In [1]:
```
import spacy
nlp = spacy.load("en_core_web_sm")
```

In [2]:
```
nlp.pipe_names
```

Out[2]:
```
['tok2vec', 'tagger', 'parser', 'attribute_ruler', 'lemmatizer', 'ner']
```

In [6]:
```
# suppose we find to entity in this doc

doc =  nlp ("Tesla Inc is going to acquire Twitter.inc for $45 billion")

# ent.text will give us the labels
for ent in doc.ents:
    print(ent.text, "|", ent.label_, "|", spacy.explain(ent.label_))
```

```
Tesla Inc | ORG | Companies, agencies, institutions, etc.
Twitter.inc | ORG | Companies, agencies, institutions, etc.
$45 billion | MONEY | Monetary values, including unit
```

In [7]:
```
# we will use displacy library to visualize render in a better way

from spacy import displacy
displacy.render(doc, style="ent")
```

List down all the entities which NER supports

In [9]:
```
nlp.pipe_labels["ner"]
```

Out[9]:
```
['CARDINAL',
 'DATE',
 'EVENT',
 'FAC',
 'GPE',
 'LANGUAGE',
 'LAW',
 'LOC',
 'MONEY',
 'NORP',
 'ORDINAL',
 'ORG',
 'PERCENT',
 'PERSON',
 'PRODUCT',
 'QUANTITY',
 'TIME',
 'WORK_OF_ART']
```

In [10]:
```
doc = nlp("Michael Bloomberg founded Bloomberg in 1982")
for ent in doc.ents:
    print (ent.text, "|", ent.label_, "|", spacy.explain(ent.label_))
```

```
Michael Bloomberg | PERSON | People, including fictional
Bloomberg | PERSON | People, including fictional
1982 | DATE | Absolute or relative dates or periods
```

Since it is pre trained model, it works but it didn't a perfect as we can see from above example, another Bloomberg is a company

We can use hugging face for some of the library in spacy, if we want to manually add some model in pre trained model present in spacy- we can use Span and it is a class in Spacy

In [11]:
```
# when you look at single token

doc[0]
```

Out[11]:
```
Michael
```

In [12]:
```
type(doc[0])
```

Out[12]:
```
spacy.tokens.token.Token
```

In [13]:
```
doc[2:5]
```

Out[13]:
```
founded Bloomberg in
```

In [14]:
```
type(doc[2:5])
```

Out[14]:
```
spacy.tokens.span.Span
```

It works as span - with a noramal python type code

Setting custom entities

In [32]:
```
from spacy.tokens import span
s1 = Span(doc, 3,4, label ="org")
doc.set_ents([s1], default = "unmodified")
```

In [33]:
```
for ent in doc.ents:
    print (ent.text, "|", ent.label_)
```

```
Michael Bloomberg | PERSON
Bloomberg | org
1982 | DATE
```