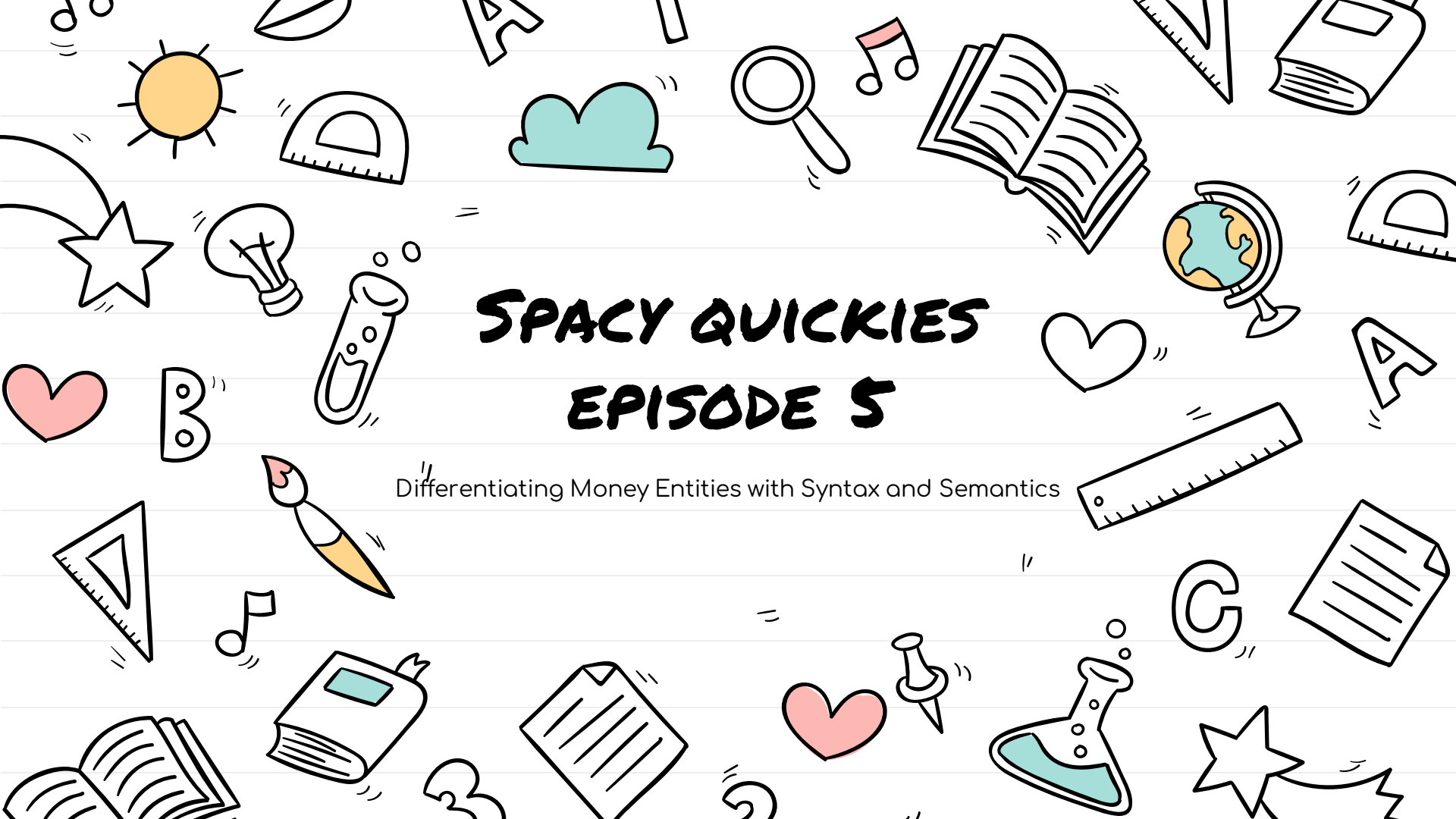
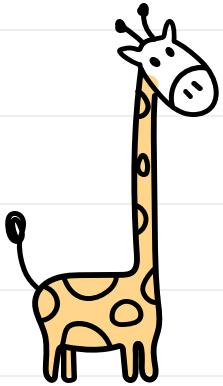

Spacy quickies
episode 5
Differentiating Money Entities with Syntax and Semantics



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I earned £10,000.
I spent £200.
I lost 400$ at gambling.
The thief took my 600$.
The thief stole 300$ from my wallet.
The tax office took my 500$.
The tax office charged me extra 200$ for this quarter.

£10,000: MONEY_INCOME
£200: MONEY_EXPENSE

# 3 STEPS

## EXTRACT MONEY ENTS

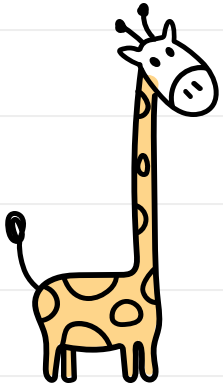
Extract money entities with Matcher

## EXTRACT VERBS

Extract related verbs by dependency tree walk

## EVALUATE VERB SEMANTICS

Evaluate verb semantics with dict lookup



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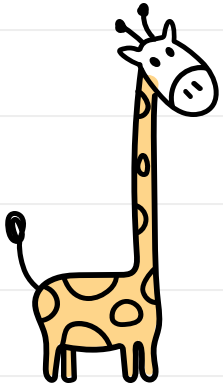
```
import spacy
nlp = spacy.load("en_core_web_md")
from spacy.matcher import Matcher

doc1 = nlp("I spent 200$ on my books.")
matcher = Matcher(nlp.vocab)
pattern = [{"IS_DIGIT": True}, {"IS_CURRENCY": True}]
matcher.add("money", [pattern])

matches = matcher(doc1)
for mid, start, end in matches
  print(start, end, doc1[start:end])

2 4 200$
```

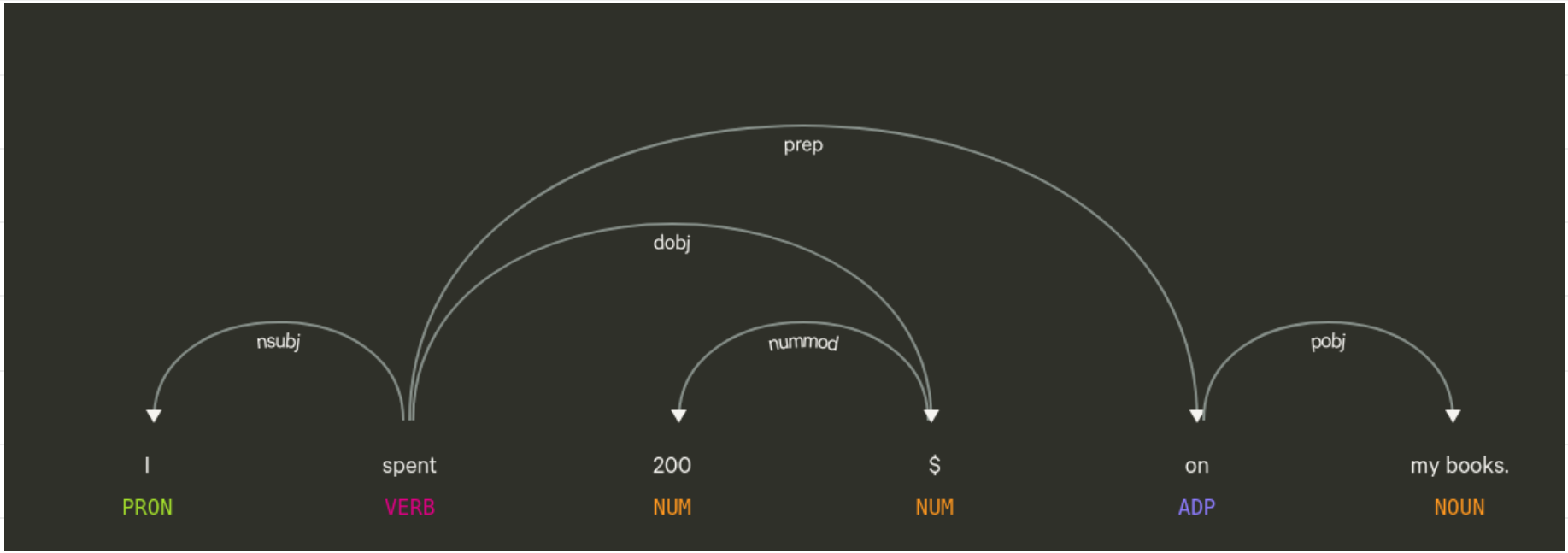


?

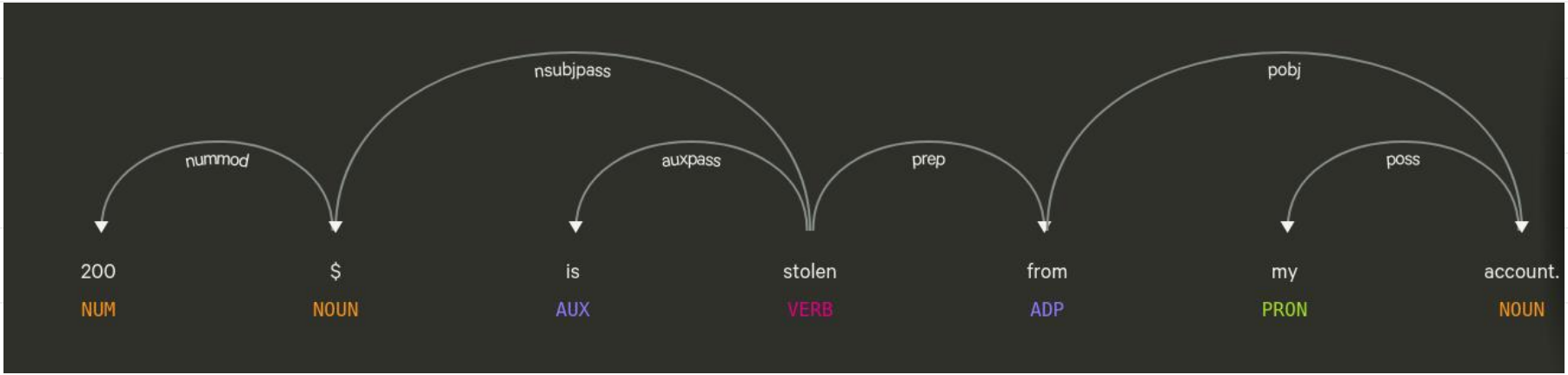
```
pattern2 = [{"IS_CURRENCY": True}, {"IS_DIGIT": True}]
matcher.add("money2", [pattern2])
doc2 =nlp("Your flight costs £20. You can buy extra leg
space for £5")
matches = matcher(doc2)
for mid, start, end in matches
  print(start, end, doc2[start:end])
```

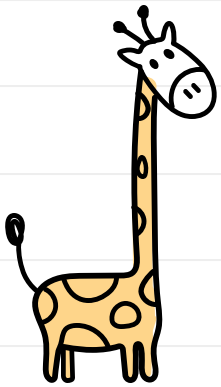
3 5 £20
13 15 £5

# Dependency tree



# Dependency tree





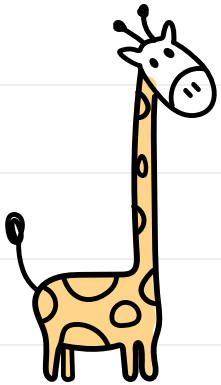
?

```
doc3 = nlp("200$ is stolen from my account")
matches = matcher(doc3)
for mid,start,end in matches:
    match = doc3[start:end]
    curr_tok = match[-1]
    print(curr_tok.dep_, curr_tok.head, curr_tok.head.lemma_)
```

```
nsubjpass stolen steal
```

Bank charged 200$ me for getting a credit card.
I spent 200$ on my new books.
He earns around 500$ from his part time job.

200$ is taken from my account by tax office.
200$ is taken from my account without my permission.



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# THE END