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 (5.0.3)
Requirement already satisfied: async-timeout>=4.0.3 in /usr/local/lib/python3.10/dist-packages (from redis) (4.0.3)
```

```
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" ?

```
rd.get('username:excitedPie4')
```

```
'567'
```

How many users that "excitedPie4" follows ?

```
rd.scard('user:567:follows')
```

```
9
```

How many users are there in the database?

```
def get_match_pattern(conn, pattern):
  matched_keys = []
  cursor = 0
  while True:
    cursor, keys = conn.scan(cursor=cursor, match=pattern)
    matched_keys.extend(keys)
    if cursor == 0:
      break
  return matched_keys
```

```
username = get_match_pattern(rd, 'username:*')
len(username)
```

```
200
```

What is the average number of follows per user?

```
import numpy as np
follows = get_match_pattern(rd, 'user:*:follows')
follows_num = np.array([rd.scard(follow) for follow in follows])
np.sum(follows_num) / len(username)
```

```
8.605
```

How many users follows between 5-10 users?

```
np.sum((follows_num >= 5) & (follows_num <= 10))
```

```
60
```

Which account has the most followers?

```
followers = get_match_pattern(rd, 'user:*:followed_by')
followers_num = [rd.scard(follower) for follower in followers]
```

```
followers[np.argmax(followers_num)]
```

```
'user:630:followed_by'
```