Instagram Feed

Problem statement

We would like to design the instagram feed which will have two actors i.e. Influencers and Users.

Influencers can create content for the users to watch. They can use hashtags in their posts to increase their reach.

Users can subscribe to both Influencers or hashtags.

Following stories are in the scope of the MVP:

- Can create an Influencer
- Can delete an Influencer
- Influencers can create a post. If a post has a new hashtag created then we should register a new hashtag and send the post to all the followers of influencer/hashtags.
- Influencers can delete a post. No users will be able to see this post.
- Influencers can see stats for number of followers and number of views on a particular post.
- Can create/delete an user.
- Can follow/unfollow an influencer or a hashtag.
- Users can call fetch feed to receive the feed. Feed should be in decreasing order of creation timestamp.
- If the number of followers > 3 then post the new post to user feed at time of creation otherwise add it to user feed on demand.

Input

- Create <Actor> <Name>
- Follow <Influencer/Hashtag> <User>
- Post <Influencer> <MSG> … [<Hashtag>]
- Fetch <User>
- *Stats <Influencer/Hashtag> #number of followers*
- *Stats <Influencer> <PostId> #number of views*

Example

Create Influencer Samay
Create User RK
Create User JSP
Create User AJ
Follow Samay RK
Post Samay “This is sparta” #war
Follow #war RK
Fetch RK
    Post Id 1: Samay: “This is Sparta”
Create Influencer AIB
Follow AIB JSP
Follow AIB AJ
Post AIB “A King may move a man, a father may claim a son, that man can also move himself, and only then does that man truly begin his own game” #war
Fetch RK
    Post Id 1: Samay: “This is Sparta”
    Post Id 2: AIB : “A King may move a man, a father may claim a son, that man can also move himself, and only then does that man truly begin his own game”
Stats AIB
    2
Follow AIB RK
Stats Samay
    1
Stats AIB
    3
Stats AIB PostId2
    1

Rules

1. We are really, really interested in your object-oriented or functional design skills, so please craft the most beautiful code you can.
2. Use in memory data structures instead of DB storage.
3. We're also interested in understanding how you make assumptions when building software. If a particular workflow or boundary condition is not defined in the problem statement, what you do is your choice.
4. You have to solve the problem in an object-oriented or functional language without using any external libraries to the core language except for a testing library for TDD.
5. We expect you to send us a standard zip or tarball of your source code when you're done.
6. Please ensure that you follow the syntax and formatting of both the input and output samples provided above. This is to help you validate the correctness of your program.
7. Please do not make either your solution or this problem statement publicly available by, for example, using GitHub or bitbucket or by posting this problem to a blog or forum.