Welcome to Colab!

If you're already familiar with Colab, check out this video to learn about interactive tables, the
executed code history view, and the command palette.

You can import your own data into Colab notebooks from your Google Drive account, including
from spreadsheets, as well as from Github and many other sources. To learn more about
importing data, and how Colab can be used for data science, see the links below under Working
with Data.

```
pip install billboard.py
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/
Collecting billboard.py
  Downloading billboard.py-7.0.0-py2.py3-none-any.whl (7.0 kB)
Requirement already satisfied: requests>=2.2.1 in /usr/local/lib/python3.7/dist-pack
Requirement already satisfied: beautifulsoup4>=4.4.1 in /usr/local/lib/python3.7/dis
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.7/dist-pa
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.7/dist-package
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.7/dist-p
Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 in /usr/local
Installing collected packages: billboard.py
Successfully installed billboard.py-7.0.0
```

```
import billboard
chart = billboard.ChartData('hot-100')
chart.title
```

```
'Billboard Hot 100'
```

```
song = chart[0]
print(song)
song.title
song.artist
song.weeks
```

```
        'Super Freaky Girl' by Nicki Minaj
        1


print(chart)

        hot-100 chart from 2022-08-27
        -----------------------------
        1. 'Super Freaky Girl' by Nicki Minaj
        2. 'As It Was' by Harry Styles
        3. 'About Damn Time' by Lizzo
        4. 'Break My Soul' by Beyonce
        5. 'Running Up That Hill (A Deal With God)' by Kate Bush
        6. 'Bad Habit' by Steve Lacy
        7. 'Sunroof' by Nicky Youre & dazy
        8. 'Wait For U' by Future Featuring Drake & Tems
        9. 'Me Porto Bonito' by Bad Bunny & Chencho Corleone
        10. 'I Like You (A Happier Song)' by Post Malone Featuring Doja Cat
        11. 'Late Night Talking' by Harry Styles
        12. 'First Class' by Jack Harlow
        13. 'Heat Waves' by Glass Animals
        14. 'The Kind Of Love We Make' by Luke Combs
        15. 'You Proof' by Morgan Wallen
        16. 'Titi Me Pregunto' by Bad Bunny
        17. 'I Ain't Worried' by OneRepublic
        18. 'She Had Me At Heads Carolina' by Cole Swindell
        19. 'Wasted On You' by Morgan Wallen
        20. 'Stay' by The Kid LAROI & Justin Bieber
        21. 'Alone' by Rod Wave
        22. 'Jimmy Cooks' by Drake Featuring 21 Savage
        23. 'Staying Alive' by DJ Khaled Featuring Drake & Lil Baby
        24. 'Big Energy' by Latto
        25. 'Vegas' by Doja Cat
        26. 'Moscow Mule' by Bad Bunny
        27. 'Glimpse Of Us' by Joji
        28. 'Ghost' by Justin Bieber
        29. 'Like I Love Country Music' by Kane Brown
        30. 'Shivers' by Ed Sheeran
        31. 'Fall In Love' by Bailey Zimmerman
        32. '5 Foot 9' by Tyler Hubbard
        33. 'Numb Little Bug' by Em Beihold
        34. 'In A Minute' by Lil Baby
        35. 'Yungen' by Rod Wave Featuring Jack Harlow
        36. 'Last Night Lonely' by Jon Pardi
        37. 'Cold Heart (PNAU Remix)' by Elton John & Dua Lipa
        38. 'Efecto' by Bad Bunny
        39. 'Rock And A Hard Place' by Bailey Zimmerman
        40. 'Left And Right' by Charlie Puth Featuring Jung Kook
        41. 'Sticky' by Drake
        42. 'Something In The Orange' by Zach Bryan
        43. 'Provenza' by Karol G
        44. 'Get Into It (Yuh)' by Doja Cat
        45. 'Betty (Get Money)' by Yung Gravy
        46. 'Son Of A Sinner' by Jelly Roll
        47. 'Numb' by Marshmello & Khalid
        48. 'Never Get Over Me' by Rod Wave
        49. 'Sweetest Pie' by Megan Thee Stallion & Dua Lipa
        50. 'Super Gremlin' by Kodak Black
        51. 'Sweet Little Lies' by Rod Wave
        52. 'Take My Name' by Parmalee
```

```
53. 'F.N.F. (Let's Go)' by Hitkidd & GloRilla
54. 'Hot Shit' by Cardi B, Ye & Lil Durk
55. 'Party' by Bad Bunny & Rauw Alejandro
56. 'Damn Strait' by Scotty McCreery
```

```python
def getData(type, data, artists, titles, year=None, date=None, label=None):
    if date==None:
        HotChart = billboard.ChartData(type, year=year)
    else:
        HotChart = billboard.ChartData(type, date=date)
    for hot in HotChart:
        # To collect the name of artists that exists in the artist's list and choose anoth
        # This is to avoid repeat songs and enter artist doesn't exist in artists list.
        if hot.title not in titles and hot.artist in artists:
                titles.append(hot.title)
                data.append({'Artist': hot.artist, 'Title': hot.title, 'Label': label})

    return data, titles
```

```python
data = []
titles = []
year = 2021
for i in range(2022-2016):
    data, titles = getData('Hot-100-Songs', data, artists, titles, year, label=1) # popula
    year -= 1


print(len(data))
print(len(artists))
print(len(titles))
```

```
    0
    0
    0
```

```python
df = pd.DataFrame(data)
df
```

```
    ---------------------------------------------------------------------------
    NameError                                 Traceback (most recent call last)
    <ipython-input-21-d1192c0ddc6b> in <module>
    ----> 1 df = pd.DataFrame(data)
          2 df

    NameError: name 'pd' is not defined
```

SEARCH STACK OVERFLOW

```python
dates = ['2021-12-01','2021-11-01','2021-10-01','2021-09-01','2021-08-01','2021-07-01','20
         '2020-12-01','2020-11-01','2020-10-01','2020-09-01','2020-08-01','2020-07-01','20
         '2019-12-01','2019-11-01','2019-10-01','2019-09-01','2019-08-01','2019-07-01','20
         '2018-12-01','2018-11-01','2018-10-01','2018-09-01','2018-08-01','2018-07-01','20
         '2017-12-01','2017-11-01','2017-10-01','2017-09-01','2017-08-01','2017-07-01','20
         '2016-12-01','2016-11-01','2016-10-01','2016-09-01','2016-08-01','2016-07-01','20
```

```
for date in dates:
    data, titles = getData('hot-100', data, artists, titles, date=date, label=0) # unpopul


print(len(data))
print(len(artists))
print(len(titles))
```

```
    280
    20
    280
```

```
df = pd.DataFrame(data)
df
```

	Artist	Title	Label
0	Dua Lipa	Levitating	1
1	The Weeknd	Blinding Lights	1
2	Olivia Rodrigo	Good 4 U	1
3	Olivia Rodrigo	Drivers License	1
4	Lil Nas X	Montero (Call Me By Your Name)	1
...	...	...	...
275	Ariana Grande	Focus	0
276	Justin Bieber	I'll Show You	0
277	Drake	Right Hand	0
278	Drake	Back To Back	0
279	Justin Bieber	Purpose	0

280 rows × 3 columns

```
#to check if any of our artists have popular and don't have unpopular
check = []
for artist in df['Artist']:
    popular_artist = len(df[(df['Artist'] == artist) & (df['Label'] == 1)])
    unpopular_artist = len(df[(df['Artist'] == artist) & (df['Label'] == 0)])

    if popular_artist == 1 or unpopular_artist == 0:
      check.append(artist)
```

```
        ---------------------------------------------------------------------------
        NameError                                 Traceback (most recent call last)
        <ipython-input-1-6d61591f69ad> in <module>
              1 #to check if any of our artists have popular and don't have unpopular
              2 check = []
        ----> 3 for artist in df['Artist']:
              4     popular_artist = len(df[(df['Artist'] == artist) & (df['Label'] == 1)])
```

```
for artist in df['Artist']:
    if artist in check:
        index_names = df[ df['Artist'] == artist ].index
        df.drop(index_names, inplace = True)
```

SEARCH STACK OVERFLOW

```
df.shape
```

```
(280, 3)
```

```
df.head()
```

	Artist	Title	Label
0	Dua Lipa	Levitating	1
1	The Weeknd	Blinding Lights	1
2	Olivia Rodrigo	Good 4 U	1
3	Olivia Rodrigo	Drivers License	1
4	Lil Nas X	Montero (Call Me By Your Name)	1

```
df.to_csv('Billboard.csv', index=False)
```

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