

Banana Problem

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SECTION: 3rd sem AIML-B

Title: GitHub Trending Repositories

Subject:- UE24MA242A - Mathematics for Computer Science Engineers

Python code:

```
[ ] pip install requests beautifulsoup4 pandas
[+] Requirement already satisfied: requests in /usr/local/lib/python3.12/dist-packages (2.32.4)
[+] Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.12/dist-packages (4.13.5)
Requirement already satisfied: pandas in /usr/local/lib/python3.12/dist-packages (2.2.2)
Requirement already satisfied: charset_normalizer<4,>2 in /usr/local/lib/python3.12/dist-packages (from requests) (3.4.3)
Requirement already satisfied: idna<4,>2.5 in /usr/local/lib/python3.12/dist-packages (from requests) (3.10)
Requirement already satisfied: urllib3<3,>1.21.1 in /usr/local/lib/python3.12/dist-packages (from requests) (2.5.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-packages (from requests) (2025.8.3)
Requirement already satisfied: soupsieve<1.2 in /usr/local/lib/python3.12/dist-packages (from beautifulsoup4) (2.7)
Requirement already satisfied: typing_extensions>4.0.0 in /usr/local/lib/python3.12/dist-packages (from beautifulsoup4) (4.15.0)
Requirement already satisfied: numpy>=1.26.0 in /usr/local/lib/python3.12/dist-packages (from pandas) (2.0.2)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.12/dist-packages (from pandas) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.12/dist-packages (from pandas) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.12/dist-packages (from pandas) (2025.2)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.12/dist-packages (from python-dateutil>=2.8.2->pandas) (1.17.0)

[ ] from bs4 import BeautifulSoup
import requests
import pandas as pd
from google.colab import files
import matplotlib.pyplot as plt

[ ] url = 'https://github.com/trending'
headers = {
    'User-Agent': 'Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/115.0.0.0 Safari/537.36'
}
response = requests.get(url, headers=headers)
print('Status Code:', response.status_code)
[+] Status Code: 200

[ ] soup = BeautifulSoup(response.content, "html.parser")

[ ] articles = soup.find_all("article", class_="Box-row")

[ ] repositories = []
for article in articles:
    repo_tag = article.find("h2", class_="lh-condensed").find("a")
    repo_name = repo_tag.text.strip().replace("\n", "").replace(" ", "")
    stars_tag = article.find("a", href=lambda href: href and href.endswith("/stargazers"))
    if stars_tag:
        stars_text = stars_tag.text.strip().replace(" ", "")
        try:
            stars = int(stars_text)
        except ValueError:
            stars = 0
    else:
        stars = 0
    lang_tag = article.find("span", itemprop="programmingLanguage")
    language = lang_tag.text.strip() if lang_tag else "N/A"
    repositories.append([repo_name, stars, language])

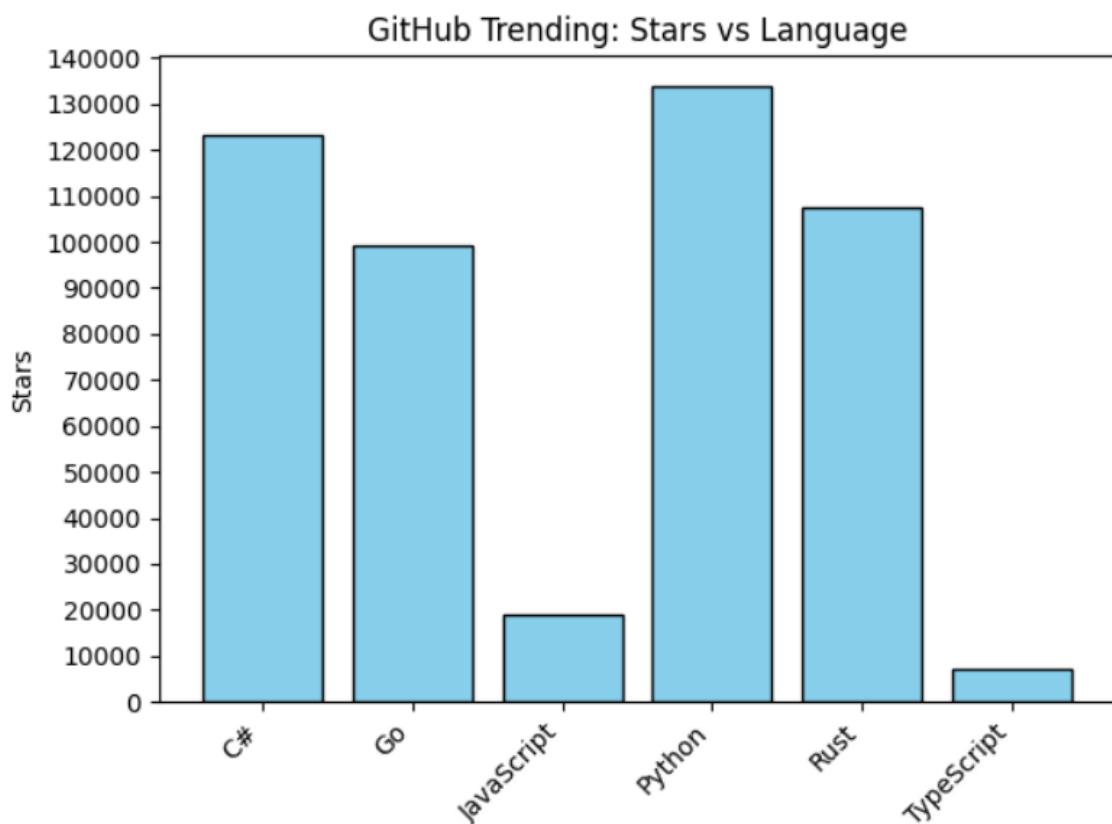
[ ] df = pd.DataFrame(repositories, columns=['Name', 'Stars', 'Language'])
df.to_csv('repositories.csv')
files.download("repositories.csv")
print("Data extracted and saved to repositories.csv")
[+] Data extracted and saved to repositories.csv

[ ] filtered_df = df[df["Language"] != "N/A"]
lang_stars = filtered_df.groupby("Language")["stars"].sum().reset_index()
x = range(len(lang_stars))
height = lang_stars["stars"]
labels = lang_stars["Language"]
plt.bar(x, height, align="center", color="skyblue", edgecolor="black")
plt.xticks(x, labels, rotation=45, ha="right")
max_stars = height.max()
step = 10000
yticks = list(range(0, max_stars + step, step))
plt.yticks(yticks)
plt.title("GitHub Trending: stars vs Language")
plt.xlabel("Stars")
plt.tight_layout()
plt.show()
```

Descriptive statistics results:

A	B	C	D
1	Name	Stars	Language
2	0 bytebot-ai/bytebot	4374	TypeScript
3	1 LukeGus/Termix	2759	TypeScript
4	2 rustdesk/rustdesk	97462	Rust
5	3 crewAllInc/crewAI	37486	Python
6	4 aquasecurity/trivy	28308	Go
7	5 microsoft/PowerToys	123116	C#
8	6 pedroslopez/whatsapp-web.js	19088	JavaScript
9	7 trufflesecurity/trufflehog	20465	Go
10	8 eriklindernoren/ML-From-Scratch	27822	Python
11	9 pocketbase/pocketbase	50325	Go
12	10 weaviate/elysia	1266	Python
13	11 socfortress/Wazuh-Rules	935	Python
14	12 ansible/ansible	66194	Python
15	13 tensorzero/tensorzero	9954	Rust
16			

Visualization results:



Inferences drawn from the descriptive statistics and visualizations:

- 1) Among the trending repositories, Python stands out with the highest total stars, showing it's currently attracting a lot of attention.
- 2) TypeScript has the fewest stars, suggesting that projects in TypeScript are less at this moment.