15-415 Database Applications Recitation 8

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Project 2

- CMUQFlix!
- A Movie Recommendation System

Project 2 Objectives

- Set up a front-end website with PostgreSQL as the back-end
- Allow users to **login**, "**like**" movies, and get **personalized movies recommendations**

Agenda

- **Cookies** in Project 2
- **Recommendation system** in Project 2

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- **Cookies** in Project 2
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Cookies

- **Small (text) files** stored on your computer
- They help rememb**er information about a user** (keeping a **session** active)

Cookies: How do they Work?

- When a web browser **requests a page from the server**, the "**cookies**" for that page **are sent as part of the request**

- On the server (*your JAVA code*!), you will look for cookies in the request.

Cookies: Case 1

- You will be **creating a cookie** when a user **logs in**:

```
doGet (HttpServletRequest request, HttpServletResponse response) {
…
            String username = request.getParameter("username");;
            Cookie unameCookie = new Cookie("username", username);
            unameCookie.setMaxAge(3600); /* one hour in s */
            response.addCookie(unameCookie);
…
}
```

- This stores the cookie on your computer

Cookies: Case 2

- You will be **checking for a cookie** when a user **accesses some page** (e.g. index.html):

```
doGet (HttpServletRequest request, HttpServletResponse response) {
…
           Cookie unameCookie = null;
           Cookie allCookies[] = request.getCookies();
           if (allCookies != null)
                for (Cookie c : allCookies)
                      if(c.getName().equals("username"))
                          unameCookie = c; // username = c.getValue();
           if (unameCookie != null) { \\ show index.html content }
           else { \\ show login.html or some login/register form}
…
}
```

Cookies: Case 3

- You will be **removing a cookie** when a user **logs out**:

```
doGet (HttpServletRequest request, HttpServletResponse response) {
…
        Cookie unameCookie = null;
        unameCookie = new Cookie("username", null)
        unameCookie.setMaxAge(   );
        reponse.addCookie(unameCookie);
…
}
```

Agenda

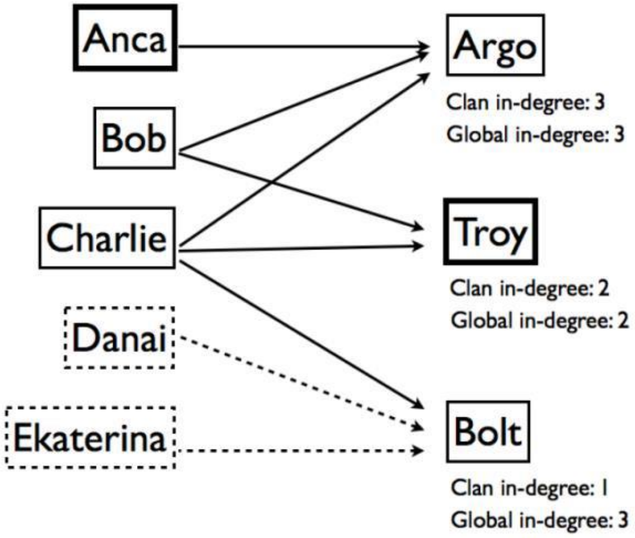
- Cookies in Project 2
- Recommendation system in Project 2

Recommendation System: Case 1

- If a user *u* has **not yet** "liked" any movies:
  - Display the top 5 "liked" movies in the database

Recommendation System: Case 2

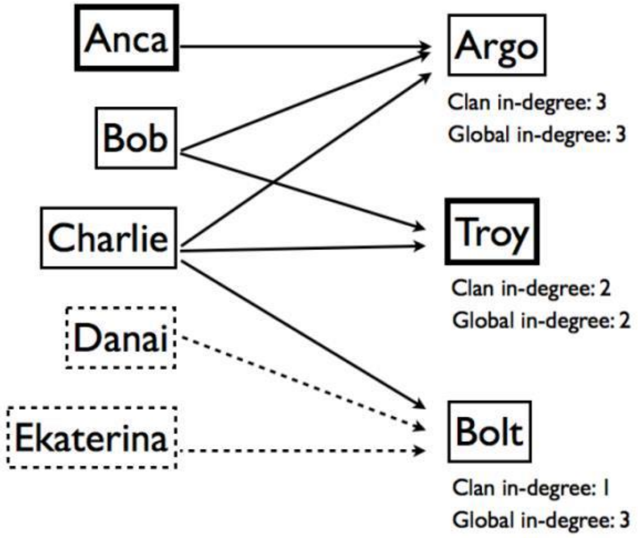
- If a user *u* has "liked" **at least one** movie:
  1. Find out what is the user *u*'s "**movie clan**" is
     - The user's **movie clan** is the *group of all users of have liked at least one movie u is liked*
     - In the figure, *Anca's* **movie clan** would be:
       - *Bob*
       - *Charlie*



Recommendation System: Case 2

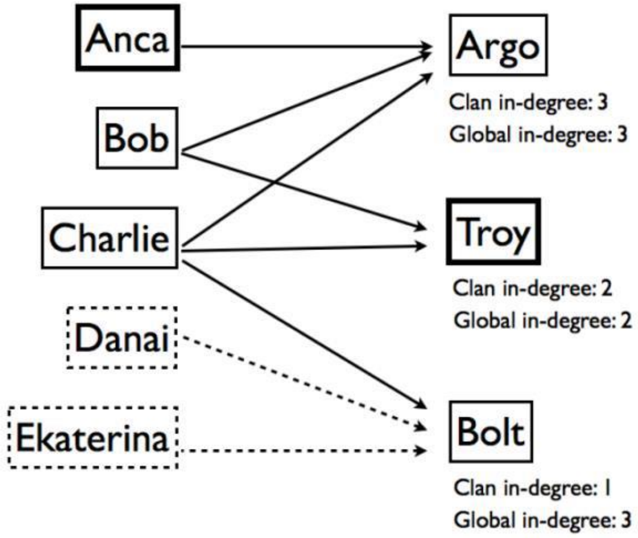
- If a user *u* has "liked" **at least one** movie:

  2. Retrieve all the movies that have been liked by user *u*'s movie clan:
     - In the figure, for *Anca*, these movies are:
       - *Argo*
       - *Troy*
       - *Bolt*



Recommendation System: Case 2

- If a user *u* has "liked" **at least one** movie:
  2. Retrieve all the movies that have been liked by user *u*'s movie clan:
     - In the figure, for *Anca*, these movies are:
       - *Argo* (***clan in-degree* = 3**)
       - *Troy* (***clan in-degree* = 2**)
       - *Bolt* (***clan in-degree* = 1**)

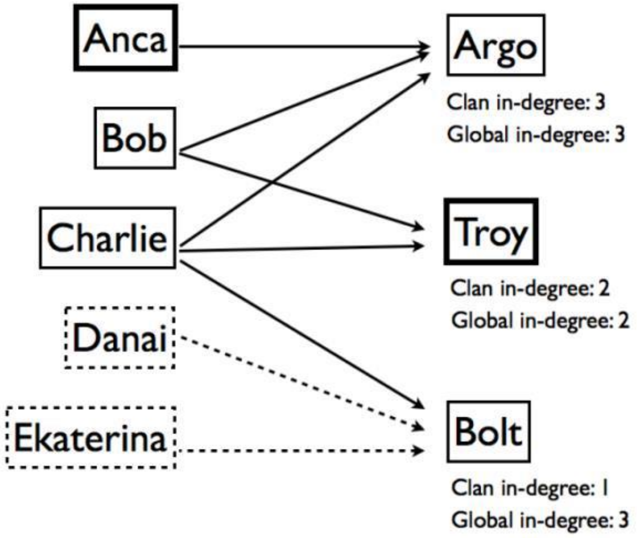


Recommendation System: Case 2

- If a user *u* has "liked" **at least one** movie:
  2. Retrieve all the movies that have been liked by user *u*'s movie clan:
     - In the figure, for *Anca*, these movies are:

Anca has already liked this movie!

- ~~*Argo* (***clan in-degree* = 3**)~~
- *Troy* (***clan in-degree* = 2**)
- *Bolt* (***clan in-degree* = 1**)



Recommendation System: Case 2

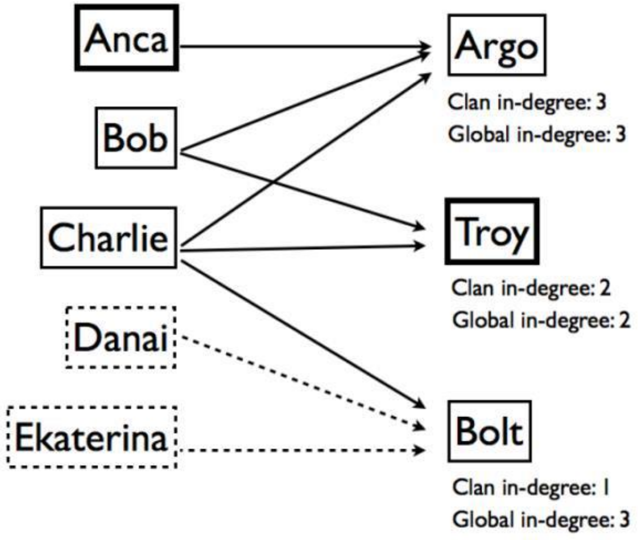
- If a user *u* has "liked" **at least one** movie:

  2. Retrieve all the movies that have been liked by user *u*'s movie clan:

     - The final list of recommendations for Anca:

       - *Troy (clan in-degree = 2)*
       - *Bolt (clan in-degree = 1)*

     - *Top 5 with the largest clan in-degree*


Anca
Bob
Charlie
Danai
Ekaterina
Argo
Clan in-degree: 3
Global in-degree: 3
Troy
Clan in-degree: 2
Global in-degree: 2
Bolt
Clan in-degree: 1
Global in-degree: 3