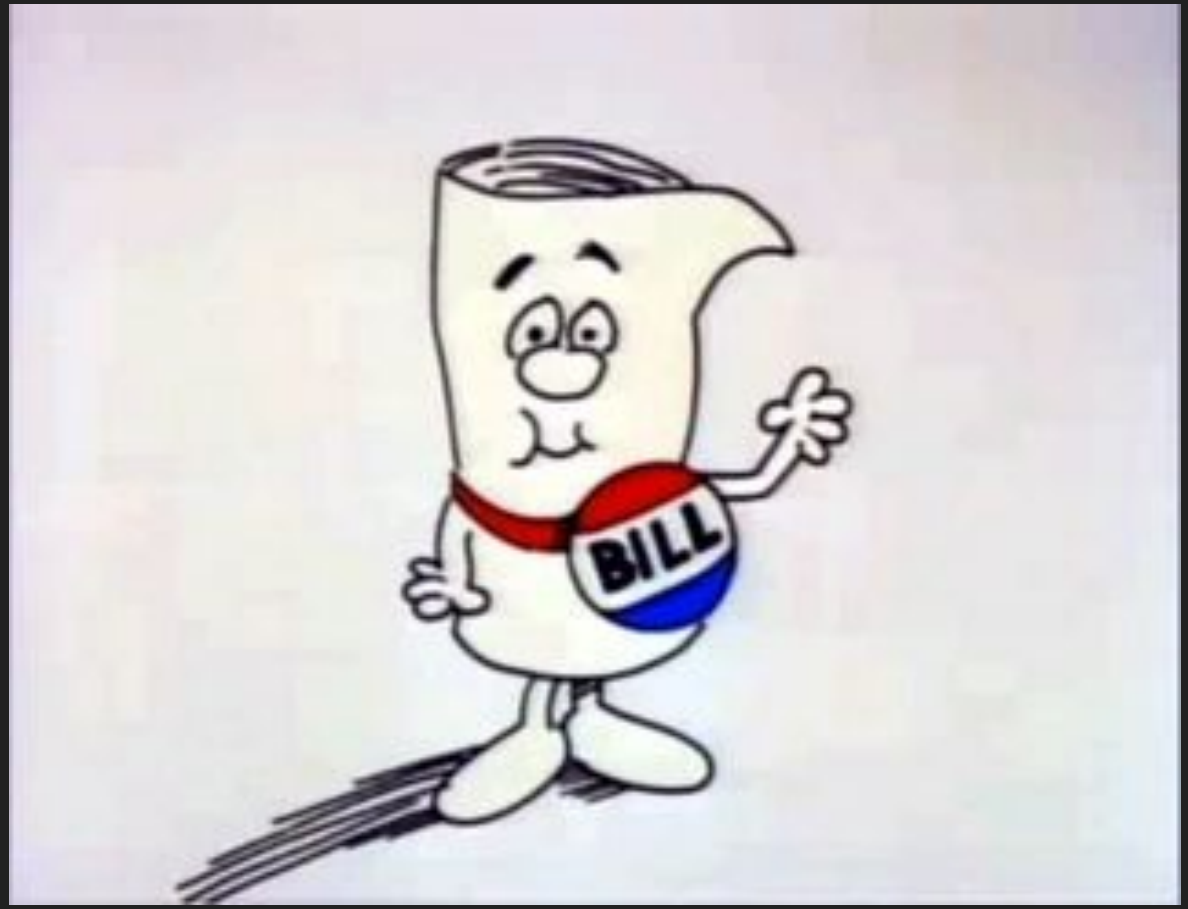
116th US Congress

Predicting the fate of a bill

Overview



Business Problem

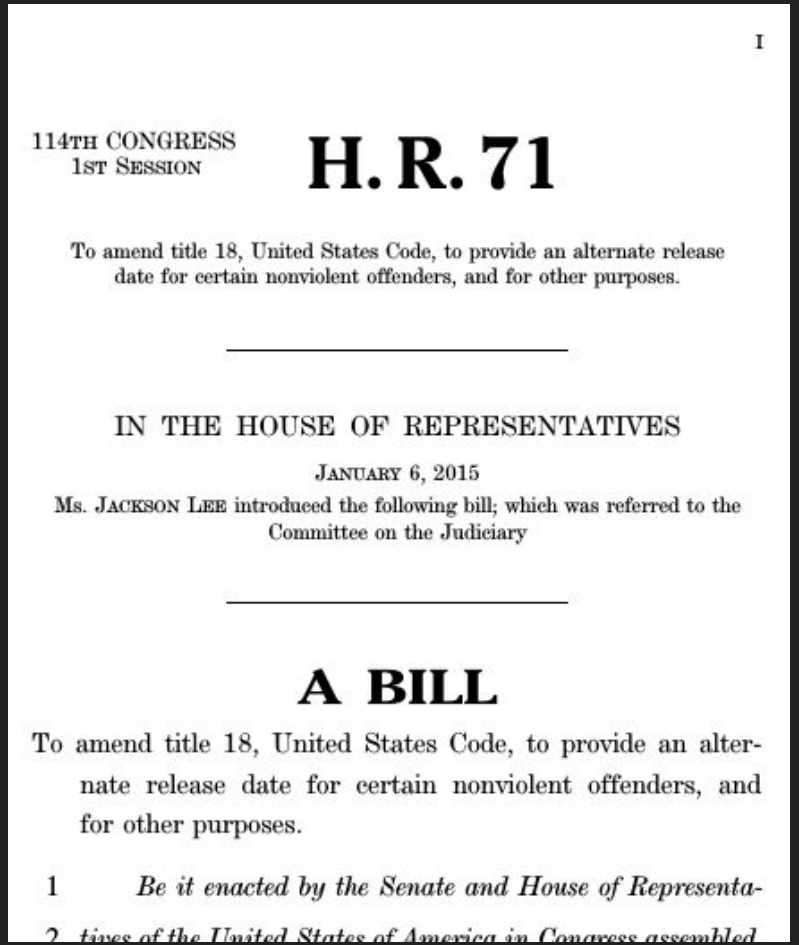
-Weeks to Write

-Limited Time

-Effects Everyone

Data Understanding

- 5,600 Proposals
- Mostly Text
- Unique Elements



I

114TH CONGRESS
1ST SESSION

H. R. 71

To amend title 18, United States Code, to provide an alternate release date for certain nonviolent offenders, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 6, 2015

MS. JACKSON LEE introduced the following bill; which was referred to the Committee on the Judiciary

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A BILL

To amend title 18, United States Code, to provide an alternate release date for certain nonviolent offenders, and for other purposes.

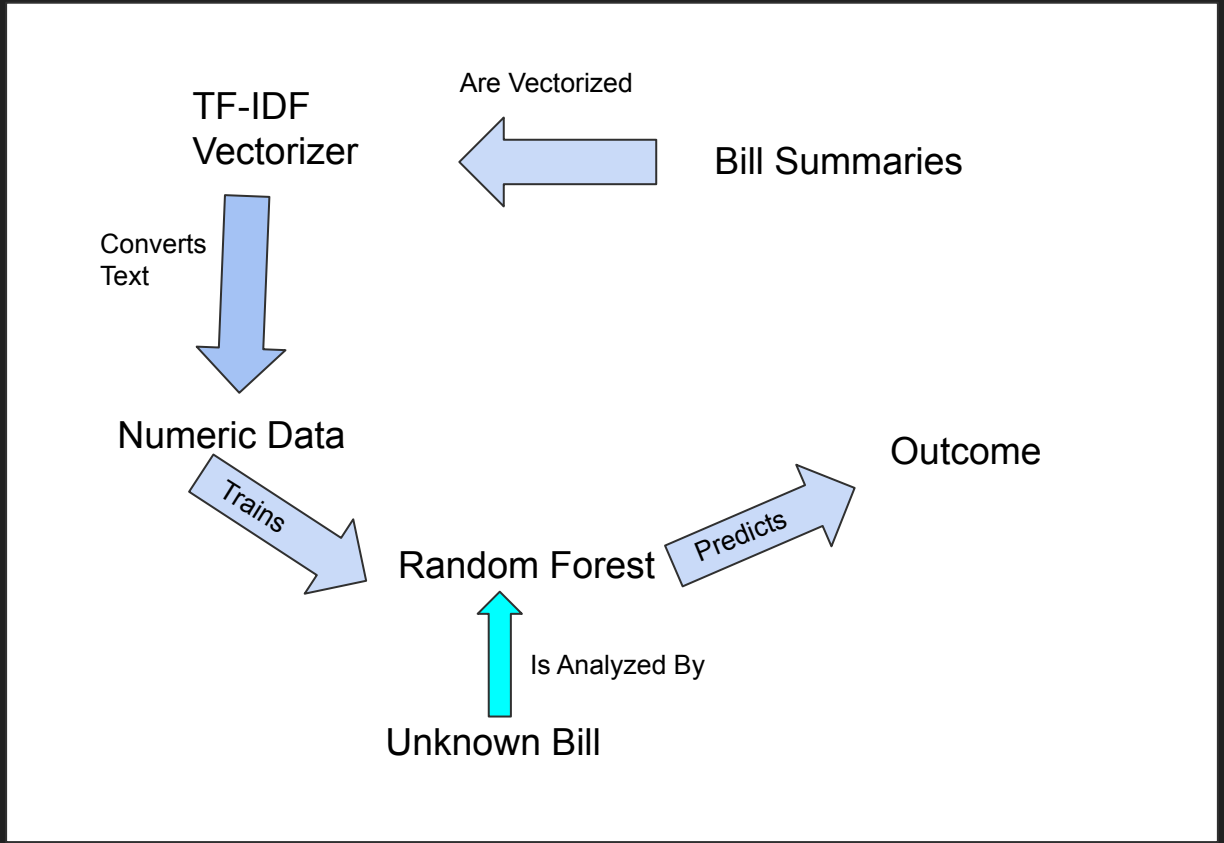
Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled

Methods

-NLP

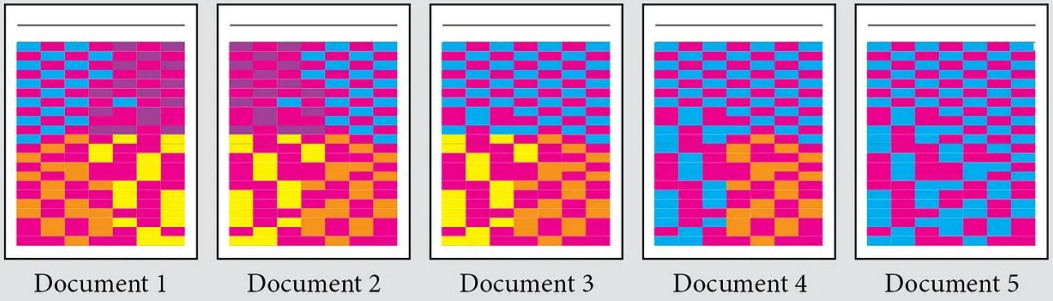
-TF-IDF Vectorizer

-Random Forest



Methods - NLP

- Simplifying of text
- Converted to Numerics
- Vectorized



Corpus TF-IDF Values						
		Terms				
Documents	1	0	.05	.027	.012	0
	2	0	.05	.027	.012	0
	3	0	0	.027	.012	0
	4	0	0	0	.012	0
	5	0	0	0	0	0

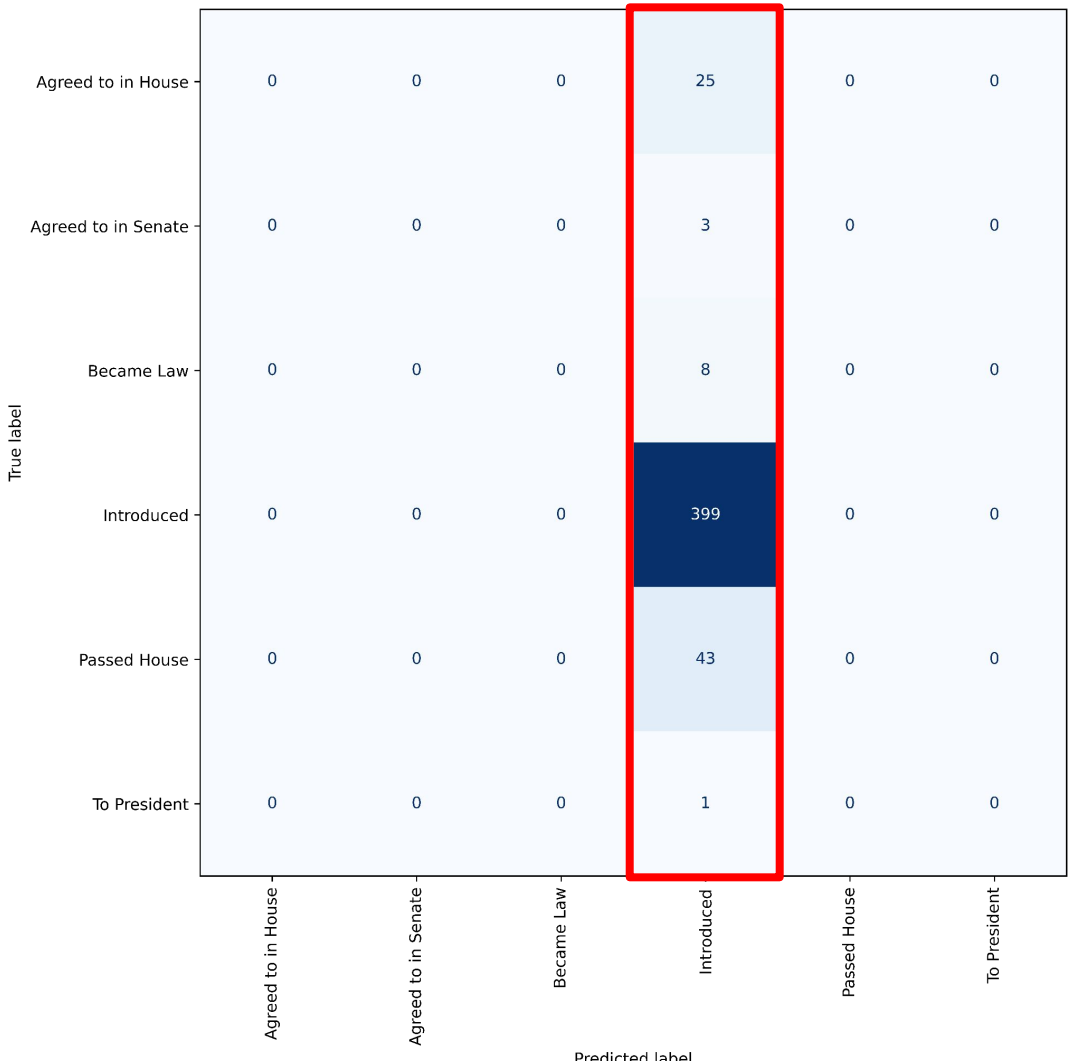
https://towardsdatascience.com/tf-idf-a-visual-explainer-and-python-implementation-on-presidential-inauguration-speeches-2a7671168550

Dummy Model

-Base Line

-Accuracy : .84

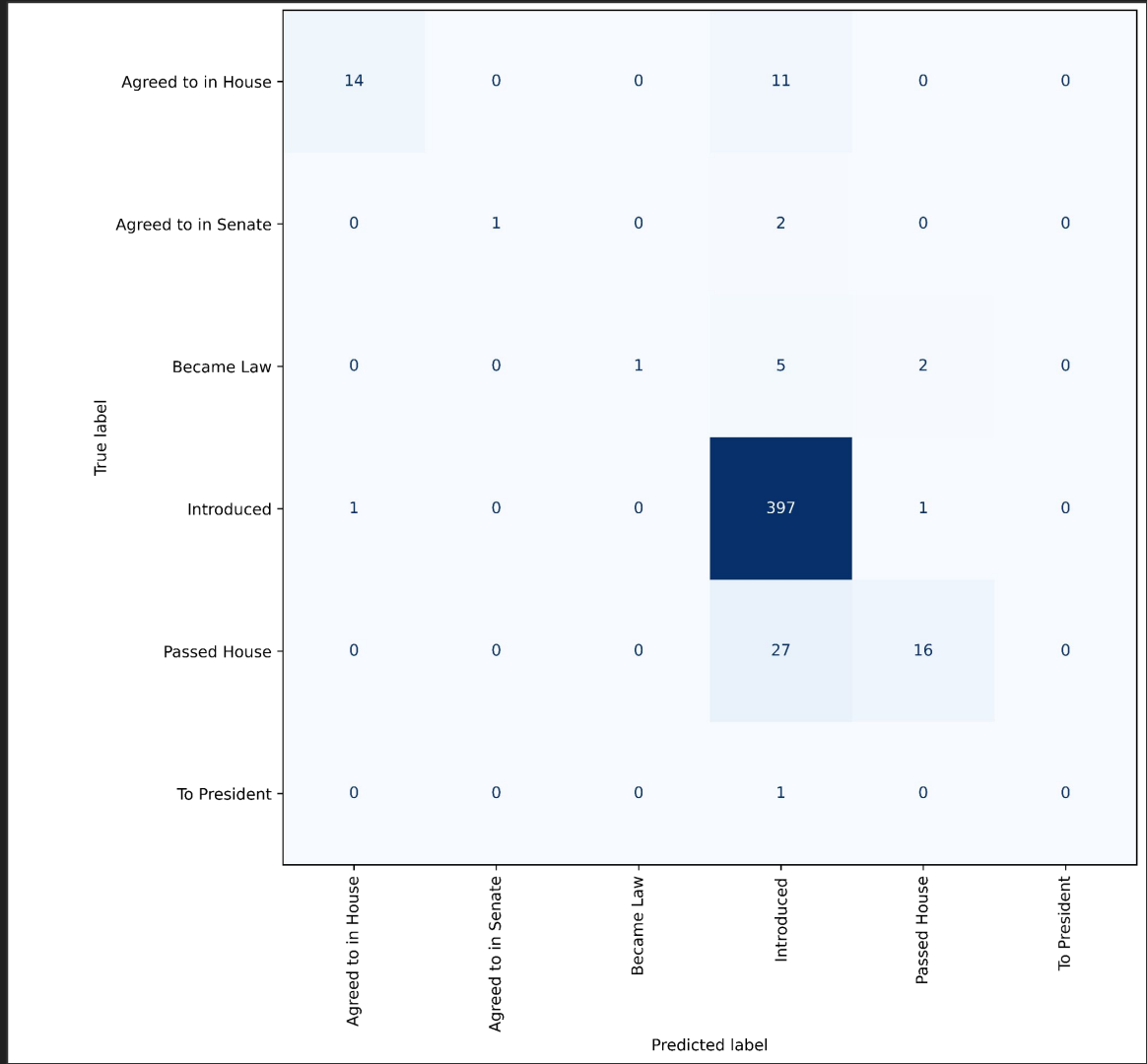
-F1 Score : .76



Final Model

Accuracy : .85

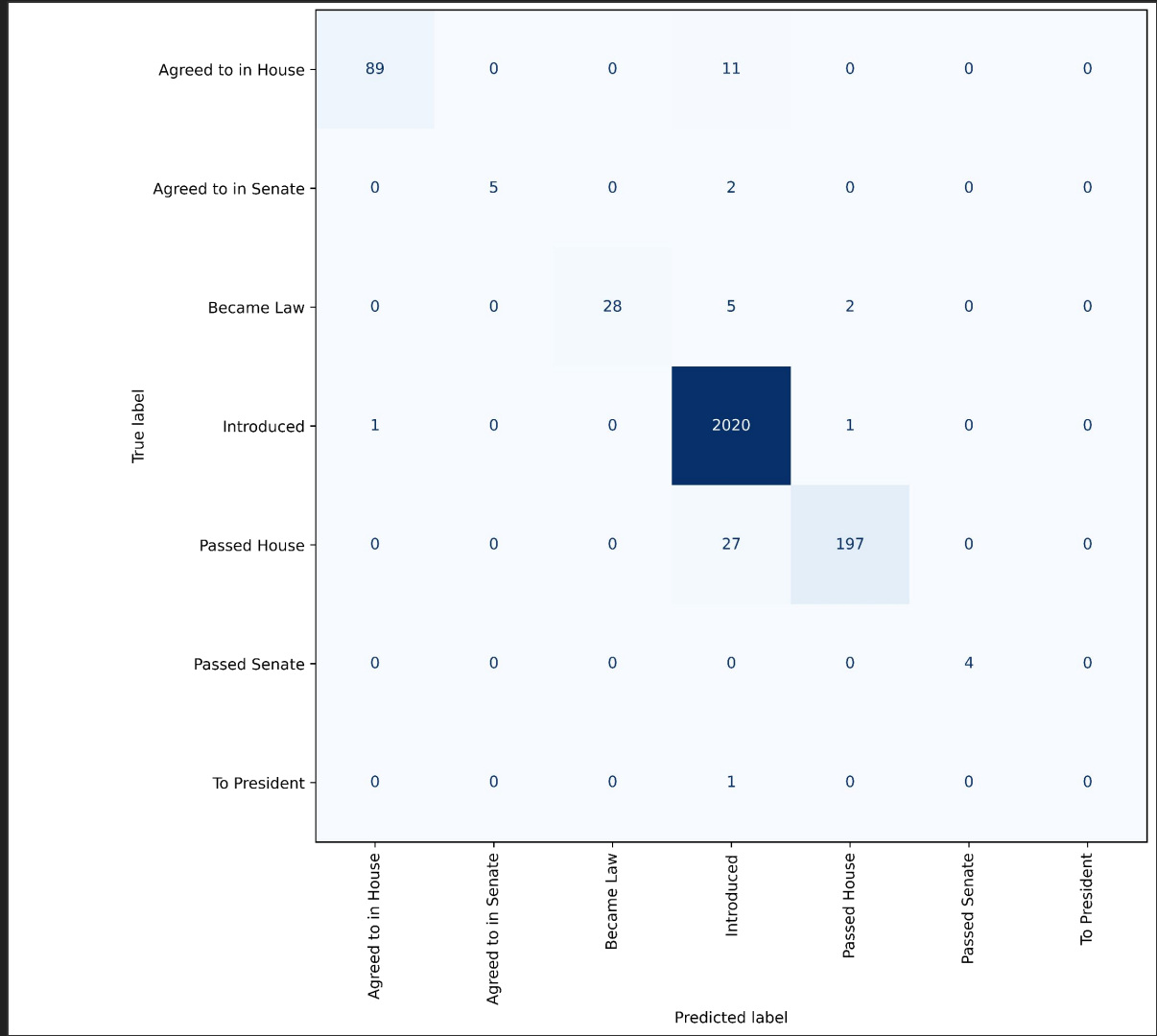
F1 Score : .85

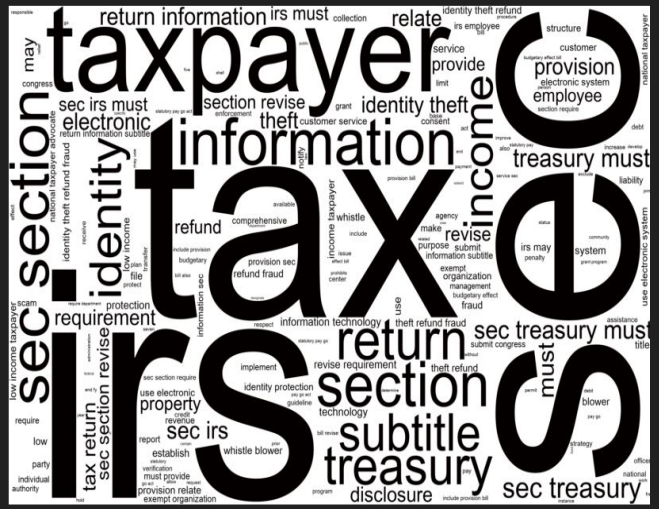


Over fitting

Accuracy : .97

F1 Score : .97




taxpayer
irs
taxes
information
sec section
identity
income
return
section
subtitle
treasury
sec treasury
provision
employee
identity theft
treasury must
sec treasury must
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electronic
refund
requirement
property
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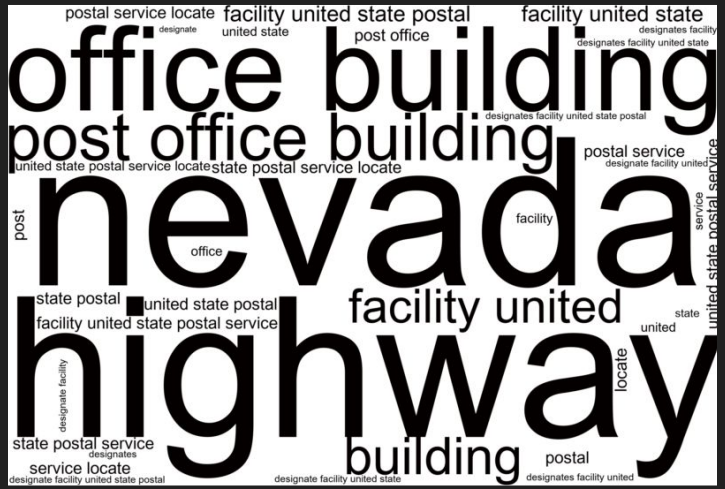
theft
revise
must
disclosure
return information
irs must
relate
provide
structure
customer
electronic system
system
irs may
information subtitle
information technology
revise requirement
theft refund
technology
whistle blower
establish
must provide
provision relate
exempt organization
low income taxpayer
national taxpayer advocate
identity theft refund fraud
low income
national taxpayer
use electronic system
use


office building
post office building
nevada
highway
facility united
building
postal service locate
facility united state postal
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location court must holdlist location
flagstaff yuma list location court

Conclusions and Next Steps

- Not all Bad

- More Data Needed

- Social Media

Thank You

Gideon Miles
Email: milesgideon@gmail.com
Github: https://github.com/Giddybird