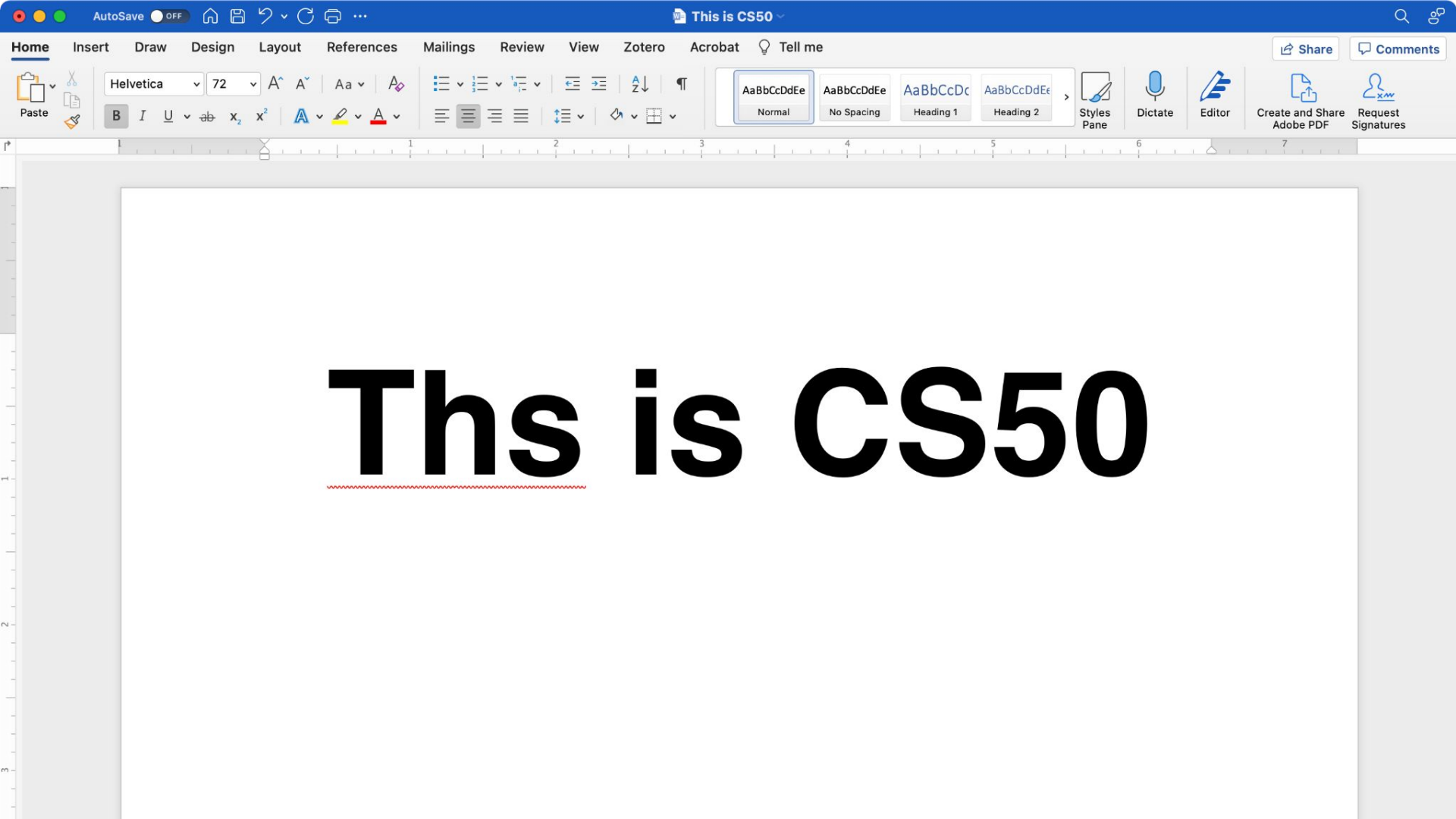
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Helvetica 72
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AaBbCcDdEe No Spacing
AaBbCcDc Heading 1
AaBbCcDdEe Heading 2
Styles Pane
Dictate
Editor
Create and Share Adobe PDF
Request Signatures
Ths is CS50

Think.
Pair.
Share.

cs50.ly/questions

```
string phrase = get_string("");
```

```
phrase = input("")
```

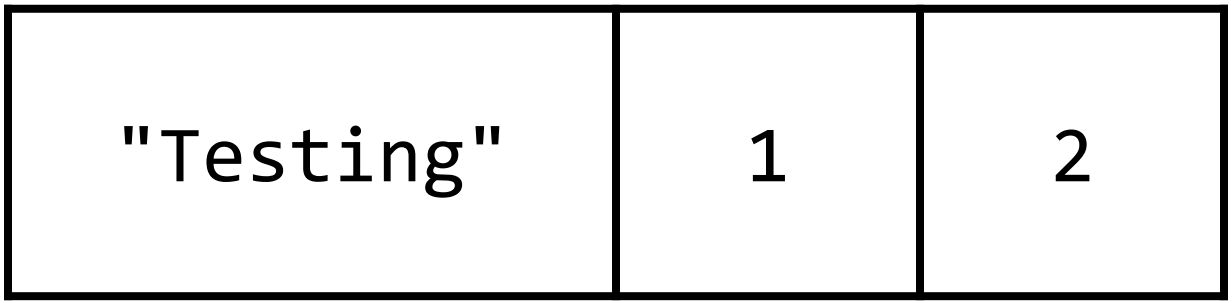
```c
if (strcmp(phrase, "hello") == 0)
{
    printf("Hi, %s!\n", name);
}
```

```python
if phrase == "hello":
    print(f"Hi {name}!")
```

```
my_list = ["Testing", 1, 2]
```

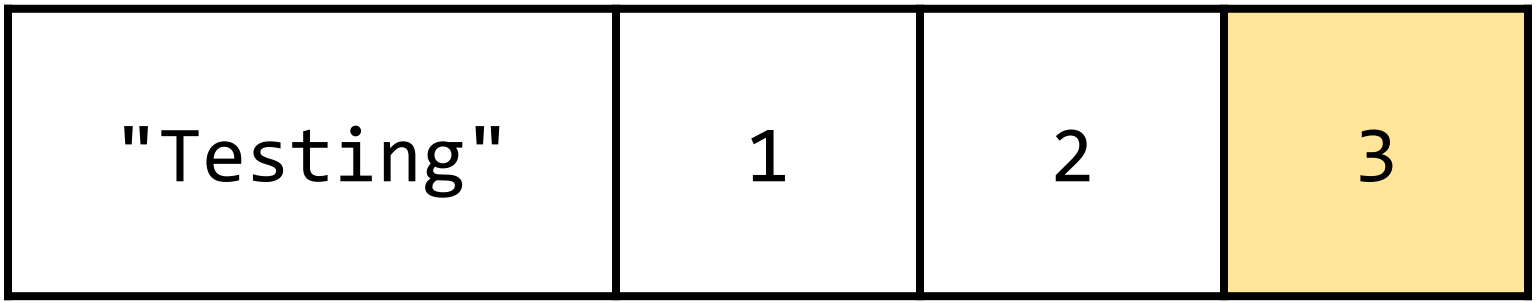
```
my_list = ["Testing", 1, 2]
```

my_list



```
my_list.append(3)
```

my_list



```
for i in [0, 1, 2]:
    print(i)
```

```
for i in range(0, 3, 1):
    print(i)
```

Start (inclusive)

```
for i in range(0, 3, 1):
    print(i)
```

End (exclusive)

```
for i in range(0, 3, 1):
    print(i)
```

Step

```
for i in range(0, 3, 1):
    print(i)
```

```
phrase[i]
```


```
phrase[i]
```

String Predictions

Download and open **str_prediction.py** in code.cs50.io.

At cs50.ly/str_prediction, predict the outcomes for each "Round" of string manipulation in Python. Write your predictions **without** running **str_prediction.py**. Then, run **python str_prediction.py** to see what's actually happening!

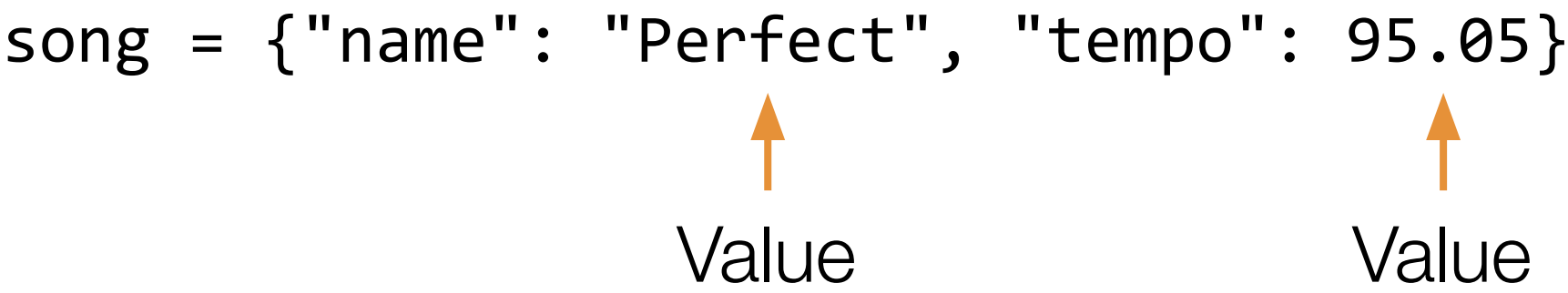
Afterwards, try modifying the **range** function in Round 6 to print a string backwards.

```
song = {"name": "Perfect", "tempo": 95.05}
```

```
song = {"name": "Perfect", "tempo": 95.05}
```

Key

Key


song = {"name": "Perfect", "tempo": 95.05}
Value
Value

```
song = {"name": "Perfect", "tempo": 95.05}
```

song	
"name"	"Perfect"
"tempo"	95.05

```
song["name"]
```

song	
"name"	"Perfect"
"tempo"	95.05

```
song["album"] = "Divide"
```

song	
"name"	"Perfect"
"tempo"	95.05
"album"	"Divide"

```
[{name: "Perfect", tempo: 95.05},
 {name: "Eastside", tempo: 89.391},
 {name: "Wolves", tempo: 124.946},
 {name: "Him & I", tempo: 87.908}]
```

```
[{name: "Perfect", tempo: 95.05},
 {name: "Eastside", tempo: 89.391},
 {name: "Wolves", tempo: 124.946},
 {name: "Him & I", tempo: 87.908}]
```

```
[{name: "Perfect", tempo: 95.05},
 {name: "Eastside", tempo: 89.391},
 {name: "Wolves", tempo: 124.946},
 {name: "Him & I", tempo: 87.908}]
```

2018 top 100

```
name,tempo
God's Plan,77.169
SAD!,75.023
rockstar (feat. 21 Savage),159.847
Psycho (feat. Ty Dolla $ign),140.124
In My Feelings,91.03
Better Now,145.028
...
```

```
with open(FILENAME) as file:
```

```
with open(FILENAME) as file:
    file_reader = csv.DictReader(file)
```

```
with open(FILENAME) as file:
    file_reader = csv.DictReader(file)
    for row in file_reader:
```

```
with open(FILENAME) as file:
    file_reader = csv.DictReader(file)
    for row in file_reader:
        ...
```

Crafting Playlists

Download **playlist.py** and **2018_top100.csv**.

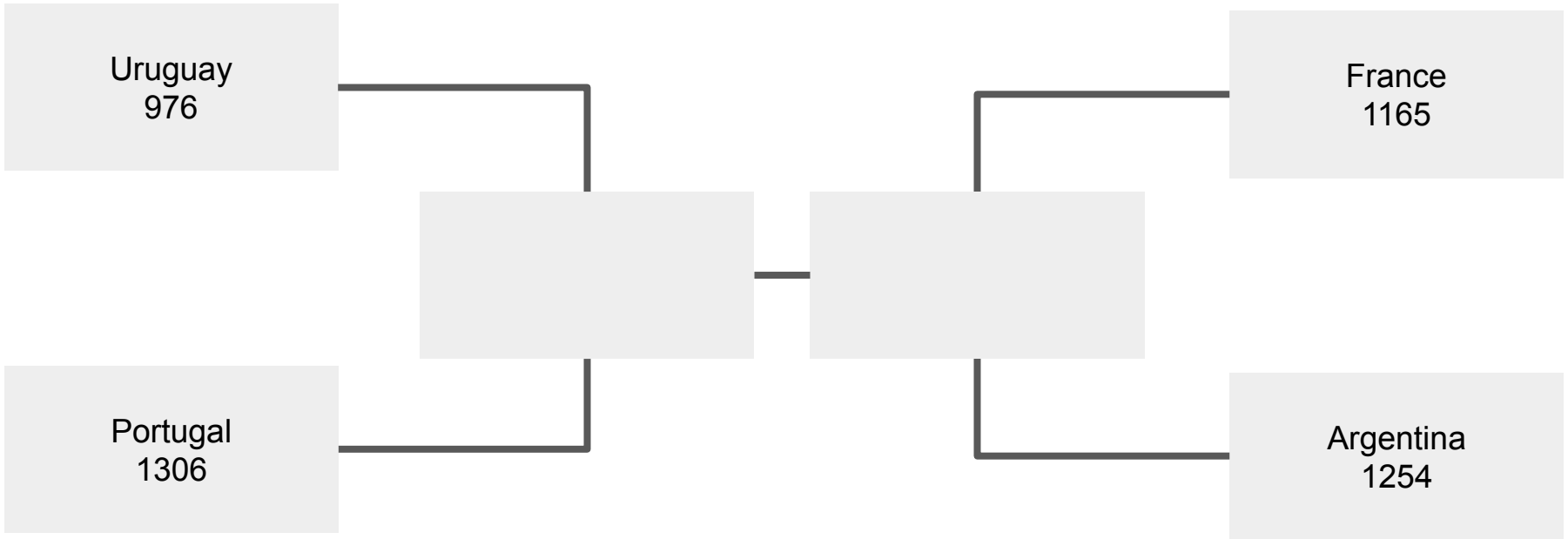
Complete the TODOs in **playlist.py** so that a user can build a playlist of popular songs within a tempo range.

If feeling more comfortable, try allowing the user to eliminate songs with certain words or phrases in the title (e.g., "love").

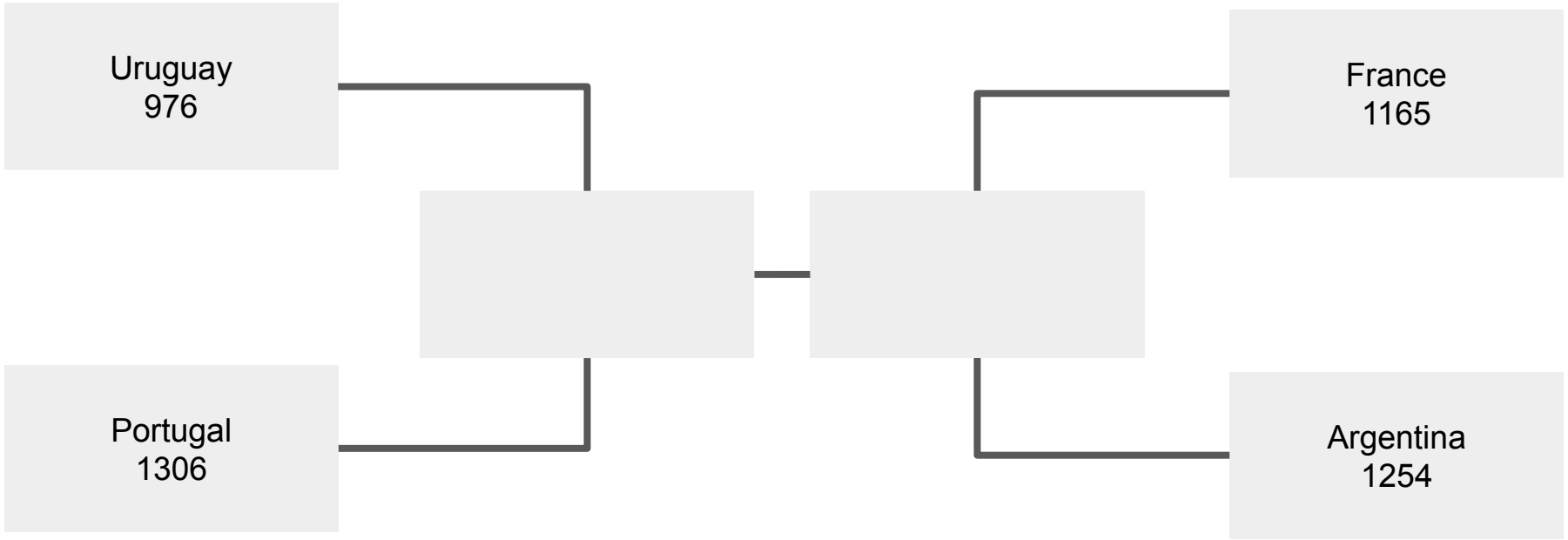
Lab

```
$ python tournament.py 2018m.csv
Belgium: 20.9% chance of winning
Brazil: 20.3% chance of winning
Portugal: 14.5% chance of winning
Spain: 13.6% chance of winning
Switzerland: 10.5% chance of winning
Argentina: 6.5% chance of winning
England: 3.7% chance of winning
France: 3.3% chance of winning
Denmark: 2.2% chance of winning
Croatia: 2.0% chance of winning
Colombia: 1.8% chance of winning
Sweden: 0.5% chance of winning
Uruguay: 0.1% chance of winning
Mexico: 0.1% chance of winning
```

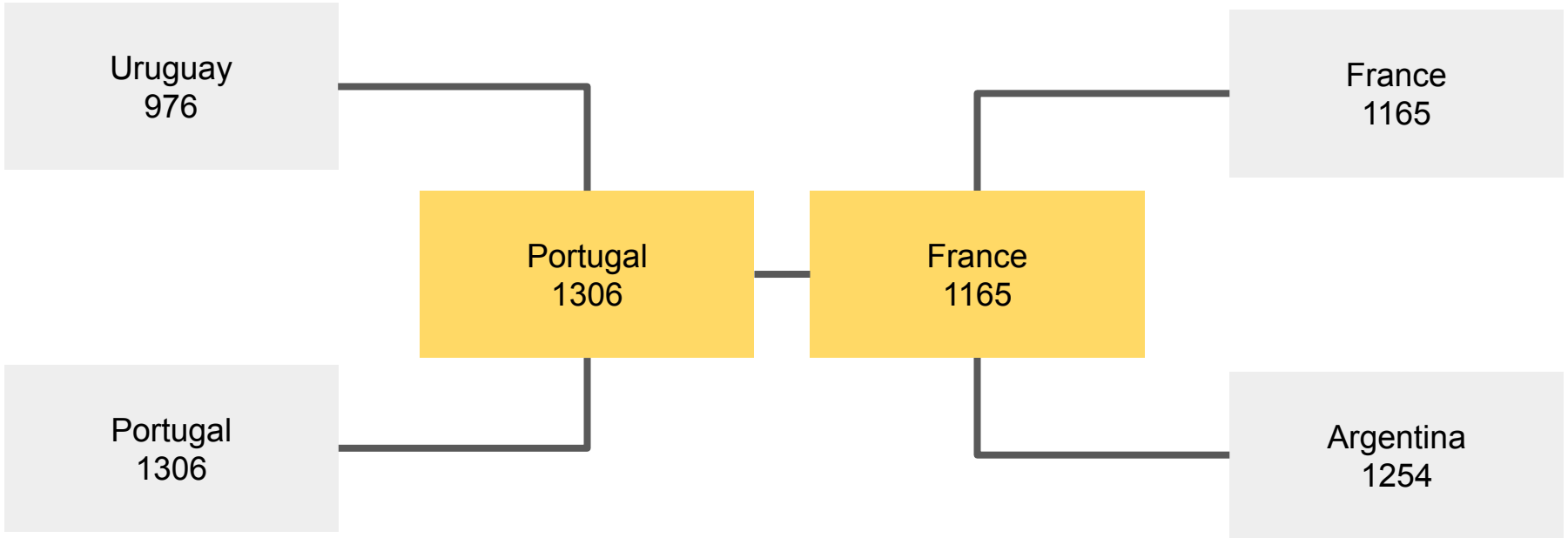
```
[{name: "Uruguay", rating: 976},
 {name: "Portugal", rating: 1306},
 {name: "France", rating: 1166},
 {name: "Argentina", rating: 1254}]
```


Uruguay
976
Portugal
1306
France
1165
Argentina
1254

simulate_round(teams)

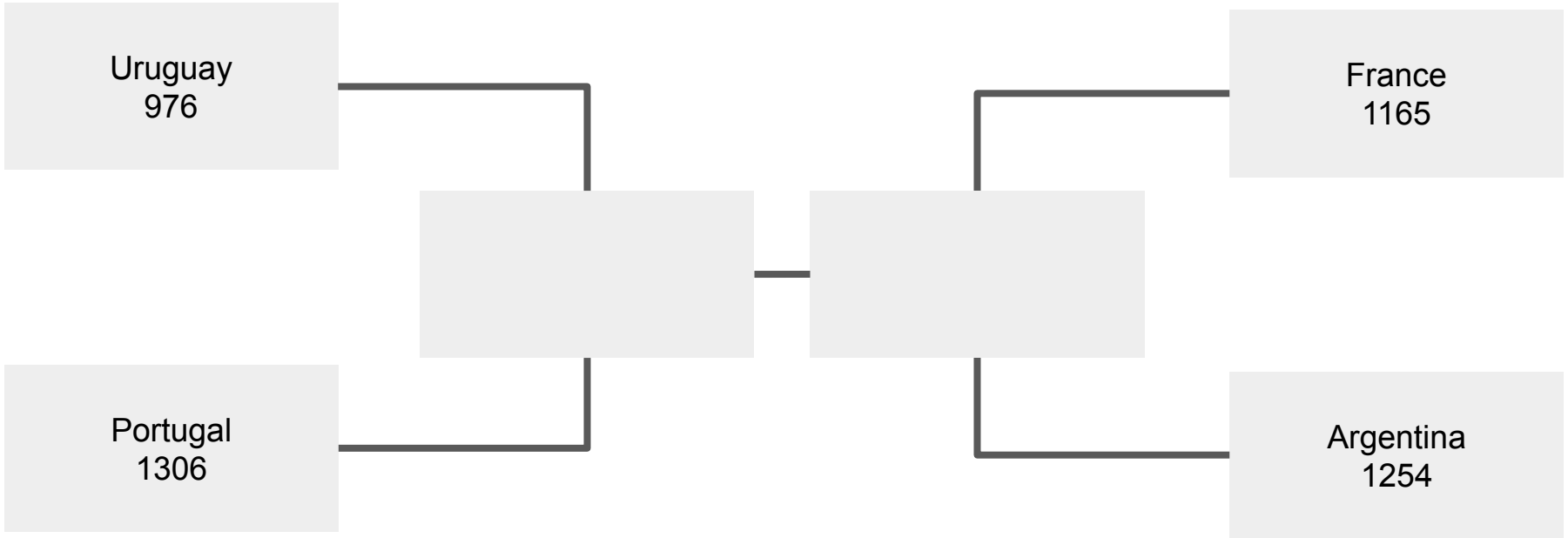


simulate_round(teams)

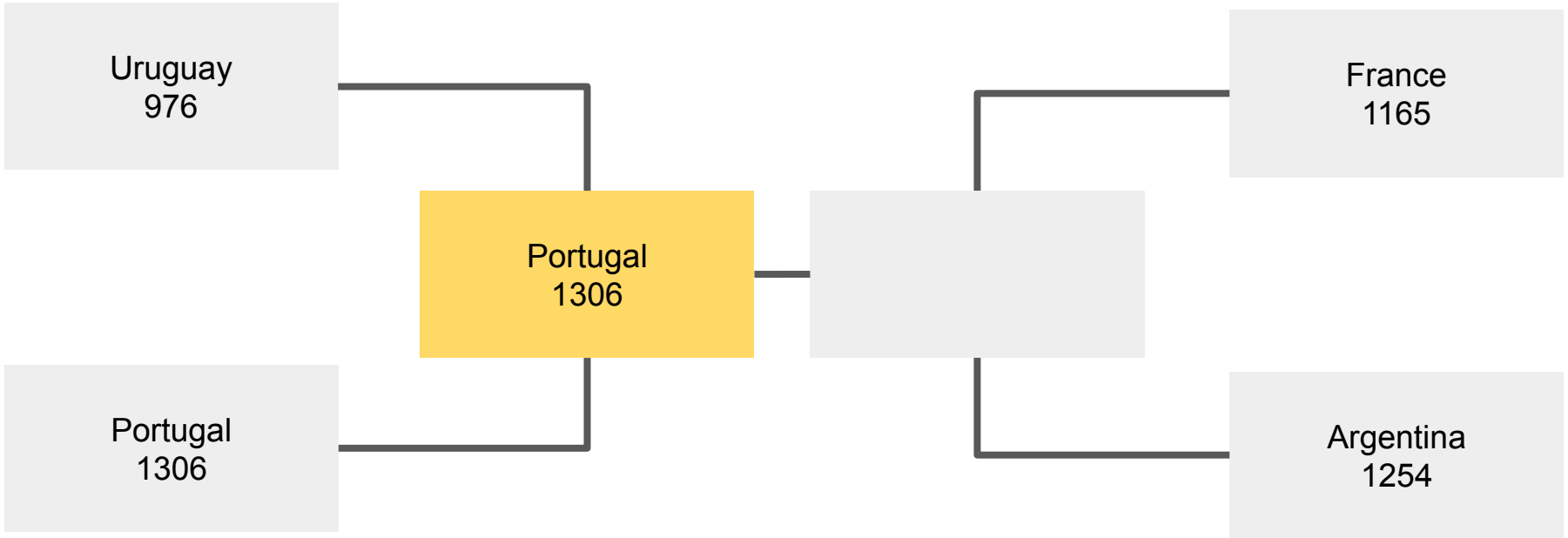


```
[{name: "Portugal", rating: 1306},
 {name: "France", rating: 1166}]
```

simulate_game(team1, team2)

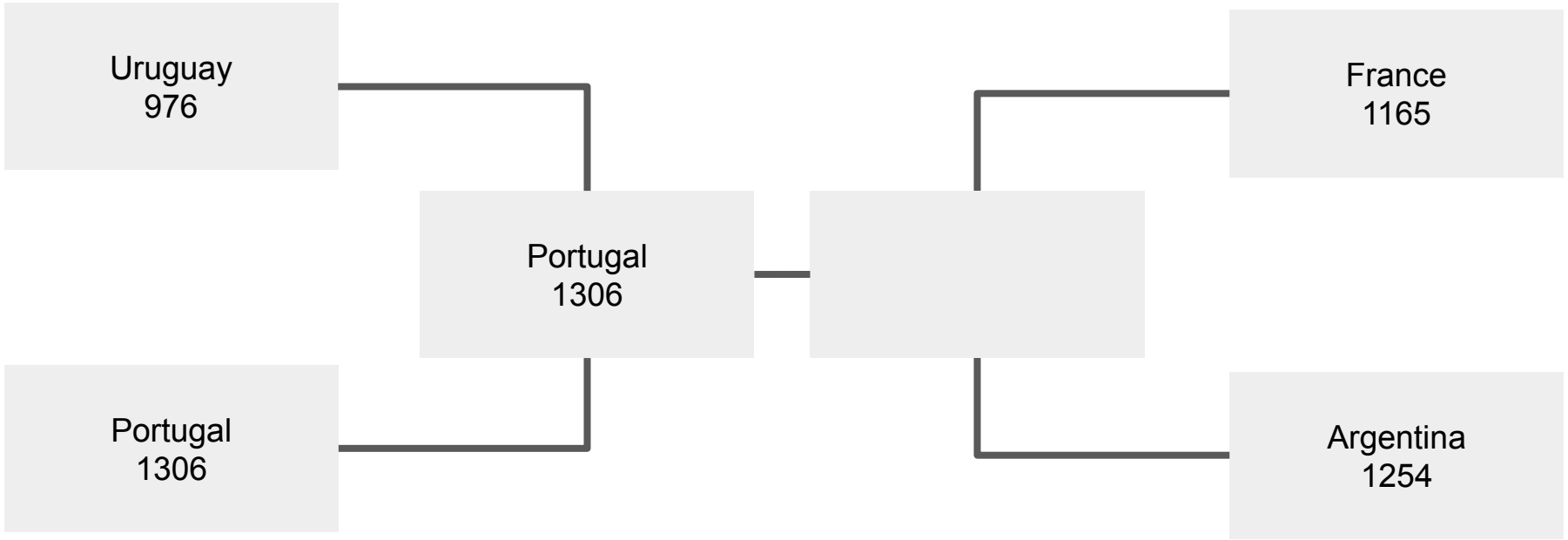


simulate_game(team1, team2)

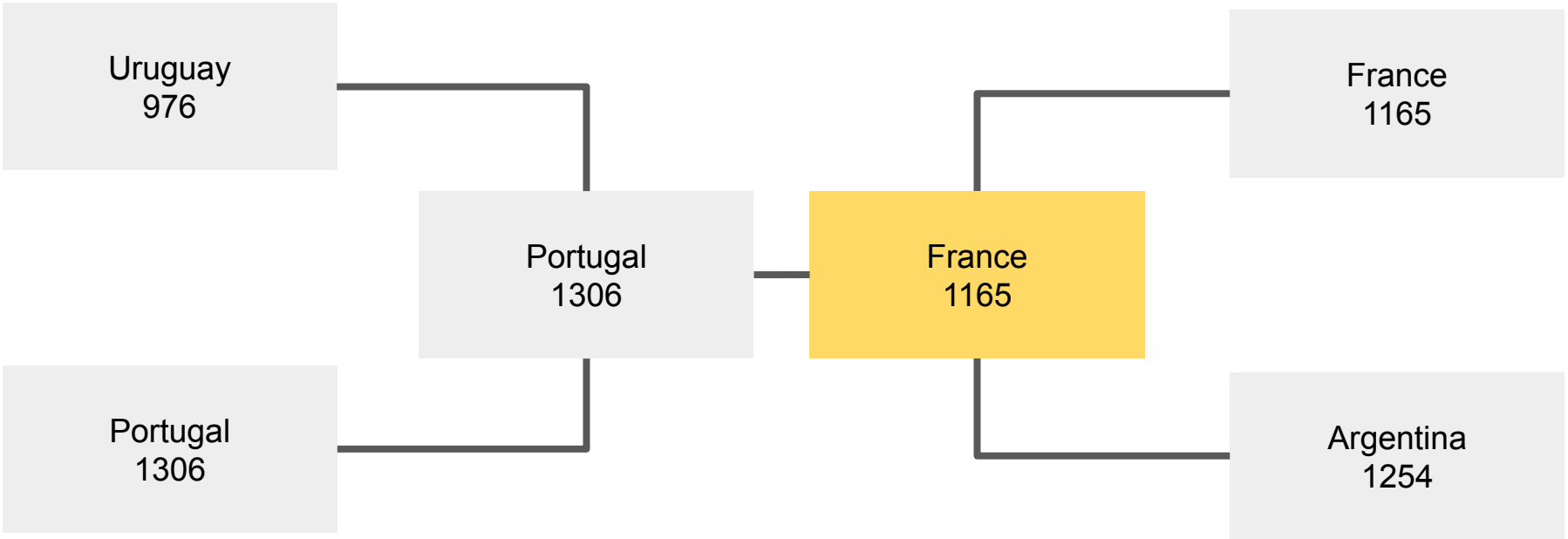


```
{name: "Portugal", rating: 1306}
```

simulate_game(team1, team2)

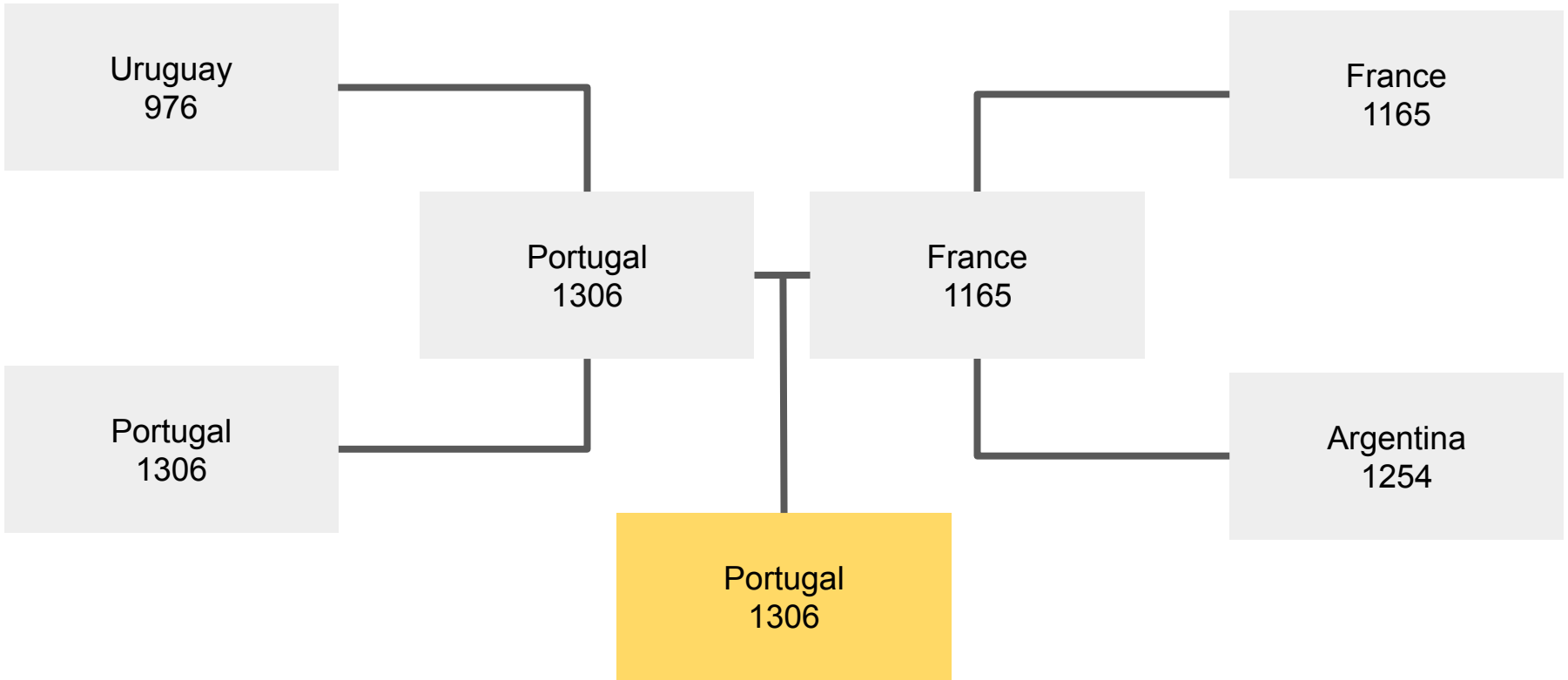


simulate_game(team1, team2)



```
{name: "France", rating: 1165}
```

simulate_round(teams)



TODOs

1. Load teams from CSV into a list, with each team represented as a dictionary.
2. Complete **simulate_tournament**, using **simulate_round**, returning the name of a tournament winner.
3. Run **simulate_tournament** N times, keeping track of how many simulations a team wins.

Tutorials

Office Hours

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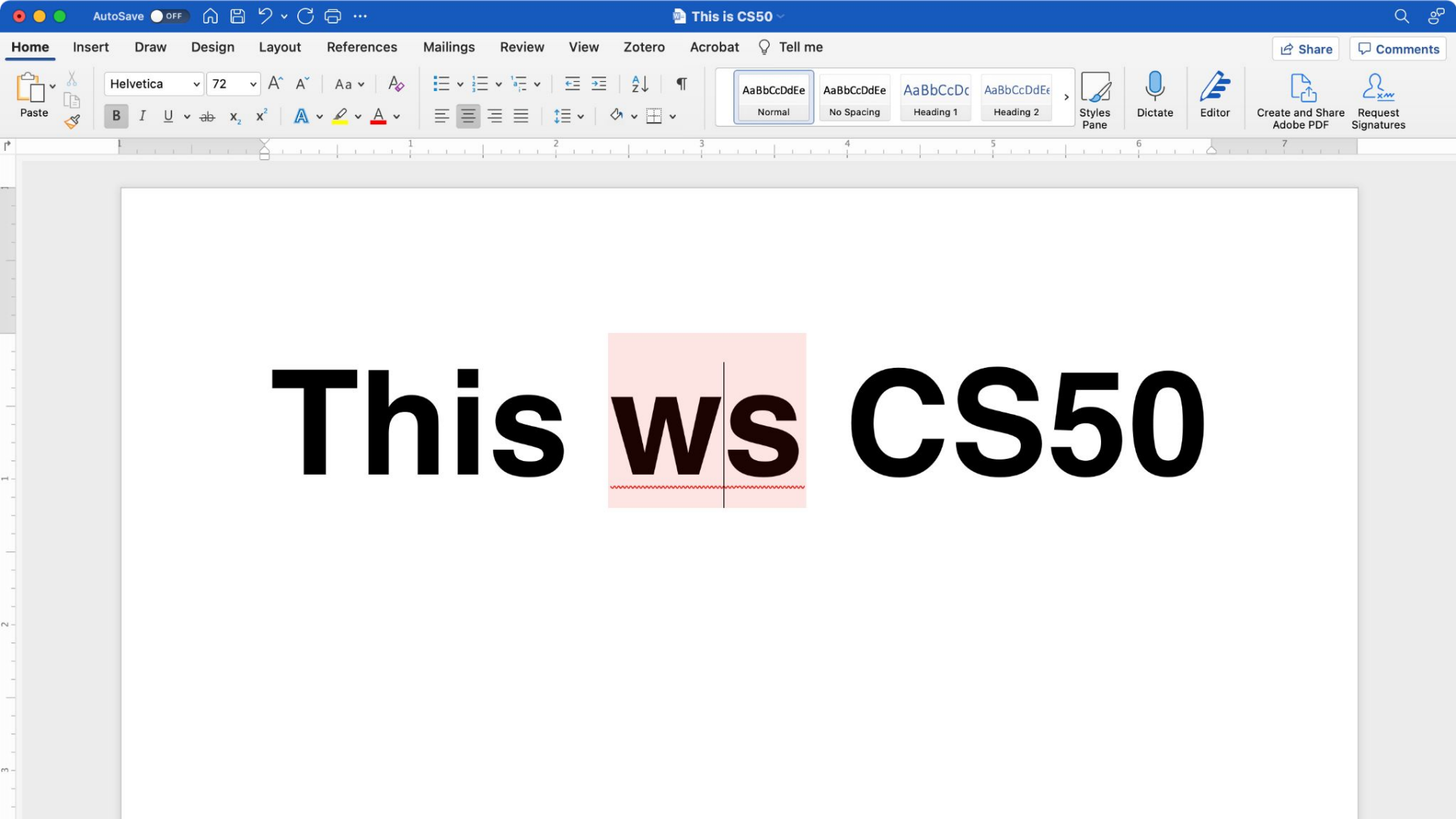
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AaBbCcDdEe No Spacing
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