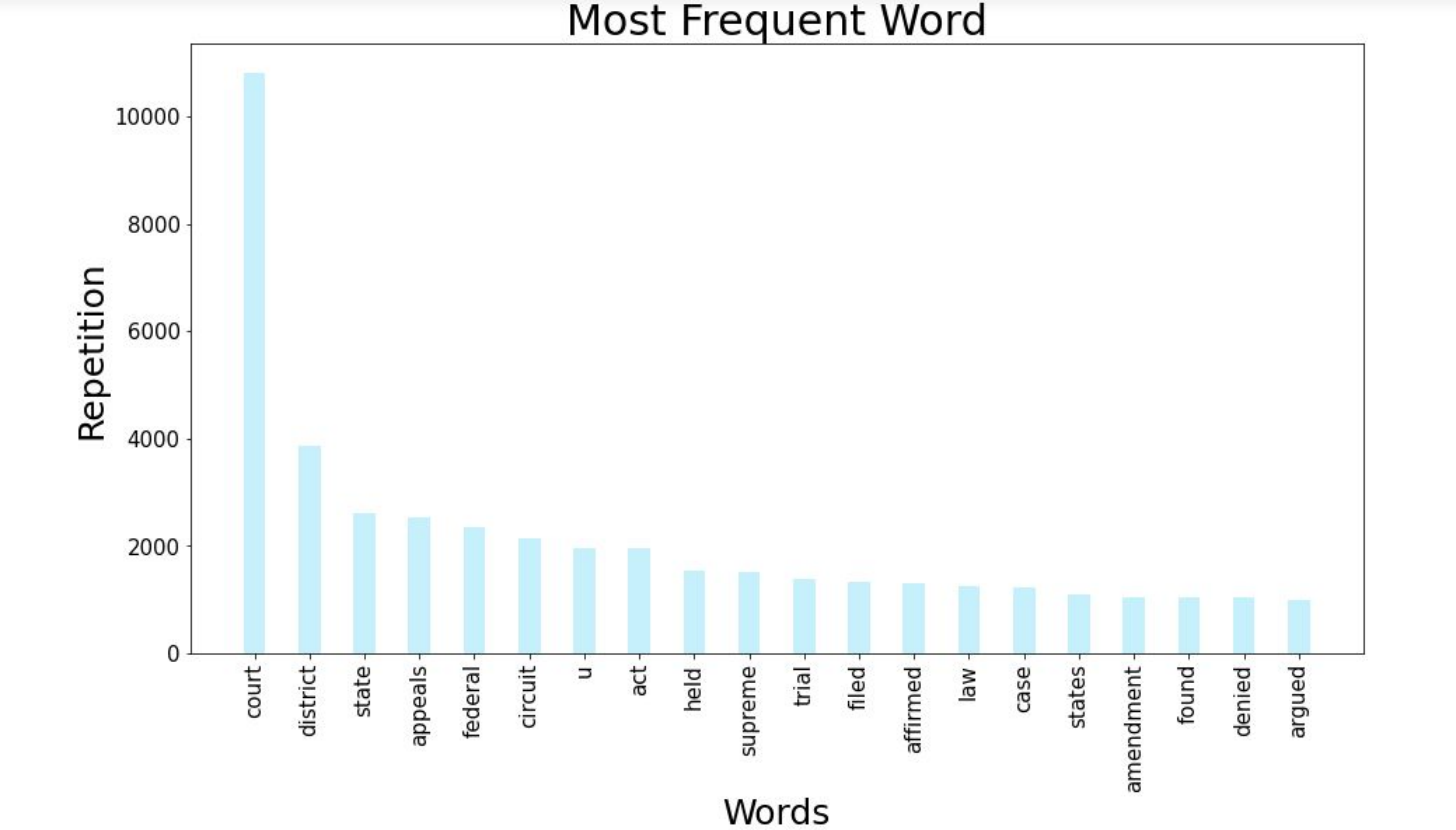
Data Size :
3304 row
15 columns

Data Source :
from the Supreme Court of the United States from 1955 to 2021 (Kaggle)

Data preprocessing



WORD FREQUENCY



Topic Modeling

- LDA ✗
- LSA ✗
- NMF ✗
- Corex ✓

The Final Topics :

1. First Amendment Cases
2. Tax-related court cases
3. Criminal cases
4. Political court cases
5. Domestic violence (family law)
6. Immigration Cases
7. Labor Union Cases
8. privacy rights cases

Topic Modeling

Topic 0	speech	religious	freedom	free	nonreligious	religion	amendment	establishment
Topic 1	tax	income	bankruptcy	revenue	taxes	paid	refund	retirement
Topic 2	guilty	arrested	prison	killed	convicted	sentenced	murder	trial
Topic 3	election	voters	voting	candidates	vote	elections	redistricting	school
Topic 4	mother	Son	father	beaten	threatening	child	died	parents
Topic 5	immigration	nationality	deported	citizen	deportation	states	united	removal
Topic 6	company	labor	union	companies	employees	workers	relations	agreement
Topic 7	private	privacy	clean	public	agency	magazines	scandal	land

Supervised Learning

- Logistic Regression ✗
- KNN ✗
- Naive Bayes ✗
- MLP ✗
- SVM ✗
- Ensamble ✓

The best model is the (Ensemble Model)
With Accuracy testing Score : 0.78

Supervised Learning

- The following is a demo for predicting the case judgment

```
out = predict('Jake', 'John', 'John was assaulted by Jake at gun point.')
print(f'Expecting 1 but got {out}')
```

```
Expecting 1 but got 1
```

Future Work

- Improve our model to be more accurate
- Include more cases.
- Web Application.

THANKS!