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.

```
# we will have to install redis in colab
import sys
IN_COLAB = 'google.colab' in sys.modules
if IN_COLAB:
  !pip install redis
```

```
Requirement already satisfied: redis in /usr/local/lib/python3.10/dist-packages (5.0.2)
Requirement already satisfied: async-timeout>=4.0.3 in /usr/local/lib/python3.10/dist-packages (from redis) (4.0.3)
```

+ Code + Text

```
import redis


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

```
True
```

What is the username of user id "600"?

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

```
'cautiousCrackers9'
```

What is the id of username "excitedPie4" ?

```
# cursor = 0
# cursor, keys = rd.scan(cursor=cursor, match='user:*')
# while cursor > 0:
#     for key in keys:
#         print('found: ', key)
#     cursor, keys = rd.scan(cursor=cursor, match='user:693:*')

# for key in keys:
#     print('found: ', key)


user_id = rd.get('username:excitedPie4')
print(f'Id of username "excitedPie4" is {user_id}')
```

```
Id of username "excitedPie4" is 567
```

How many users that "excitedPie4" follows ?

```
rd.scard(f'user:{user_id}:follows')
```

```
9
```

How many users are there in the database?

```
users_count = len(rd.keys('user:*:name'))
print(f'There are {users_count} users in the database')
```

```
There are 200 users in the database
```

What is the average number of follows per user?

```
user_keys = rd.keys('user:*:name')
follow_counts = [rd.scard(f'user:{user_key.split(":")[1]}:follows') for user_key in user_keys]
average_follows = sum(follow_counts) / len(follow_counts) if follow_counts else 0

print(f'The average number of follows per user is {average_follows}')
```

```
The average number of follows per user is 8.605
```

How many users follows between 5-10 users?

```
user_keys = rd.keys('user:*:name')
follow_counts = [rd.scard(f'user:{user_key.split(":")[1]}:follows') for user_key in user_keys]
users_follows_5_10 = sum(1 for count in follow_counts if 5 <= count <= 10)

print(f'{users_follows_5_10} users follow between 5-10 users')
```

```
60 users follow between 5-10 users
```

Which account has the most followers?

```
user_ids = [key.split(":")[1] for key in rd.keys('user:*:name')]
follower_counts = [(user_id, rd.scard(f'user:{user_id}:followed_by')) for user_id in user_ids]
max_followers_user_id, max_followers_count = max(follower_counts, key=lambda x: x[1])

print(f'The account (user id) with the most followers is {max_followers_user_id} with {max_followers_count} followers')
```

```
The account (user id) with the most followers is 630 with 17 followers
```