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COMP 3111: Software Engineering

Lecture 11 Exercise: Refactoring a Method

A class called Group has a method called getUsers(). Below are three versions of that method. Rank the versions from best (1) to worst (3) by writing the rank in the box to the left of the version.

<u>Version 1</u>

```
public class Group…
    public List getUsers() {
        List users = new ArrayList();

        if (!userDirectoryExists())
            return users;

        // Add found users to users collection
        File[] files = new File(persistencePath()).listFiles();
        for (File file : files)
            if (file.isDirectory())
                users.add(new User(file.getName(), this));

        // Sort by most recently registered users
        Collections.sort(users, new User.UserComparatorByDescendingRegistration());

        return users;
    }
```

<u>Version 2</u>

```
public class Group…
    public List getUsers() {
        List users = new ArrayList();

        if (!userDirectoryExists())
            return users;

        addFoundUsersTo(users);

        sortByMostRecentlyRegistered(users);

        return users;
    }
```

<u>Version 3</u>

```
public class Group…

    // Gets users sorted by most recently registered user
    public List getUsers() {
        List users = new ArrayList();

        if (!new File(persistencePath()).exists())
            return users;

        File[] files = new File(persistencePath()).listFiles();
        for (File file : files)
            if (file.isDirectory())
                users.add(new User(file.getName(), this));

        Collections.sort(users, new User.UserComparatorByDescendingRegistration());

        return users;
    }
```