Lab 3: Getting the stargazers of a GitHub Repository and create a networ

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Step-1: Install PyGithub requests and get information about your Github Profile

```python
In [10]: import requests
from pprint import pprint
username = 'swejeni'
url = f'https://api.github.com/users/{username}'
user_data = requests.get(url).json()
pprint(user_data)
```

{'avatar_url': 'https://avatars.githubusercontent.com/u/138602960?v=4',
 'bio': None,
 'blog': '',
 'company': None,
 'created_at': '2023-07-04T14:51:30Z',
 'email': None,
 'events_url': 'https://api.github.com/users/swejeni/events{/privacy}',
 'followers': 0,
 'followers_url': 'https://api.github.com/users/swejeni/followers',
 'following': 0,
 'following_url': 'https://api.github.com/users/swejeni/following{/other_user}',
 'gists_url': 'https://api.github.com/users/swejeni/gists{/gist_id}',
 'gravatar_id': '',
 'hireable': None,
 'html_url': 'https://github.com/swejeni',
 'id': 138602960,
 'location': None,
 'login': 'swejeni',
 'name': None,
 'node_id': 'U_kgDOCELp0A',
 'organizations_url': 'https://api.github.com/users/swejeni/orgs',
 'public_gists': 0,
 'public_repos': 7,
 'received_events_url': 'https://api.github.com/users/swejeni/received_events',
 'repos_url': 'https://api.github.com/users/swejeni/repos',
 'site_admin': False,
 'starred_url': 'https://api.github.com/users/swejeni/starred{/owner}{/repo}',
 'subscriptions_url': 'https://api.github.com/users/swejeni/subscriptions',
 'twitter_username': None,
 'type': 'User',
 'updated_at': '2023-07-17T07:29:00Z',
 'url': 'https://api.github.com/users/swejeni'}

Step-2: Getting Public repositories of a user

```
In [11]:  !pip install pygithub
```

Requirement already satisfied: pygithub in c:\users\sweth\downloads\nlp\lib\site-packages (1.59.0)
Requirement already satisfied: requests>=2.14.0 in c:\users\sweth\downloads\nlp\lib\site-packages (from pyg
ithub) (2.28.1)
Requirement already satisfied: pynacl>=1.4.0 in c:\users\sweth\downloads\nlp\lib\site-packages (from pygith
ub) (1.5.0)
Requirement already satisfied: deprecated in c:\users\sweth\downloads\nlp\lib\site-packages (from pygithub)
(1.2.14)
Requirement already satisfied: pyjwt[crypto]>=2.4.0 in c:\users\sweth\downloads\nlp\lib\site-packages (from
pygithub) (2.4.0)
Requirement already satisfied: cryptography>=3.3.1 in c:\users\sweth\downloads\nlp\lib\site-packages (from
pyjwt[crypto]>=2.4.0->pygithub) (37.0.1)
Requirement already satisfied: cffi>=1.4.1 in c:\users\sweth\downloads\nlp\lib\site-packages (from pynacl>=
1.4.0->pygithub) (1.15.1)
Requirement already satisfied: charset-normalizer<3,>=2 in c:\users\sweth\downloads\nlp\lib\site-packages
(from requests>=2.14.0->pygithub) (2.0.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\sweth\downloads\nlp\lib\site-packages (fro
m requests>=2.14.0->pygithub) (1.26.11)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\sweth\downloads\nlp\lib\site-packages (from r
equests>=2.14.0->pygithub) (2022.9.14)
Requirement already satisfied: idna<4,>=2.5 in c:\users\sweth\downloads\nlp\lib\site-packages (from request
s>=2.14.0->pygithub) (3.3)
Requirement already satisfied: wrapt<2,>=1.10 in c:\users\sweth\downloads\nlp\lib\site-packages (from depre
cated->pygithub) (1.14.1)
Requirement already satisfied: pycparser in c:\users\sweth\downloads\nlp\lib\site-packages (from cffi>=1.4.
1->pynacl>=1.4.0->pygithub) (2.21)

```
In [12]:  import base64
          from github import Github
          from pprint import pprint
          username="swejeni"
          g=Github()
          user=g.get_user(username)
          for repo in user.get_repos():
              print(repo)
```

```
Repository(full_name="swejeni/Deep-Learning")
Repository(full_name="swejeni/DVA-LAB")
Repository(full_name="swejeni/NLP-LAB")
Repository(full_name="swejeni/PML-FLASK-")
Repository(full_name="swejeni/PML-LAB")
Repository(full_name="swejeni/Social-Media-Analytics")
Repository(full_name="swejeni/SWETHA-JENIFER-")
```

Step-3: Querying for stargazers of a particular repository

```
In [13]:  from github import Github
          ACCESS_TOKEN="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"
          USER="ptwobrussell"
          REPO="Mining-the-Social-Web"
          #REPO="Mining-the-Social-Web-2nd-Edition"
          client=Github(ACCESS_TOKEN, per_page=100)
          user=client.get_user(USER)
          repo=user.get_repo(REPO)
          stargazers=[s for s in repo.get_stargazers()]
          print("Number of stargazers", len(stargazers))
```

```
Number of stargazers 1210
```

Step-4: Constructing an ego graph of a repository and its stargazers

```
In [14]: import networkx as nx
         g=nx.DiGraph()
         g.add_node(repo.name+"(repo)",type='repo',lang=repo.language,owner=user.login)
         for sg in stargazers:
             g.add_node(sg.login+"(user)",type='user')
             g.add_edge(sg.login+"(user)",repo.name+"(repo)",type='gazes')
```

Step-5: Perform handy graph operations

```
In [15]: print(nx.info(g))
         print(g.nodes['Mining-the-Social-Web(repo)'])
         print(g.nodes['ptwobrussell(user)'])
         print(g['ptwobrussell(user)']['Mining-the-Social-Web(repo)'])
         print(g['ptwobrussell(user)'])
         print(g['Mining-the-Social-Web(repo)'])
         print(g.in_edges(['ptwobrussell(user)']))
         print(g.out_edges(['ptwobrussell(user)']))
         print(g.in_edges(['Mining-the-Social-Web(repo)']))
         print(g.out_edges(['Mining-the-Social-Web(repo)']))
```

```
DiGraph with 1211 nodes and 1210 edges
{'type': 'repo', 'lang': 'JavaScript', 'owner': 'ptwobrussell'}
{'type': 'user'}
{'type': 'gazes'}
{'Mining-the-Social-Web(repo)': {'type': 'gazes'}}
{}
[]
[('ptwobrussell(user)', 'Mining-the-Social-Web(repo)')]
[('rdempsey(user)', 'Mining-the-Social-Web(repo)'), ('prb(user)', 'Mining-the-Social-Web(repo)'), ('mcro
ydon(user)', 'Mining-the-Social-Web(repo)'), ('twleung(user)', 'Mining-the-Social-Web(repo)'), ('kevinch
iu(user)', 'Mining-the-Social-Web(repo)'), ('nikolay(user)', 'Mining-the-Social-Web(repo)'), ('tswicegoo
d(user)', 'Mining-the-Social-Web(repo)'), ('ngpestelos(user)', 'Mining-the-Social-Web(repo)'), ('darron
(user)', 'Mining-the-Social-Web(repo)'), ('brunojm(user)', 'Mining-the-Social-Web(repo)'), ('rgaidot(use
r)', 'Mining-the-Social-Web(repo)'), ('openweb(user)', 'Mining-the-Social-Web(repo)'), ('shanlalit(use
r)', 'Mining-the-Social-Web(repo)'), ('hoffmann(user)', 'Mining-the-Social-Web(repo)'), ('nacht(user)',
'Mining-the-Social-Web(repo)'), ('hectoregm(user)', 'Mining-the-Social-Web(repo)'), ('tzuryby(user)', 'M
ining-the-Social-Web(repo)'), ('marksands(user)', 'Mining-the-Social-Web(repo)'), ('wbzyl(user)', 'Minin
g-the-Social-Web(repo)'), ('sou(user)', 'Mining-the-Social-Web(repo)'), ('magnum(user)', 'Mining-the-Soc
ial-Web(repo)'), ('suzuki(user)', 'Mining-the-Social-Web(repo)'), ('tertsch(user)', 'Mining-the-Social-W
```

```
In [ ]:
```