Web Scraping and Social Media Scraping Project

Name and ID

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Short description of the topic and the web page

League of Legends (LoL) is a multiplayer online battle arena video game developed and published by Riot Games. Inspired by Defense of the Ancients, a custom map for Warcraft III, Riot's founders sought to develop a stand-alone game in the same genre. Since its release in October 2009, the game has been free-to-play and is monetized through purchasable character customization. The game is available for Microsoft Windows and macOS.

Image you are a League of Legends player. You have to pick up a champion from

the list as your role in the game. In order to have more chance to win during the game then you will need to have your own strategy. Therefore it will be helpful for you to know the win rate of the champion before you picking up.

In this case, the main purpose of our project is to scrap the win rate of the champion from the most famous game data resource website:
https://euw.op.gg/champion/statistics

In this website, which includes champion information and ranking data etc. We will mainly focus on the champion win rate.
For all 3 parts, we will use champion name 'sett', position 'top' as initially input, therefore the web will be like that :
https://euw.op.gg/champion/sett/statistics/top/matchup

Our goal is : Input one champion and its position, then the output will be this champion's matched-up win rate.

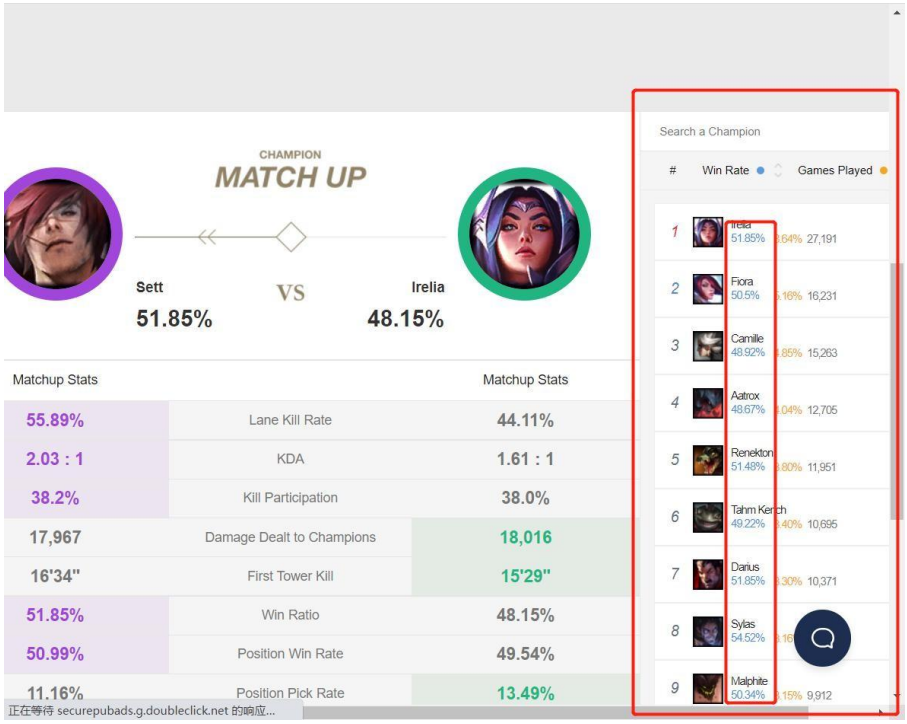
Avaliable Position list: {'top': 'top', 'jun': 'jungle', 'mid': 'mid', 'ad': 'bot', 'sup': 'support'}

Avaliable hero list: "Irelia "; "Trundle"; "Ezreal"; "Alistar"; "Amumu"; "Anivia"; "Annie"; "Ashe"; "ChoGath"; "Fiddlesticks"; "Gangplank" etc.

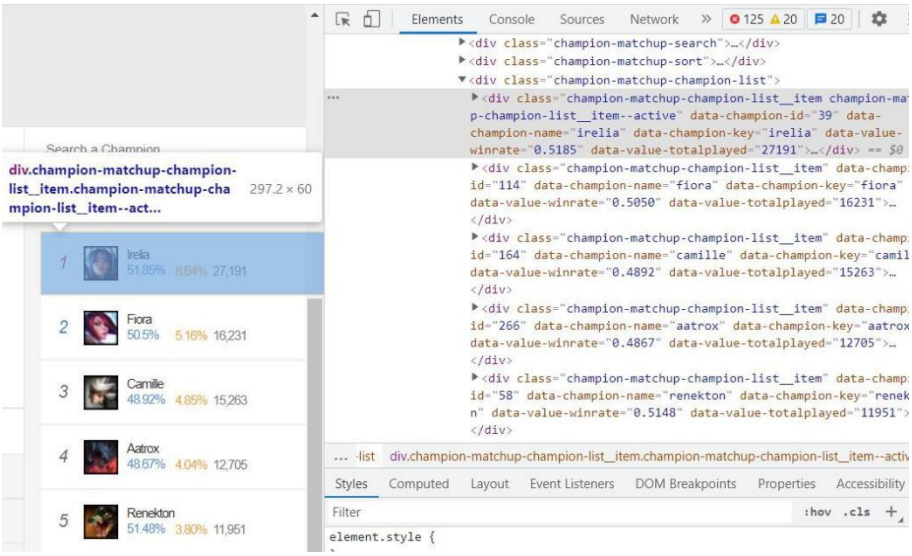
Description of our scraper mechanics and result

1. For beautiful soup part

There page is a half-dynamic page, we used BS to get the static part:



Check the web source code:



There are all in one div class, so first we find all this div class:

```
items = soup.find_all("div", class_="champion-matchup-champion-list__item")
```

Then get it one by one by using for loop:

```
for i in items:
    # The data-champion-name attribute value in the div is the hero name
    name = i['data-champion-name']
    # The data-value-winrate attribute in the div attribute is the winning rate of the hero
    rate =  float(i['data-value-winrate'])
    print(name, '{}%'.format(round(rate * 100, 2)))
```

2. For scrapy part

Our spider name is gamelol_spider, so we used the command to run :

scrapy crawl gamelol_spider -o gamelol.csv

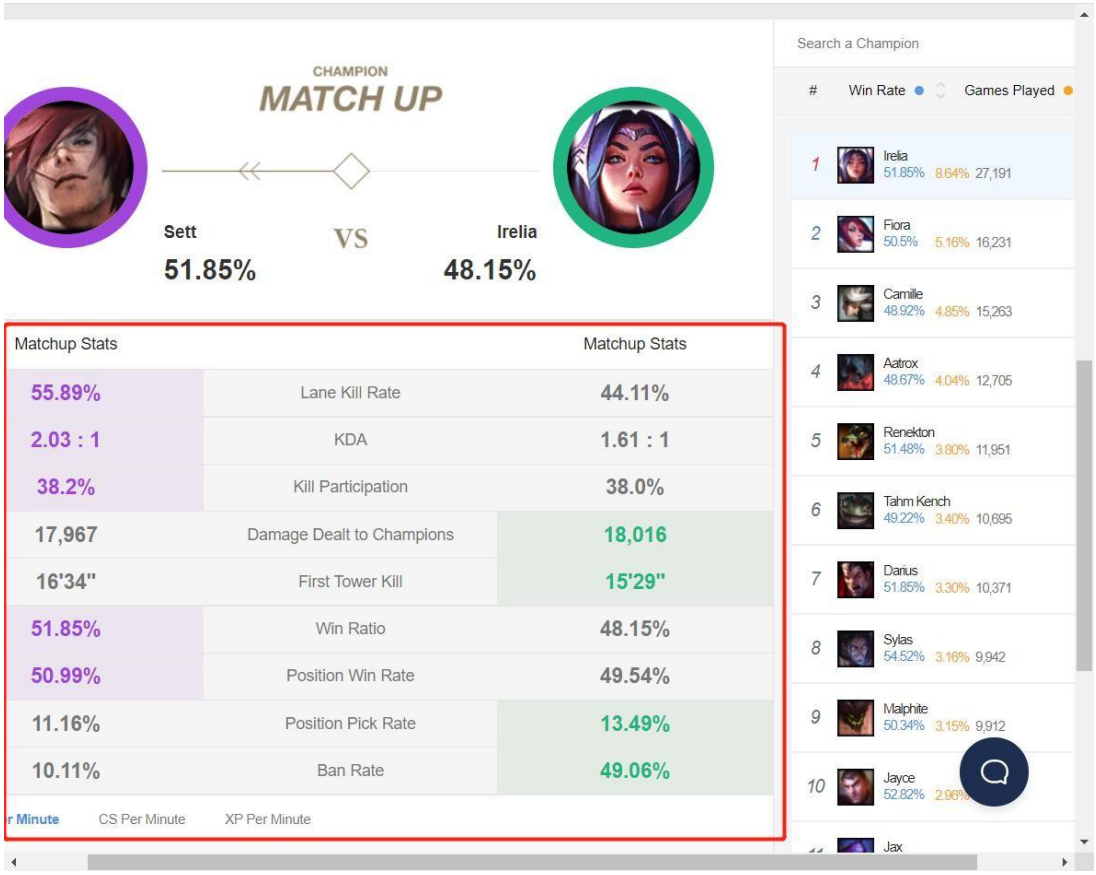
Just like the bs part, we use the same structure, there are 2 items in our spider.

```
class GamelolSpiderSpider(scrapy.Spider):
    name = 'gamelol_spider'
    allowed_domains = ['euw.op.gg']
    start_urls = ['http://euw.op.gg/champion/sett/statistics/top/matchup']
    def parse(self, response):
        hero_lists = response.xpath("//div[@class='champion-matchup-champion-list']/div")
        for i_item in hero_lists:
            gamelol_item=GamelolItem()
            gamelol_item['hero_name'] = i_item.xpath('.//@data-champion-name').extract()
            gamelol_item['win_rate'] =i_item.xpath('.//@data-value-winrate').extract()
            yield gamelol_item
```

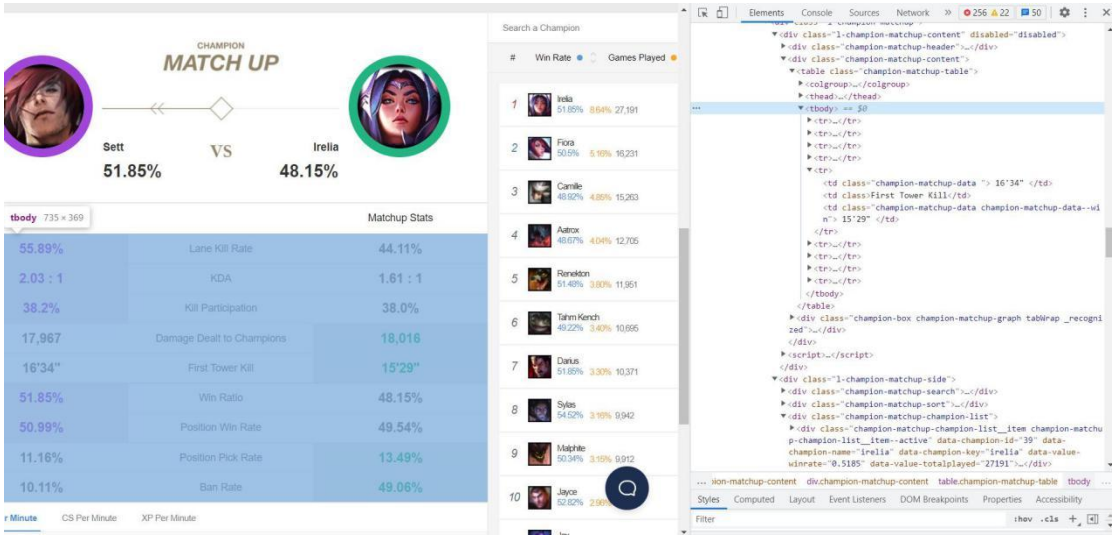
We could find the champion name and win rate by using i_item.xpath:

3. For selenium part

For this part, the website will open automatically to loop all champion. When it



loops, we will click the champion icon button to check the small window:



Check the website source code:

We could find all data: Lane kill Rate, KDA, Win ratio and so on. We could just take what we need.

So our selenium code idea is like that :

First find the button:

```
# find button
# loop all button
print('hero    win rate')
for button in buttons:
    # click button
    browser.execute_script("arguments[0].click();", button)
    # to find the left part of the table
    wait = ui.WebDriverWait(browser, wait_time)
    try:
        wait.until(
            lambda driver: driver.find_elements_by_xpath("//table[@class='champion-matchup-table']//td[1]"))
        col = browser.find_elements_by_xpath("//table[@class='champion-matchup-table']//td[1]")
    except Exception as error1:
        browser.execute_script("arguments[0].click();", button)
        col = browser.find_elements_by_xpath("//table[@class='champion-matchup-table']//td[1]")
        time.sleep(10)
```

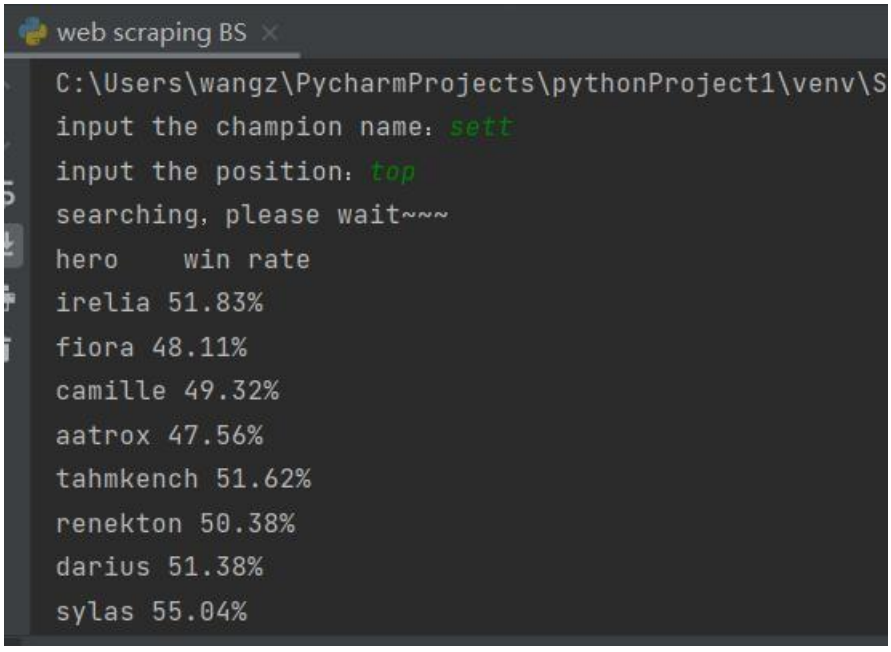
Then find the left part of the table. Loop all champion button.

Finally output the 5th line data: win ratio. (we could get more data if needed)

```
print(button.text, col[5].text)
```

The output data we get and

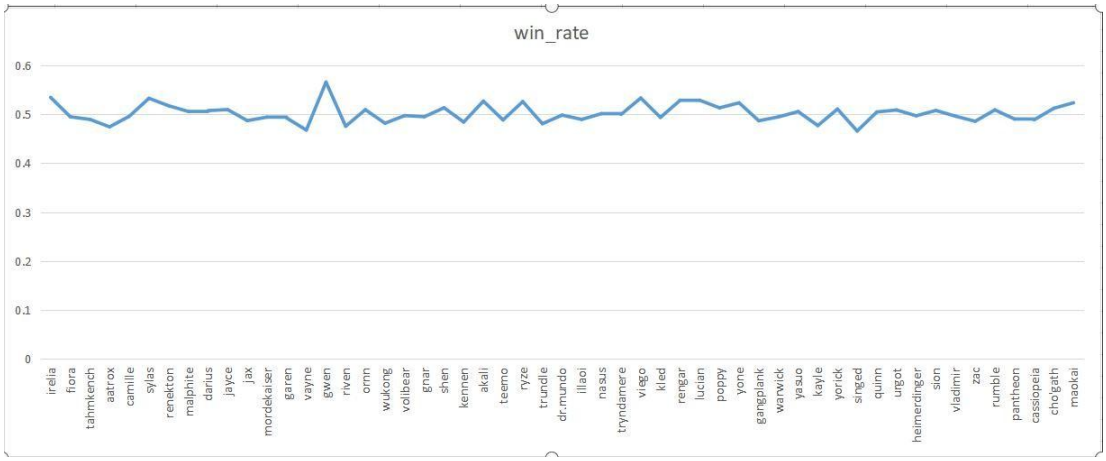
For one example champion’ s data, we get like below. Actually, we could



input more champions and get more data when we need.

	A	B	C	D	E	F	G	H	I
1	hero_name	win_rate							
2	irelia	0.5183							
3	fiora	0.4811							
4	camille	0.4932							
5	aatrox	0.4756							
6	tahmkench	0.5162							
7	renekton	0.5038							
8	darius	0.5138							
9	sylas	0.5504							
10	malphite	0.4935							
11	jayce	0.5481							
12	ornn	0.4836							
13	jax	0.4706							
14	mordekaise	0.4722							
15	vayne	0.4376							
16	riven	0.5135							
17	gnar	0.4685							
18	garen	0.4909							
19	kennen	0.4919							
20	trundle	0.5069							
21	shen	0.5322							
22	volibear	0.4807							
23	wukong	0.4993							
24	teemo	0.4868							
25	akali	0.5022							
26	ryze	0.5215							
27	gwen	0.5654							
28	illaoi	0.4763							
29	lucian	0.5227							
30	tryndamere	0.4751							

We could check max() win rate and order the win rate. Or plot them to see the trend.



So we could say that collected data can be used for further analysis if needed.

Task division

Zhaoshuai Wang : Selenium part , Scrapy part , descriptions part

Weida Pan: Beautiful soup part, some of Scrapy part, descriptions part