Design Pattern Final Project – Social Network Search Engine
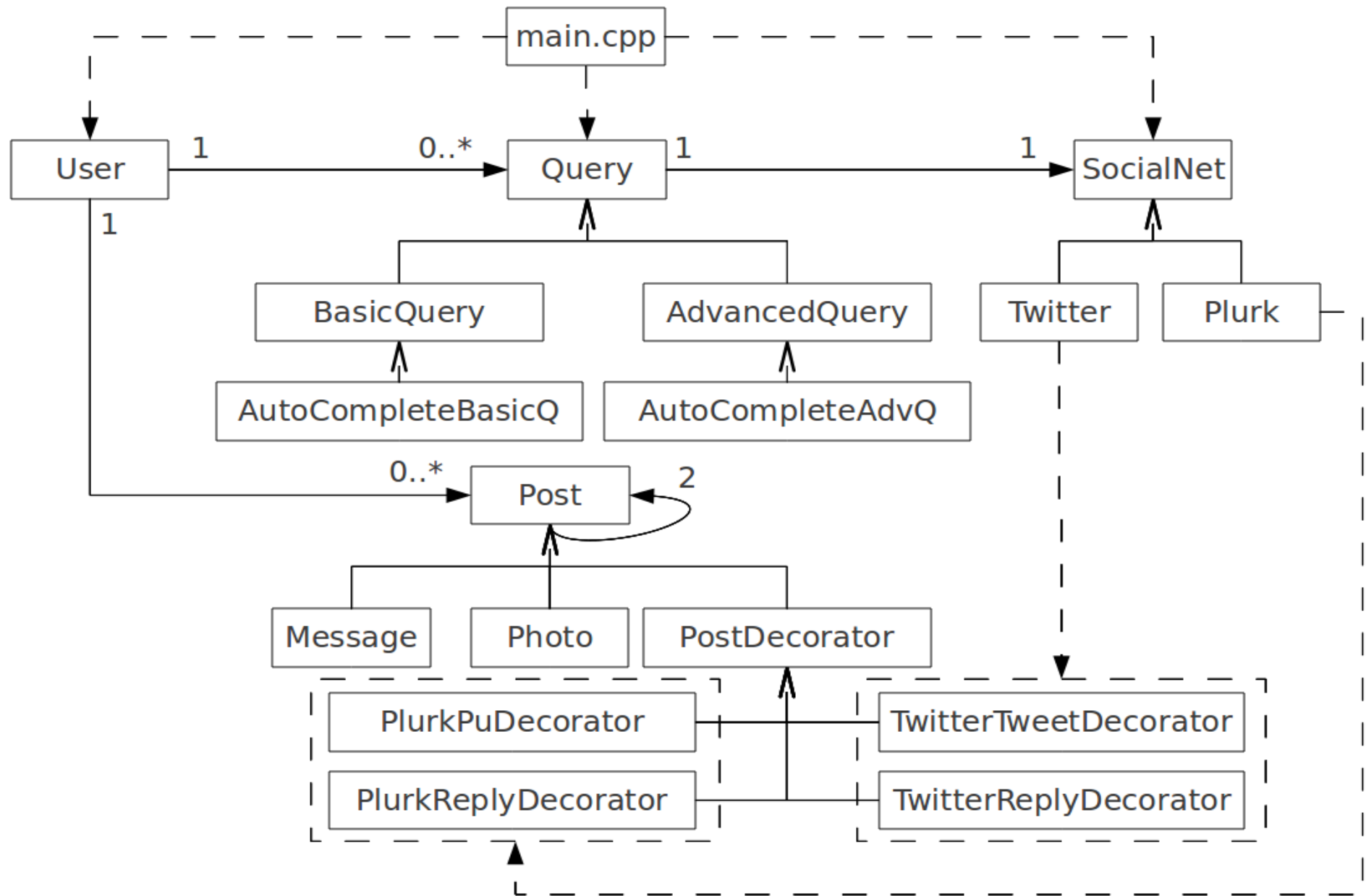
R00922009 楊詠翔
D98921028 王祐邦
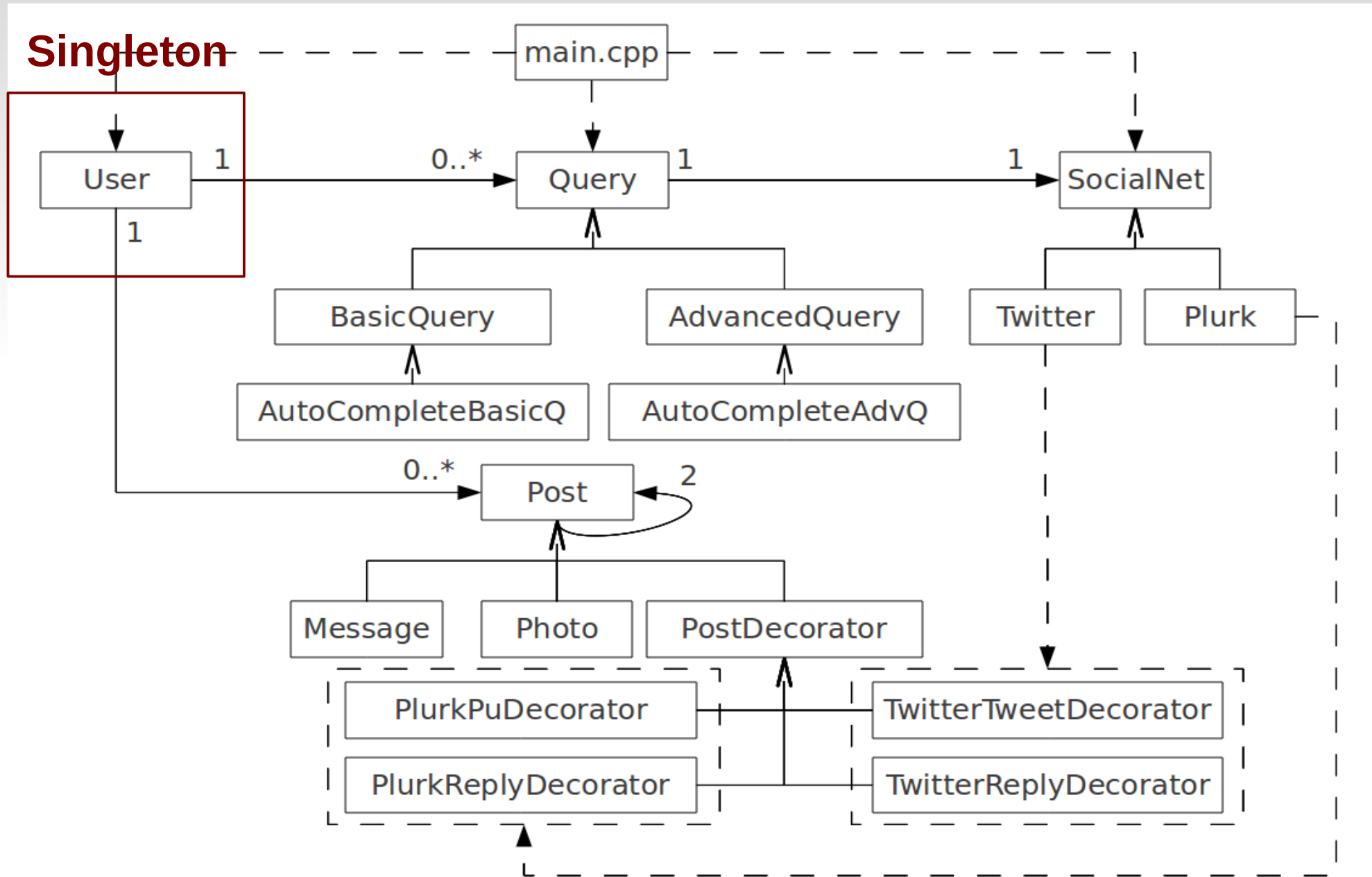
Introduction

- Main features:
  - Search keyword and/or person
  - Browse
  - Like
  - Reply
- Support Plurk and Twitter for now
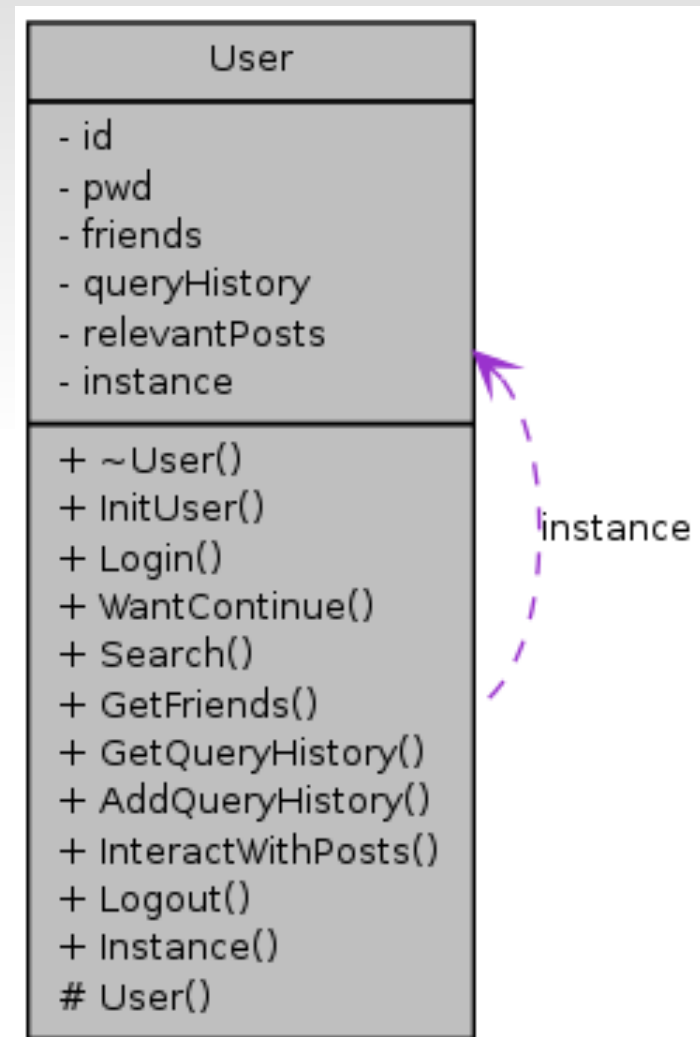- Implementation: C++ and Python

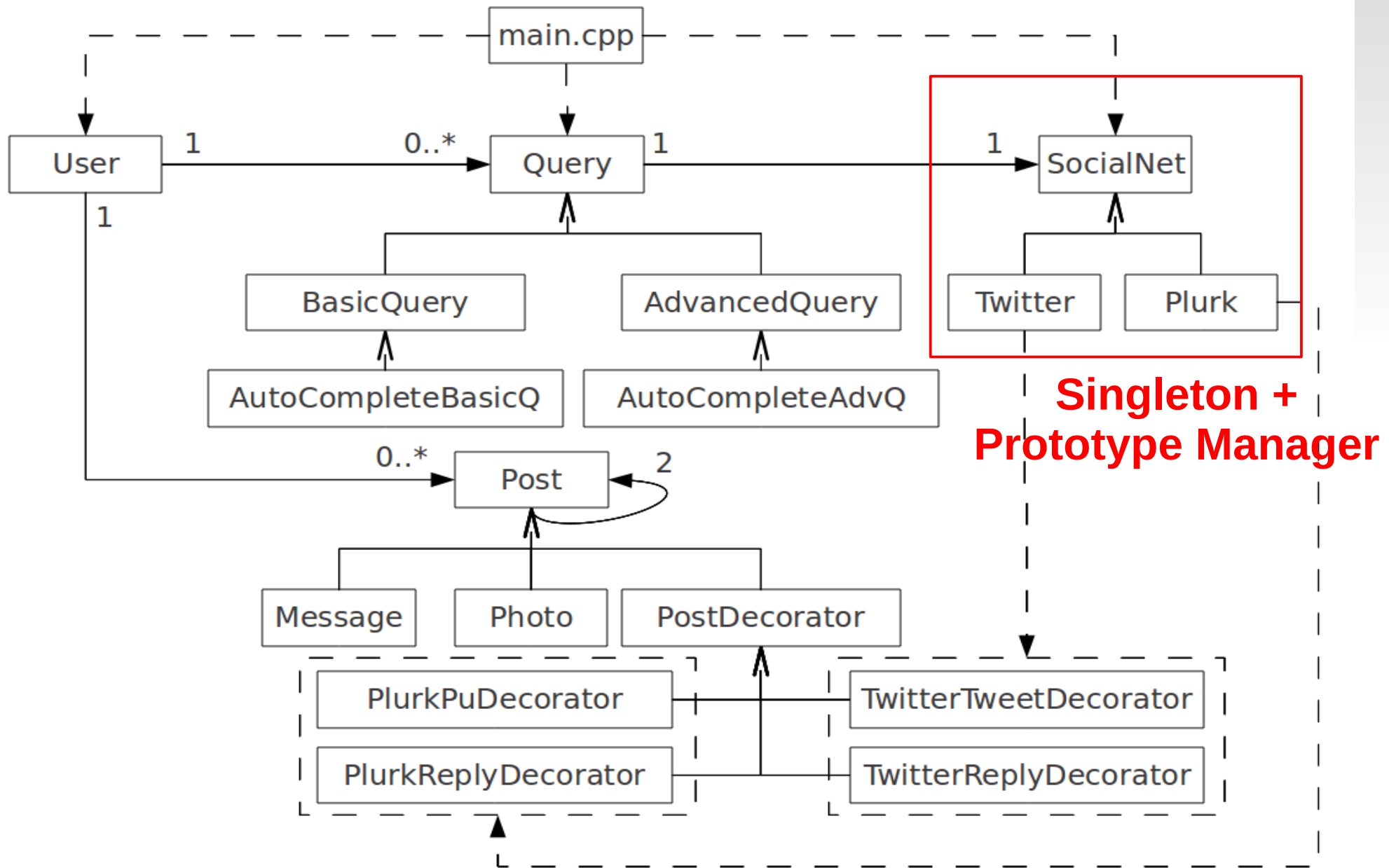# **Overall Class Diagram**

Overall Class Diagram

User: Singleton

- Instantiate at program startup.
  - Avoid multi-thread problem.

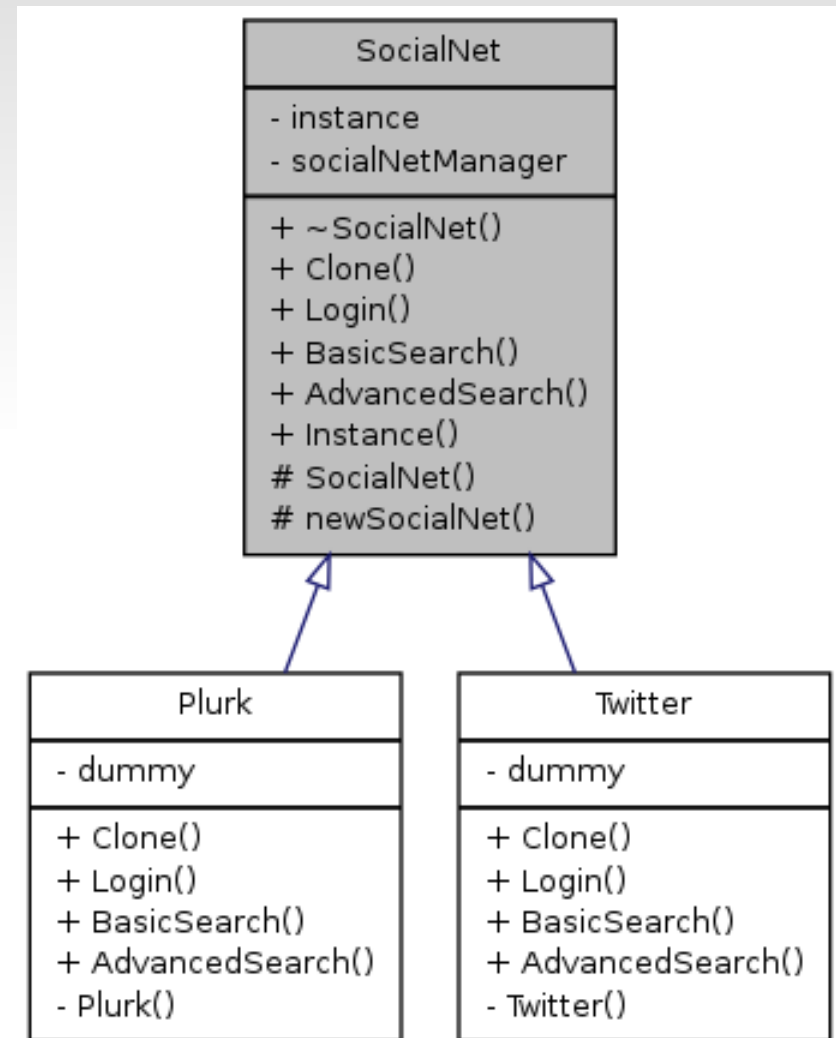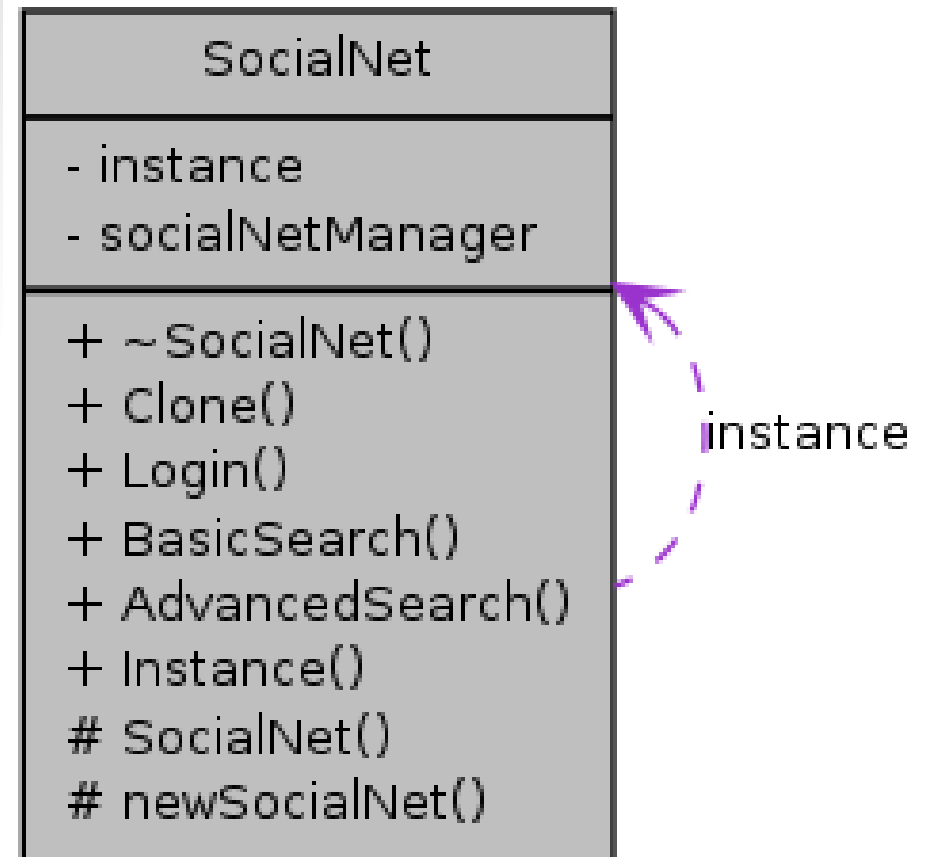| User |
| --- |
| - id |
| - pwd |
| - friends |
| - queryHistory |
| - relevantPosts |
| - instance |
| + ~User() |
| + InitUser() |
| + Login() |
| + WantContinue() |
| + Search() |
| + GetFriends() |
| + GetQueryHistory() |
| + AddQueryHistory() |
| + InteractWithPosts() |
| + Logout() |
| + Instance() |
| # User() |

instance

Overall Class Diagram

SocialNet: Singleton + Prototype Manager

- All its derived classes (also singletons) instantiate themselves at program startup, and register to the prototype manager.

SocialNet

- instance
- socialNetManager

+ ~SocialNet()
+ Clone()
+ Login()
+ BasicSearch()
+ AdvancedSearch()
+ Instance()
# SocialNet()
# newSocialNet()

Plurk

- dummy

+ Clone()
+ Login()
+ BasicSearch()
+ AdvancedSearch()
- Plurk()

Twitter

- dummy

+ Clone()
+ Login()
+ BasicSearch()
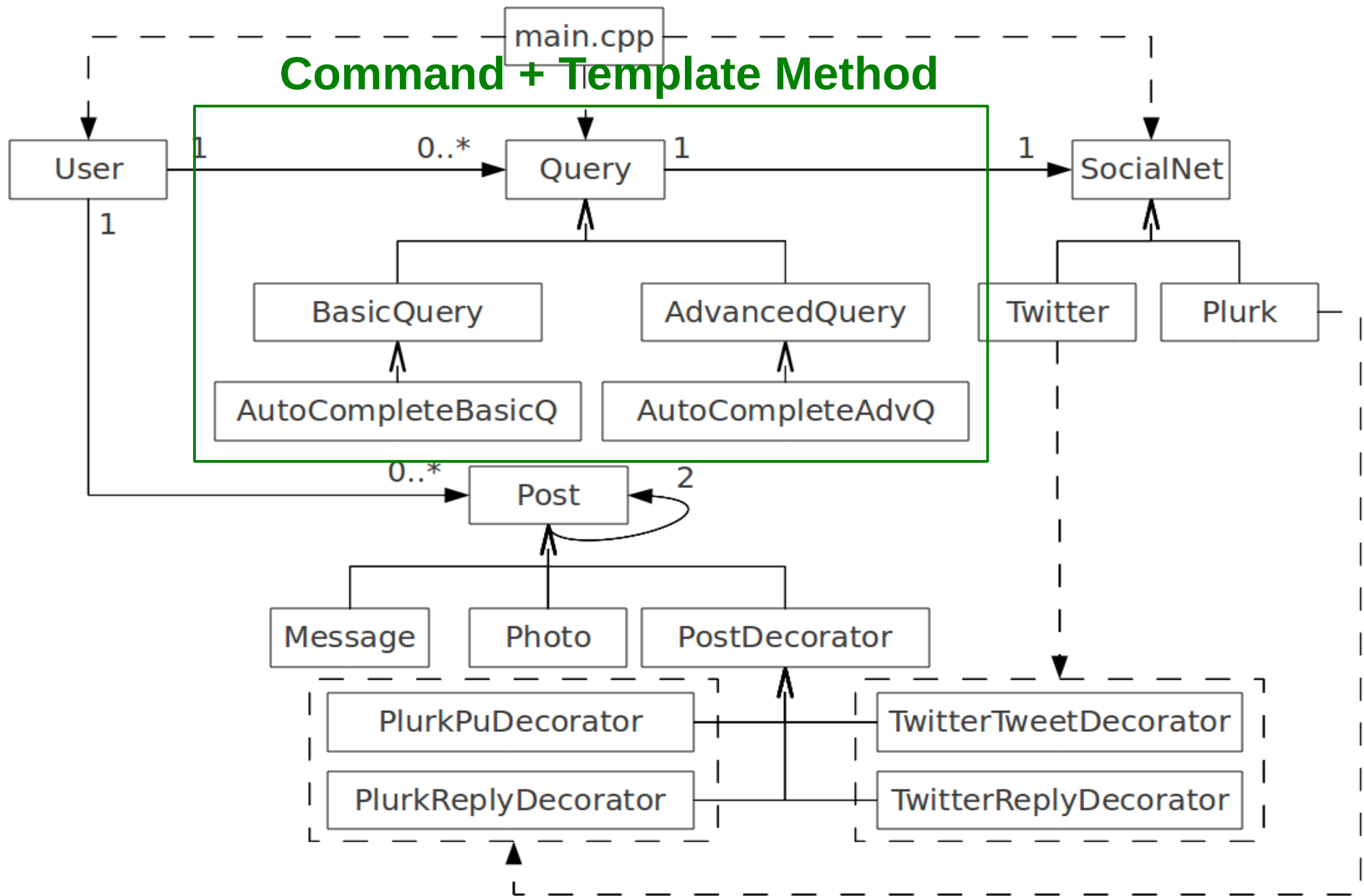+ AdvancedSearch()
- Twitter()

SocialNet: Singleton + Prototype Manager

- SocialNet::Instance() by cloning from prototype manager, not newing!
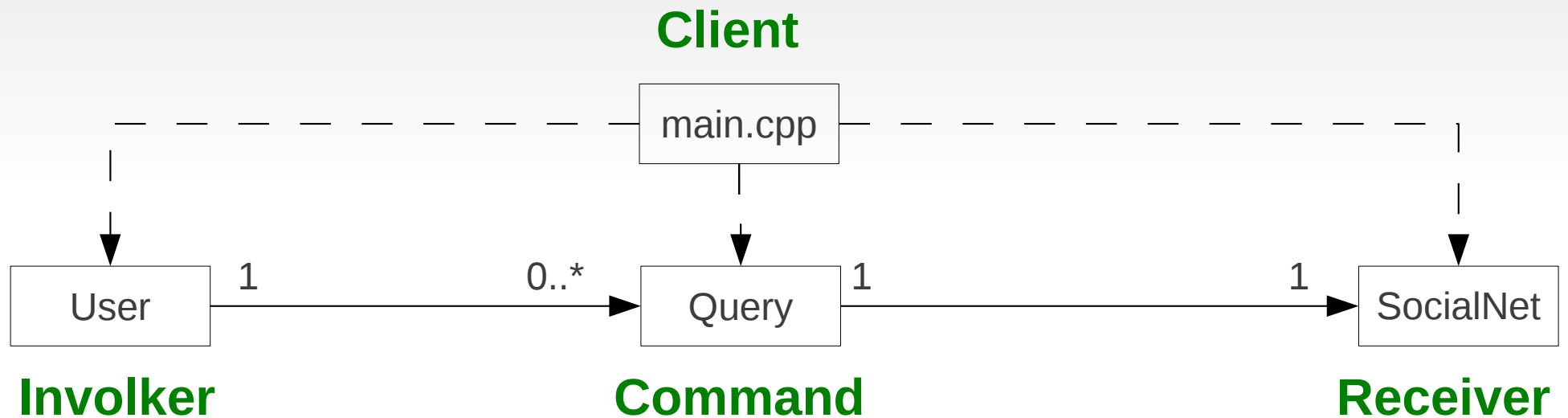
  - Avoid multi-thread problem.
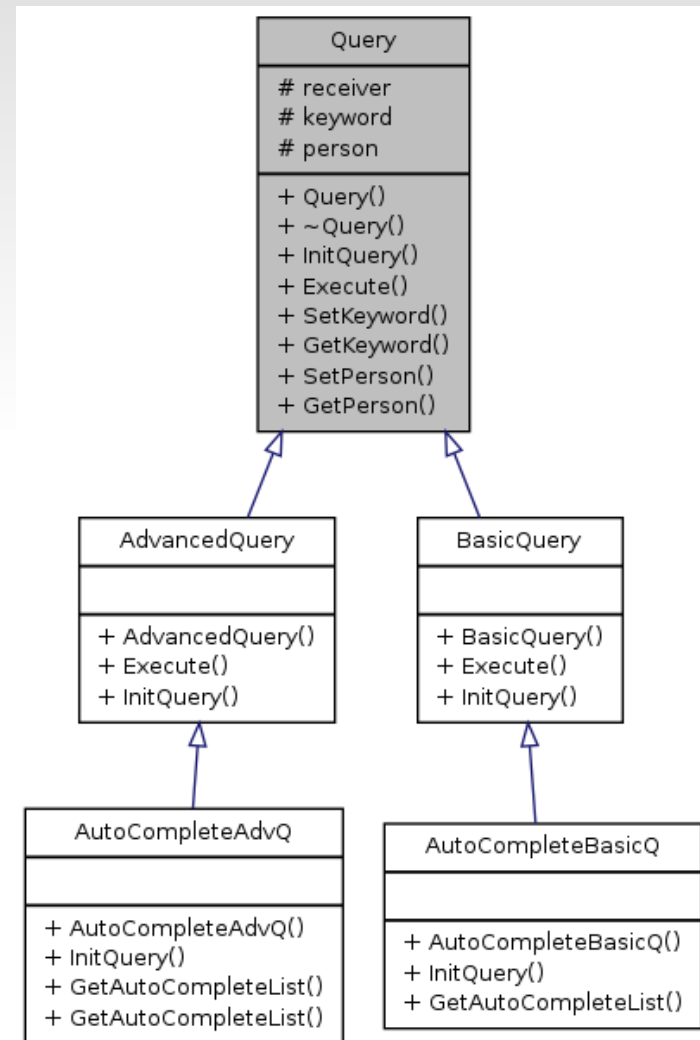
Overall Class Diagram

Query: Command + Template Method

Client

```
main.cpp
```

User 1 ────→ 0..* **Query** 1 ────→ 1 **SocialNet**
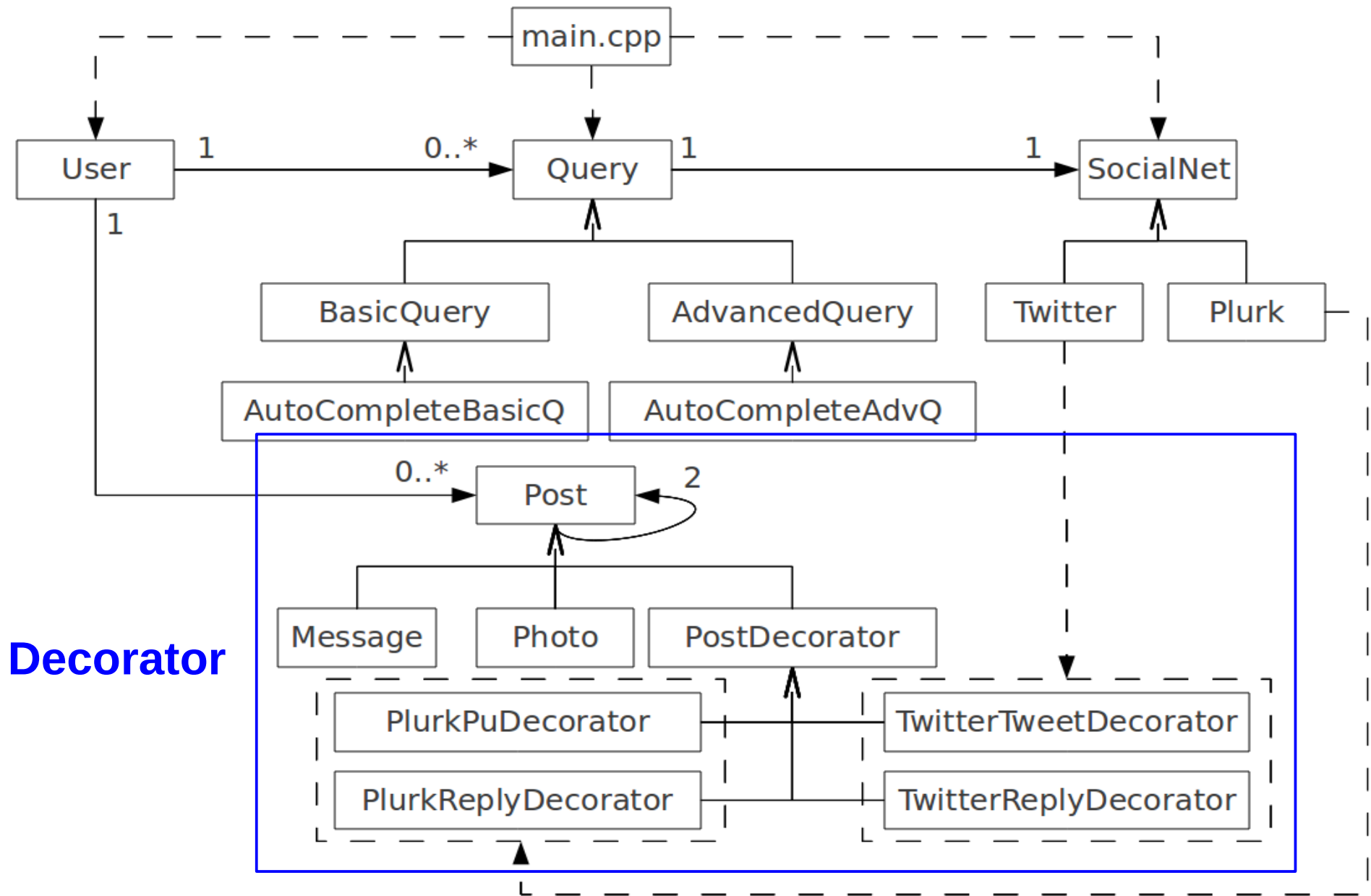
Involker

Command

Receiver

Query: Command + Template Method

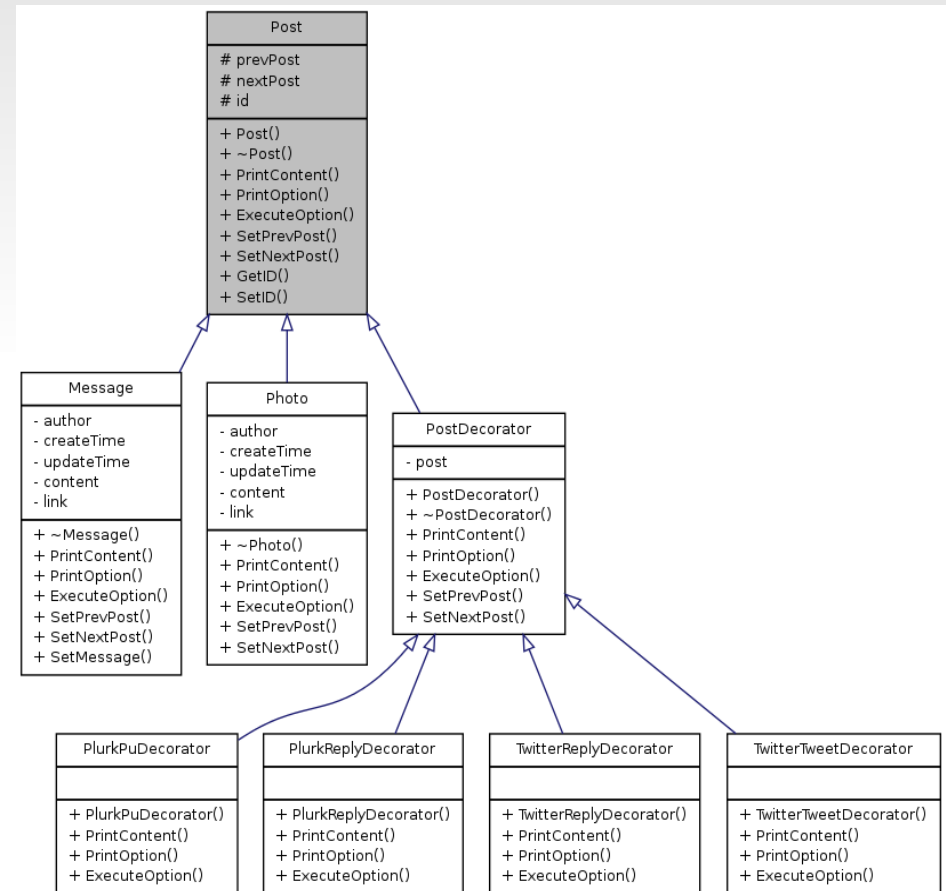- Use Template Method to override InitQuery() to auto-complete.
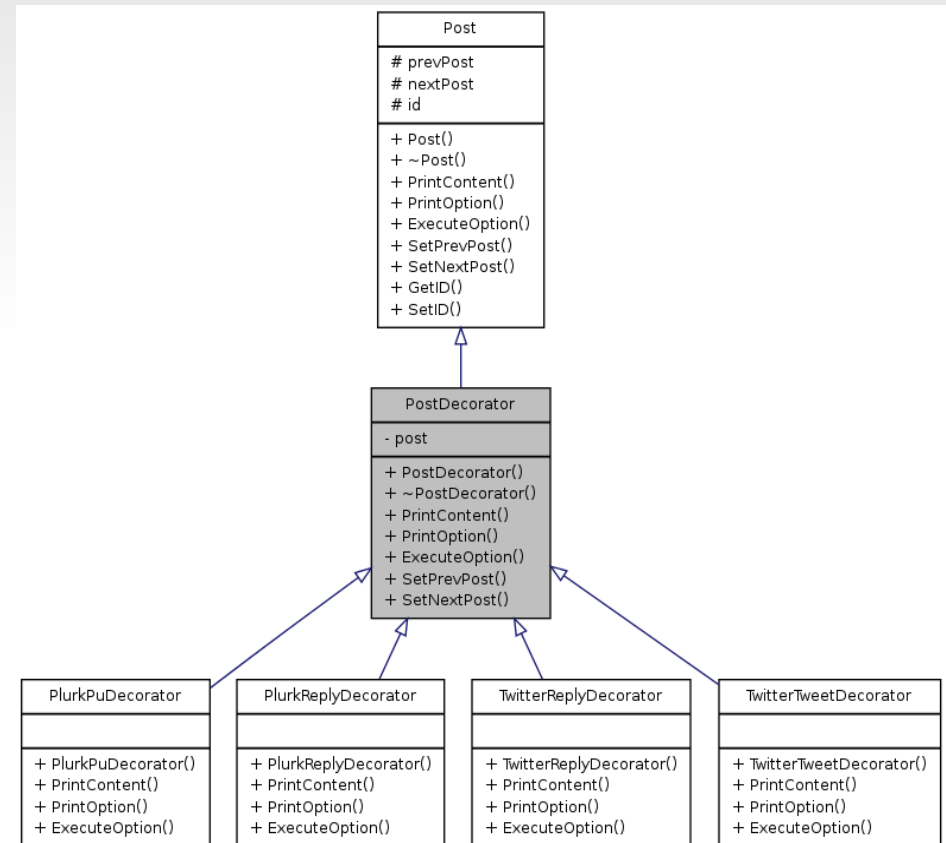
Overall Class Diagram

Post: Decorator

- Post:
  - Message
  - Photo
  - …...etc.

- Responsibilities of Post (without decorator):
  - Go to previous
  - Go to next
  - Quit browsing
  - …...etc.

Post: Decorator

- PostDecorator:
  - Like
  - Reply
  - …...etc.
- Different decorators used by different social networks.

Other special features

- Password masking

    - Enter password, show "*".

- Auto-complete

    - Keyword: from log of query history

        - Save the latest 100 queries when terminate

        - Load log when startup

    - Person: from friend list

Open for extension

1. Add new social network

   - Must also add new PostDecorator

2. Add new kinds of posts (e.g. shared link)

3. Add new type of query

   - Must update/add the search method of receiver of Query i.e. SocialNet

Questions?