Redis Assignment

In this assignment, you will access a redis server and user redis commands to find out answers. The redis server is at *lab.aimet.tech*. You also have to authenticate as username 'hw' with password 'hw'.

The populated data in the redis database is similar to the example "simple social network" in the class. Answer all questions in mycourseville assignment.

Note that this user can only use "read" commands e.g. "get", "lrange", "llen", "scan", etc.

```
try:
  import google.colab
  IN_COLAB = True
except:
  IN_COLAB = False
```

```
if IN_COLAB:
    %pip install redis
```

```
Requirement already satisfied: redis in /usr/local/lib/python3.10/dist-pack
Requirement already satisfied: async-timeout>=4.0.3 in /usr/local/lib/pytho
```

```
import redis
```

```
rd = redis.Redis(host='lab.aimet.tech', charset="utf-8", decode_responses=True,
```

What is the username of user id "600"?

```
rd.get('user:600:name')
```

```
'cautiousCrackers9'
```

What is the id of username "excitedPie4" ?

```
username='excitedPie4'
rd.get(f'username:{username}')
```

```
'567'
```

How many users that "excitedPie4" follows ?

```
username='excitedPie4'
user_id=rd.get(f"username:{username}")
rd.scard(f'user:{user_id}:follows')
```

```
9
```

How many users are there in the database?

```
len(rd.keys("user:*:name"))
```

```
200
```

What is the average number of follows per user?

```
from concurrent.futures import ThreadPoolExecutor
mean = lambda xs: sum(xs)/len(xs)
def msmembers(keys,rd):
    with ThreadPoolExecutor() as executor:
        futures = [executor.submit(lambda key: (key, rd.smembers(key)), key) fo
    return [future.result() for future in futures]
follows_keys = rd.keys("user:*:follows")
average_follows = mean([len(v[1]) for v in msmembers(follows_keys,rd)])
average_follows
```

```
9.72316384180791
```

How many users follows between 5-10 users?

```
follows_keys = rd.keys("user:*:follows")
user_follows = [v[1] for v in msmembers(follows_keys,rd)]
sum([1 for follows in user_follows if len(follows) >= 5 and len(follows) <= 10]
```

```
60
```

Which account has the most followers?

```
key_of = lambda pair: pair[0]
values_of = lambda pair: pair[1]
def number_of_followers(pair):
    return len(values_of(pair))

follower_keys = rd.keys("user:*:followed_by")
followers = msmembers(follower_keys,rd)

result = max(followers, key=number_of_followers)
user_id = key_of(result).split(":")[1]
username = rd.get(f'user:{user_id}:name')
username
```

```
'wakefulSheep5'
```