Análise Clima-Tempo

Semana 12 | Web Scraping, Regex e Pandas

Objetivo do miniprojeto

A partir de sua escolha de uma cidade qualquer, faça a raspagem de uma página e descubra a temperatura média da próxima semana nesta cidade. Utilize o serviço Tempo na sua solução. (Desejável incluir gráficos do Plotly).

Projeto-piloto

Aqui, importamos as bibliotecas que utilizaremos para fazer a raspagem e análise de dados.

In [53]:
```
import requests
from bs4 import BeautifulSoup
import pandas as pd
import numpy as np
import plotly.express as px
```

Seleção do serviço de clima-tempo

Apenas para a ilustração dos passos, vamos fazer a raspagem do National Weather Service, um serviço de climatologia norte-americano. A cidade indicada na `url` pela latitude e longitude aponta para a cidade de *Ciudad Juarez* (MX), na fronteira dos EUA.

> **Para que estes passos sejam aplicáveis, é importante verificar se o serviço de clima-tempo apresenta as informações utilizando HTML ou Javascript. Estes passos só servem para respostas em HTML.**

In [5]:
```
# Localizamos uma cidade usando o próprio serviço de clima-tempo
url = "https://forecast.weather.gov/MapClick.php?lat=31.604&lon=-106.2511#.Xo
```

Download da página. Uma resposta 200 indica que o retorno da página foi bem-sucedido.

In [6]:
```
# usamos a biblioteca requests para fazer o download da página web
page = requests.get( url )
page
```

Out[6]:
```
<Response [200]>
```

A biblioteca `BeautifulSoup` permite que manipulemos o HTML da página.

In [10]:
```
# criamos um objeto beautiful soup para poder fazer a raspagem dos dados
soup = BeautifulSoup(page.content, 'html.parser')
#soup
#print(soup.prettify())
```

Utilizando o modo de inspeção do navegador (ex: Chrome, Firefox, Safari...), identifique o elemento HTML em que deseja extrair as informações.

In [12]:
```
# após investigar, com um navegador web, a estrutura da página e localizar o
seven_day = soup.find(id="seven-day-forecast")
seven_day
```

Out[12]:
```
<div class="panel panel-default" id="seven-day-forecast">
```

```
<div class="panel-heading">
<b>Extended Forecast for</b>
<h2 class="panel-title">
                    2 Miles NW Clint TX </h2>
</div>
<div class="panel-body" id="seven-day-forecast-body">
<div id="seven-day-forecast-container"><ul class="list-unstyled" id="seven-day
-forecast-list"><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Today<br/><br/></p>
<p><img alt="Today: Sunny, with a high near 95. Calm wind becoming west southw
est 5 to 9 mph in the morning. " class="forecast-icon" src="newimages/medium/f
ew.png" title="Today: Sunny, with a high near 95. Calm wind becoming west sout
hwest 5 to 9 mph in the morning. "/></p><p class="short-desc">Sunny</p><p clas
s="temp temp-high">High: 95 °F</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Tonight<br/><br/></p>
<p><img alt="Tonight: Mostly clear, with a low around 62. West wind 5 to 10 mp
h becoming light and variable  after midnight. " class="forecast-icon" src="ne
wimages/medium/nfew.png" title="Tonight: Mostly clear, with a low around 62. W
est wind 5 to 10 mph becoming light and variable  after midnight. "/></p><p cl
ass="short-desc">Mostly Clear</p><p class="temp temp-low">Low: 62 °F</p></div>
</li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Wednesday<br/><br/></p>
<p><img alt="Wednesday: Mostly sunny, with a high near 96. South wind 5 to 15
mph becoming west southwest in the afternoon. " class="forecast-icon" src="new
images/medium/sct.png" title="Wednesday: Mostly sunny, with a high near 96. So
uth wind 5 to 15 mph becoming west southwest in the afternoon. "/></p><p class
="short-desc">Mostly Sunny</p><p class="temp temp-high">High: 96 °F</p></div>
</li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Wednesday<br/>Night</p>
<p><img alt="Wednesday Night: Partly cloudy, with a low around 64. West southw
est wind 5 to 15 mph. " class="forecast-icon" src="newimages/medium/nsct.png"
title="Wednesday Night: Partly cloudy, with a low around 64. West southwest wi
nd 5 to 15 mph. "/></p><p class="short-desc">Partly Cloudy</p><p class="temp t
emp-low">Low: 64 °F</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Thursday<br/><br/></p>
<p><img alt="Thursday: Mostly sunny, with a high near 96. Light south southwes
t wind becoming west 11 to 16 mph in the morning. " class="forecast-icon" src
="newimages/medium/sct.png" title="Thursday: Mostly sunny, with a high near 9
6. Light south southwest wind becoming west 11 to 16 mph in the morning. "/></
p><p class="short-desc">Mostly Sunny</p><p class="temp temp-high">High: 96 °F
</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Thursday<br/>Night</p>
<p><img alt="Thursday Night: Mostly clear, with a low around 64. West wind 11
to 16 mph decreasing to 5 to 10 mph after midnight. " class="forecast-icon" sr
c="newimages/medium/nfew.png" title="Thursday Night: Mostly clear, with a low
around 64. West wind 11 to 16 mph decreasing to 5 to 10 mph after midnight. "/
></p><p class="short-desc">Mostly Clear</p><p class="temp temp-low">Low: 64 °F
</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Friday<br/><br/></p>
<p><img alt="Friday: Sunny, with a high near 97. West wind 5 to 14 mph. " clas
s="forecast-icon" src="newimages/medium/few.png" title="Friday: Sunny, with a
high near 97. West wind 5 to 14 mph. "/></p><p class="short-desc">Sunny</p><p
class="temp temp-high">High: 97 °F</p></div></li><li class="forecast-tombston
e">
<div class="tombstone-container">
<p class="period-name">Friday<br/>Night</p>
<p><img alt="Friday Night: Clear, with a low around 64. West wind 7 to 14 mph
becoming south southwest after midnight. " class="forecast-icon" src="newimage
s/medium/nskc.png" title="Friday Night: Clear, with a low around 64. West wind
7 to 14 mph becoming south southwest after midnight. "/></p><p class="short-de
sc">Clear</p><p class="temp temp-low">Low: 64 °F</p></div></li><li class="fore
cast-tombstone">
```

```
<div class="tombstone-container">
<p class="period-name">Saturday<br/><br/></p>
<p><img alt="Saturday: Sunny, with a high near 100. South wind 7 to 13 mph bec
oming west in the afternoon. " class="forecast-icon" src="newimages/medium/fe
w.png" title="Saturday: Sunny, with a high near 100. South wind 7 to 13 mph be
coming west in the afternoon. "/></p><p class="short-desc">Sunny</p><p class
="temp temp-high">High: 100 °F</p></div></li></ul></div>
<script type="text/javascript">
// equalize forecast heights
$(function () {
        var maxh = 0;
        $(".forecast-tombstone .short-desc").each(function () {
                var h = $(this).height();
                if (h > maxh) { maxh = h; }
        });
        $(".forecast-tombstone .short-desc").height(maxh);
});
</script> </div>
</div>
```

Dentro do elemento HTML `seven-day-forecast` , pegamos todos os elementos da classe `tombstone-container` .

In [19]:
```
forecast_items = seven_day.find_all(class_="tombstone-container")
#forecast_items
```

O primeiro elemento da lista `forecast_items` representa a manhã de hoje.

In [20]:
```
morning = forecast_items[0]
morning
```

Out[20]:
```
<div class="tombstone-container">
<p class="period-name">Today<br/><br/></p>
<p><img alt="Today: Sunny, with a high near 95. Calm wind becoming west southw
est 5 to 9 mph in the morning. " class="forecast-icon" src="newimages/medium/f
ew.png" title="Today: Sunny, with a high near 95. Calm wind becoming west sout
hwest 5 to 9 mph in the morning. "/></p><p class="short-desc">Sunny</p><p clas
s="temp temp-high">High: 95 °F</p></div>
```

In [21]:
```
# Impressão na tela formatado
print(morning.prettify())
```

```
<div class="tombstone-container">
 <p class="period-name">
  Today
  <br/>
  <br/>
 </p>
 <p>
  <img alt="Today: Sunny, with a high near 95. Calm wind becoming west southwe
st 5 to 9 mph in the morning. " class="forecast-icon" src="newimages/medium/fe
w.png" title="Today: Sunny, with a high near 95. Calm wind becoming west south
west 5 to 9 mph in the morning. "/>
 </p>
 <p class="short-desc">
  Sunny
 </p>
 <p class="temp temp-high">
  High: 95 °F
 </p>
</div>
```

O segundo elemento da lista `forecast_items` representa o próximo período.

In [22]:
```
afternoon = forecast_items[1]
print(afternoon.prettify())
```

```
<div class="tombstone-container">
```

```
 <p class="period-name">
  Tonight
  <br/>
  <br/>
 </p>
 <p>
  <img alt="Tonight: Mostly clear, with a low around 62. West wind 5 to 10 mph
becoming light and variable  after midnight. " class="forecast-icon" src="newi
mages/medium/nfew.png" title="Tonight: Mostly clear, with a low around 62. Wes
t wind 5 to 10 mph becoming light and variable  after midnight. "/>
 </p>
 <p class="short-desc">
  Mostly Clear
 </p>
 <p class="temp temp-low">
  Low: 62 °F
 </p>
</div>
```

Extraindo informações da página

A etiqueta representada pela variável `morning` contém toda a informação de que precisamos:

- O nome do item da previsão - neste caso, Morning
- A descrição das condições - está localizado no título da propriedade de img
- Uma descrição breve das condições - neste caso Patchy Blowing Dust then Cloudy
- A temperatura mínima - neste caso 81 °F

In [30]:
```
morning
```

Out[30]:
```
<div class="tombstone-container">
<p class="period-name">Today<br/><br/></p>
<p><img alt="Today: Sunny, with a high near 95. Calm wind becoming west southw
est 5 to 9 mph in the morning. " class="forecast-icon" src="newimages/medium/f
ew.png" title="Today: Sunny, with a high near 95. Calm wind becoming west sout
hwest 5 to 9 mph in the morning. "/></p><p class="short-desc">Sunny</p><p clas
s="temp temp-high">High: 95 °F</p></div>
```

In [29]:
```
#morning.find(class_="period-name").get_text()
```

In [27]:
```
period = morning.find(class_="period-name").get_text()
period
```

Out[27]:
```
'Today'
```

In [31]:
```
short_desc = morning.find(class_="short-desc").get_text()
short_desc
```

Out[31]:
```
'Sunny'
```

In [32]:
```
temp = morning.find(class_="temp").get_text()
temp
```

Out[32]:
```
'High: 95 °F'
```

Uma opção seria pegar as informações contidas na tag `<img>` .

In [34]:
```
img = morning.find("img")
img
```

Out[34]:
```
<img alt="Today: Sunny, with a high near 95. Calm wind becoming west southwest
5 to 9 mph in the morning. " class="forecast-icon" src="newimages/medium/few.p
ng" title="Today: Sunny, with a high near 95. Calm wind becoming west southwes
t 5 to 9 mph in the morning. "/>
```

In [35]:
```
# Obtem o título (title) da descrição da img
desc = img['title']
desc
```

Out[35]:
```
'Today: Sunny, with a high near 95. Calm wind becoming west southwest 5 to 9 m
ph in the morning. '
```

Extraindo toda a informação da página

Agora que sabemos como extrair a informação de um elemento, vamos obter todos os outros.

In [37]:
```
seven_day
```

Out[37]:
```
<div class="panel panel-default" id="seven-day-forecast">
<div class="panel-heading">
<b>Extended Forecast for</b>
<h2 class="panel-title">
                    2 Miles NW Clint TX </h2>
</div>
<div class="panel-body" id="seven-day-forecast-body">
<div id="seven-day-forecast-container"><ul class="list-unstyled" id="seven-day
-forecast-list"><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Today<br/><br/></p>
<p><img alt="Today: Sunny, with a high near 95. Calm wind becoming west southw
est 5 to 9 mph in the morning. " class="forecast-icon" src="newimages/medium/f
ew.png" title="Today: Sunny, with a high near 95. Calm wind becoming west sout
hwest 5 to 9 mph in the morning. "/></p><p class="short-desc">Sunny</p><p clas
s="temp temp-high">High: 95 °F</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Tonight<br/><br/></p>
<p><img alt="Tonight: Mostly clear, with a low around 62. West wind 5 to 10 mp
h becoming light and variable  after midnight. " class="forecast-icon" src="ne
wimages/medium/nfew.png" title="Tonight: Mostly clear, with a low around 62. W
est wind 5 to 10 mph becoming light and variable  after midnight. "/></p><p cl
ass="short-desc">Mostly Clear</p><p class="temp temp-low">Low: 62 °F</p></div>
</li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Wednesday<br/><br/></p>
<p><img alt="Wednesday: Mostly sunny, with a high near 96. South wind 5 to 15
mph becoming west southwest in the afternoon. " class="forecast-icon" src="new
images/medium/sct.png" title="Wednesday: Mostly sunny, with a high near 96. So
uth wind 5 to 15 mph becoming west southwest in the afternoon. "/></p><p class
="short-desc">Mostly Sunny</p><p class="temp temp-high">High: 96 °F</p></div>
</li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Wednesday<br/>Night</p>
<p><img alt="Wednesday Night: Partly cloudy, with a low around 64. West southw
est wind 5 to 15 mph. " class="forecast-icon" src="newimages/medium/nsct.png"
title="Wednesday Night: Partly cloudy, with a low around 64. West southwest wi
nd 5 to 15 mph. "/></p><p class="short-desc">Partly Cloudy</p><p class="temp t
emp-low">Low: 64 °F</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Thursday<br/><br/></p>
<p><img alt="Thursday: Mostly sunny, with a high near 96. Light south southwes
t wind becoming west 11 to 16 mph in the morning. " class="forecast-icon" src
="newimages/medium/sct.png" title="Thursday: Mostly sunny, with a high near 9
6. Light south southwest wind becoming west 11 to 16 mph in the morning. "/></
p><p class="short-desc">Mostly Sunny</p><p class="temp temp-high">High: 96 °F
</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Thursday<br/>Night</p>
```

```
<p><img alt="Thursday Night: Mostly clear, with a low around 64. West wind 11
to 16 mph decreasing to 5 to 10 mph after midnight. " class="forecast-icon" sr
c="newimages/medium/nfew.png" title="Thursday Night: Mostly clear, with a low
around 64. West wind 11 to 16 mph decreasing to 5 to 10 mph after midnight. "/
></p><p class="short-desc">Mostly Clear</p><p class="temp temp-low">Low: 64 °F
</p></div></li><li class="forecast-tombstone">
<div class="tombstone-container">
<p class="period-name">Friday<br/><br/></p>
<p><img alt="Friday: Sunny, with a high near 97. West wind 5 to 14 mph. " clas
s="forecast-icon" src="newimages/medium/few.png" title="Friday: Sunny, with a
high near 97. West wind 5 to 14 mph. "/></p><p class="short-desc">Sunny</p><p
class="temp temp-high">High: 97 °F</p></div></li><li class="forecast-tombston
e">
<div class="tombstone-container">
<p class="period-name">Friday<br/>Night</p>
<p><img alt="Friday Night: Clear, with a low around 64. West wind 7 to 14 mph
becoming south southwest after midnight. " class="forecast-icon" src="newimage
s/medium/nskc.png" title="Friday Night: Clear, with a low around 64. West wind
7 to 14 mph becoming south southwest after midnight. "/></p><p class="short-de
sc">Clear</p><p class="temp temp-low">Low: 64 °F</p></div></li><li class="fore
cast-tombstone">
<div class="tombstone-container">
<p class="period-name">Saturday<br/><br/></p>
<p><img alt="Saturday: Sunny, with a high near 100. South wind 7 to 13 mph bec
oming west in the afternoon. " class="forecast-icon" src="newimages/medium/fe
w.png" title="Saturday: Sunny, with a high near 100. South wind 7 to 13 mph be
coming west in the afternoon. "/></p><p class="short-desc">Sunny</p><p class
="temp temp-high">High: 100 °F</p></div></li></ul></div>
<script type="text/javascript">
// equalize forecast heights
$(function () {
        var maxh = 0;
        $(".forecast-tombstone .short-desc").each(function () {
                var h = $(this).height();
                if (h > maxh) { maxh = h; }
        });
        $(".forecast-tombstone .short-desc").height(maxh);
});
</script> </div>
</div>
```

```
<div class="tombstone-container">
    <p class="period-name">

    </p>
</div>
<div class="tombstone-container">
    <p class="period-name">

    </p>
</div>
<div class="tombstone-container">
    <p class="period-name">

    </p>
</div>
```

In [36]:
```
seven_day.select(".tombstone-container .period-name")
```

Out[36]:
```
[<p class="period-name">Today<br/><br/></p>,
 <p class="period-name">Tonight<br/><br/></p>,
 <p class="period-name">Wednesday<br/><br/></p>,
 <p class="period-name">Wednesday<br/>Night</p>,
 <p class="period-name">Thursday<br/><br/></p>,
 <p class="period-name">Thursday<br/>Night</p>,
 <p class="period-name">Friday<br/><br/></p>,
```

```
<p class="period-name">Friday<br/>Night</p>,
<p class="period-name">Saturday<br/><br/></p>]
```

In [41]:
```
# Usa o seletor CSS para extrair todos os period-name dentro de tombstone-con
period_tags = seven_day.select(".tombstone-container .period-name")

# Usando list comprehensions (não vimos ainda)
#periods = [pt.get_text() for pt in period_tags]

periods = []
for pt in period_tags:
    periods.append(pt.get_text())
periods
```

Out[41]:
```
['Today',
 'Tonight',
 'Wednesday',
 'WednesdayNight',
 'Thursday',
 'ThursdayNight',
 'Friday',
 'FridayNight',
 'Saturday']
```

Vamos usar a mesma técnica para os outros três campos.

In [42]:
```
# Usando list comprehensions (não vimos ainda)
#short_descs = [sd.get_text() for sd in seven_day.select(".tombstone-containe

short_descs_tags = seven_day.select(".tombstone-container .short-desc")
short_descs = []
for sd in short_descs_tags:
    short_descs.append(sd.get_text())
short_descs
```

Out[42]:
```
['Sunny',
 'Mostly Clear',
 'Mostly Sunny',
 'Partly Cloudy',
 'Mostly Sunny',
 'Mostly Clear',
 'Sunny',
 'Clear',
 'Sunny']
```

In [43]:
```
# Usando list comprehensions (não vimos ainda)
# temps = [t.get_text() for t in seven_day.select(".tombstone-container .temp

temps_tags = seven_day.select(".tombstone-container .temp")
temps = []
for tp in temps_tags:
    temps.append(tp.get_text())
temps
```

Out[43]:
```
['High: 95 °F',
 'Low: 62 °F',
 'High: 96 °F',
 'Low: 64 °F',
 'High: 96 °F',
 'Low: 64 °F',
 'High: 97 °F',
 'Low: 64 °F',
 'High: 100 °F']
```

In [45]:
```
# Usando list comprehensions (não vimos ainda)
# descs = [d["title"] for d in seven_day.select(".tombstone-container img")]
```

```
descs_tags = seven_day.select(".tombstone-container img")
descs = []
for d in descs_tags:
    descs.append(d['title'])
descs
```

Out[45]:
```
['Today: Sunny, with a high near 95. Calm wind becoming west southwest 5 to 9
mph in the morning. ',
 'Tonight: Mostly clear, with a low around 62. West wind 5 to 10 mph becoming
light and variable  after midnight. ',
 'Wednesday: Mostly sunny, with a high near 96. South wind 5 to 15 mph becomin
g west southwest in the afternoon. ',
 'Wednesday Night: Partly cloudy, with a low around 64. West southwest wind 5
to 15 mph. ',
 'Thursday: Mostly sunny, with a high near 96. Light south southwest wind beco
ming west 11 to 16 mph in the morning. ',
 'Thursday Night: Mostly clear, with a low around 64. West wind 11 to 16 mph d
ecreasing to 5 to 10 mph after midnight. ',
 'Friday: Sunny, with a high near 97. West wind 5 to 14 mph. ',
 'Friday Night: Clear, with a low around 64. West wind 7 to 14 mph becoming so
uth southwest after midnight. ',
 'Saturday: Sunny, with a high near 100. South wind 7 to 13 mph becoming west
in the afternoon. ']
```

Pandas

Um DataFrame é um objeto que pode armazenar dados tabulares, facilitando a análise.

Vamos instanciar uma classe DataFrame e passar a lista de itens que temos. Vamos passar como parte de um dicionário. Cada chave do dicionário irá virar uma coluna no DataFrame e os elementos da lista irão se tornar os valores das colunas.

In [46]:
```
import pandas as pd
df_clima_tempo = pd.DataFrame({
    "Período": periods,
    "Minidescrição": short_descs,
    "Temperatura": temps,
    "Descrição":descs
})
df_clima_tempo
```

Out[46]:

	Período	Minidescrição	Temperatura	Descrição
0	Today	Sunny	High: 95 °F	Today: Sunny, with a high near 95. Calm wind b...
1	Tonight	Mostly Clear	Low: 62 °F	Tonight: Mostly clear, with a low around 62. W...
2	Wednesday	Mostly Sunny	High: 96 °F	Wednesday: Mostly sunny, with a high near 96. ...
3	WednesdayNight	Partly Cloudy	Low: 64 °F	Wednesday Night: Partly cloudy, with a low aro...
4	Thursday	Mostly Sunny	High: 96 °F	Thursday: Mostly sunny, with a high near 96. L...
5	ThursdayNight	Mostly Clear	Low: 64 °F	Thursday Night: Mostly clear, with a low aroun...
6	Friday	Sunny	High: 97 °F	Friday: Sunny, with a high near 97. West wind ...
7	FridayNight	Clear	Low: 64 °F	Friday Night: Clear, with a low around 64. Wes...

	Período	Minidescrição	Temperatura	Descrição
8	Saturday	Sunny	High: 100 °F	Saturday: Sunny, with a high near 100. South w...

Com a tabela anterior, podemos fazer a análise do clima em uma cidade, incluindo as brasileiras.

Desafio

Podemos utilizar expressões regulares e o método Series.str.extract para extrair o valor numérico das temperaturas. Esta página oferece uma introdução sobre o tópico.

In [47]:
```
df_clima_tempo["Temperatura"]
```

Out[47]:
```
0     High: 95 °F
1      Low: 62 °F
2     High: 96 °F
3      Low: 64 °F
4     High: 96 °F
5      Low: 64 °F
6     High: 97 °F
7      Low: 64 °F
8    High: 100 °F
Name: Temperatura, dtype: object
```

Utilizamos o método Series.str.extract, que utiliza expressões regulares para extrair padrões do texto.

In [48]:
```
# Neste caso, a expressão regular para extrair os digitos da string
temp_nums = df_clima_tempo["Temperatura"].str.extract(r"(\d+)", expand=False)
temp_nums
```

Out[48]:
```
0     95
1     62
2     96
3     64
4     96
5     64
6     97
7     64
8    100
Name: Temperatura, dtype: object
```

In [23]:
```
# O tipo resultante de Series.str.extract
type(temp_nums)
```

Out[23]:
```
pandas.core.series.Series
```

In [50]:
```
# Converte os valores da coluna temp_num em inteiro
df_clima_tempo["Temperatura"] = temp_nums.astype('int')
df_clima_tempo["Temperatura"]
```

Out[50]:
```
0     95
1     62
2     96
3     64
4     96
5     64
6     97
7     64
8    100
Name: Temperatura, dtype: int64
```

In [51]:
```
df_clima_tempo
```

Out[51]:

	Período	Minidescrição	Temperatura	Descrição
0	Today	Sunny	95	Today: Sunny, with a high near 95. Calm wind b...
1	Tonight	Mostly Clear	62	Tonight: Mostly clear, with a low around 62. W...
2	Wednesday	Mostly Sunny	96	Wednesday: Mostly sunny, with a high near 96. ...
3	WednesdayNight	Partly Cloudy	64	Wednesday Night: Partly cloudy, with a low aro...
4	Thursday	Mostly Sunny	96	Thursday: Mostly sunny, with a high near 96. L...
5	ThursdayNight	Mostly Clear	64	Thursday Night: Mostly clear, with a low aroun...
6	Friday	Sunny	97	Friday: Sunny, with a high near 97. West wind ...
7	FridayNight	Clear	64	Friday Night: Clear, with a low around 64. Wes...
8	Saturday	Sunny	100	Saturday: Sunny, with a high near 100. South w...

Calcula a média para as temperaturas altas e baixas.

In [52]:
```
df_clima_tempo["Temperatura"].mean()
```

Out[52]:
```
82.0
```