REDDIT CLONE

PROJECT PRESENTATION
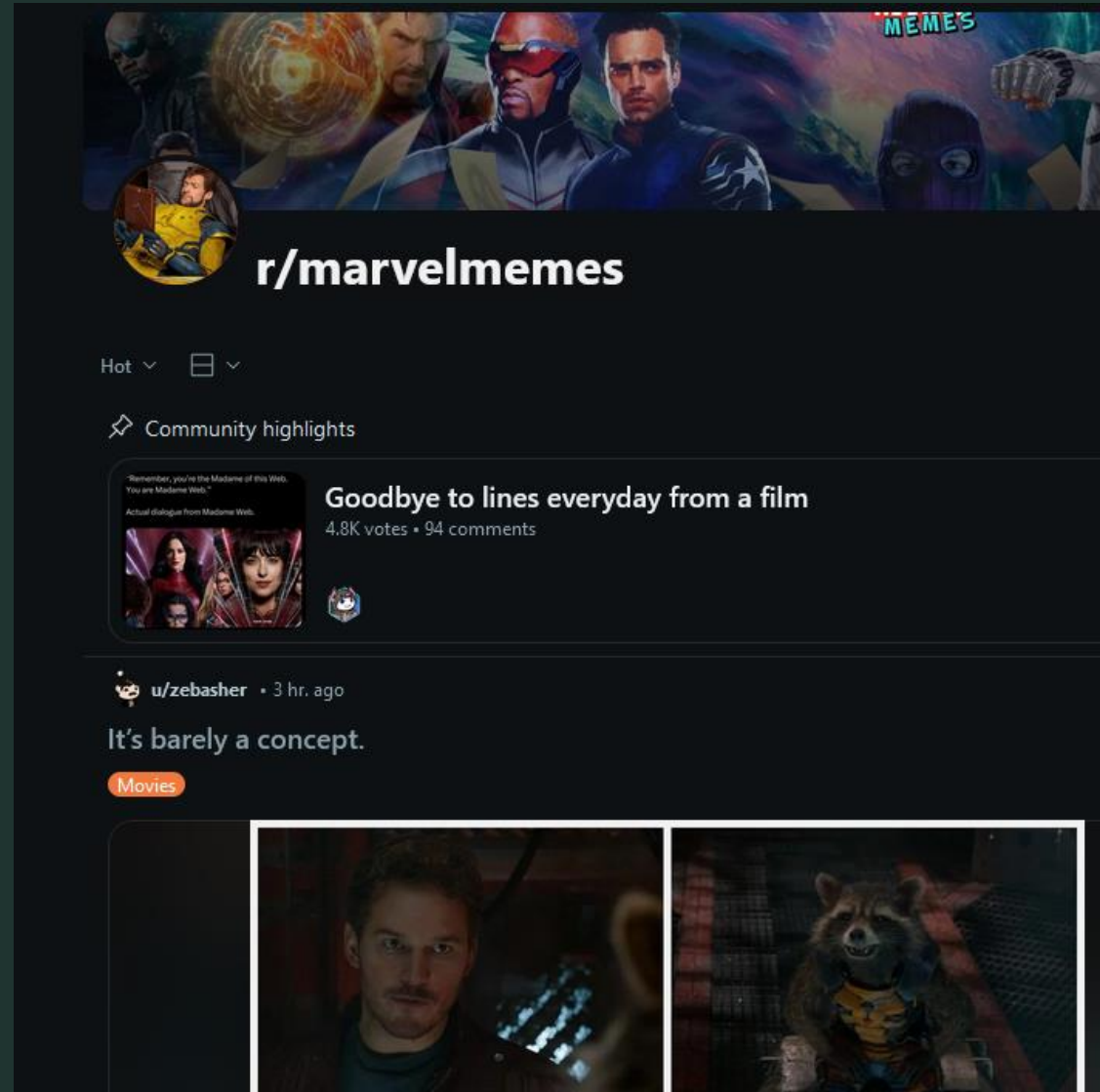### PROGRAMMING III

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R3DDIT

PROJECT PURPOSE

<u>Platform for online communities</u>

- Join communities of various topics of interest

- Share content

- Engage in discussions
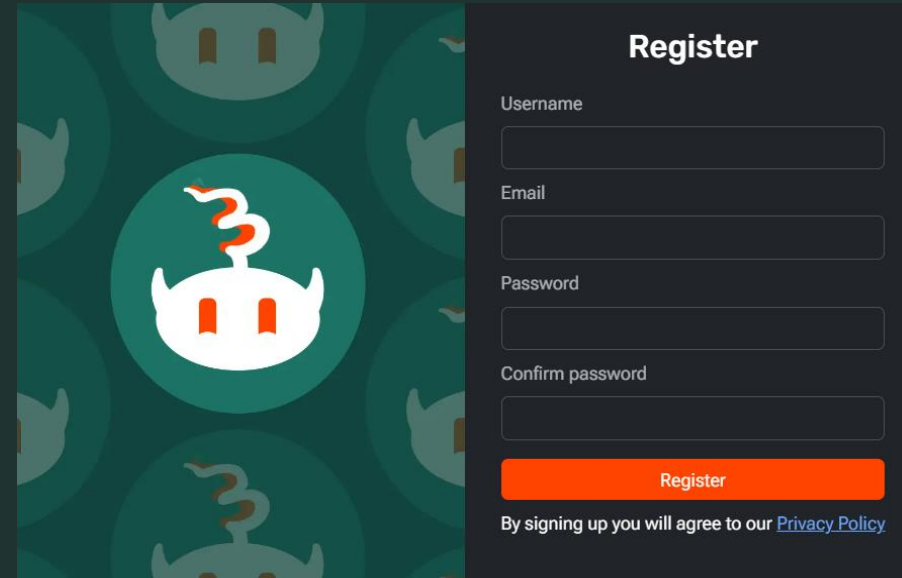
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PROJECT SOLUTION

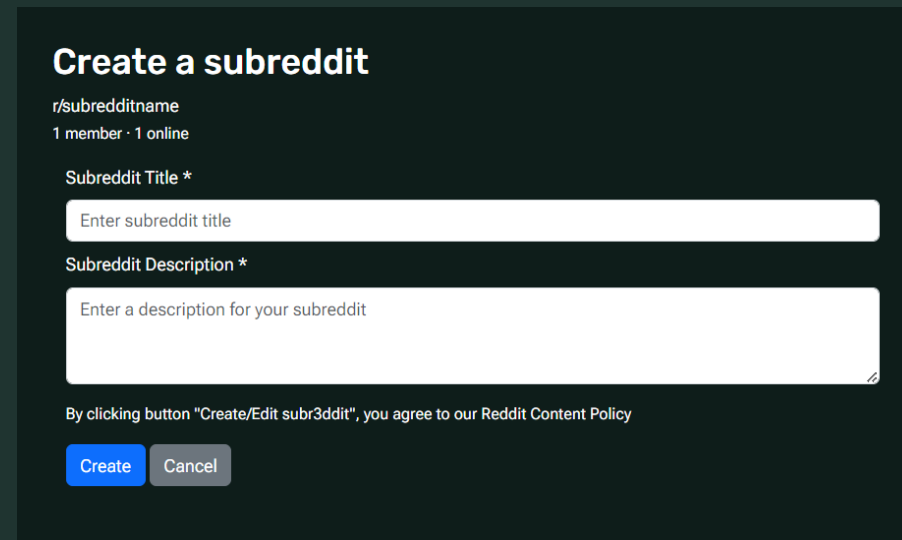## Features and Functionalities

- Forms & Thymeleaf blocks

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PROJECT SOLUTION

Features and Functionalities

• Subreddit Admin

ADMIN DASHBOARD

You are an admin of these subreddits

MARVEL

This is a subreddit dedicated to Marvel Comics, its publications and hundreds of characters. It is not affiliated with Marvel Entertainment, LLC and is an unofficial community owned and operated by dedicated fans.

View | Edit | Delete

Manage users

Username	
harry	Remove from subreddit

Technology_Den

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

View | Edit | Delete

Manage users

Search...   Search

Username	
harry	Remove from subreddit
Angel	Remove from subreddit
Alex	Remove from subreddit

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PROJECT SOLUTION

Features and Functionalities

- Subreddits & Posts

All Subr3ddits

| learnprogramming | Join |
| 0 Members | 0 Posts |

| gamedev | Joined |
| 3 Members | 1 Posts |

| MARVEL | Joined |
| 2 Members | 1 Posts |

| Scene_Harry | Admin |
| 3 Members | 0 Posts |

| Technology_Den | Joined |
| 4 Members | 1 Posts |

| Music_Harry | Admin |
| 3 Members | 0 Posts |

| Denis_subreddit | Joined |
| 2 Members | 0 Posts |

r/ MARVEL

This is a subreddit dedicated to Marvel Comics, its publications and hundreds of characters. It is not affiliated with Marvel Entertainment, LLC and is an unofficial community owned and operated by dedicated fans.

u/ harry • 21-09-2024 21:40

What if Captain America super soldier serum was temporary?

What if Steve Rogers' Super Soldier Serum was temporary and when he got stuck in ice, 70 years later he'd come out but without the serum, making him small and weak again.

6   0

+ Create Post   Joined

r/ MARVEL

This is a subreddit dedicated to Marvel Comics, its publications and hundreds of characters. It is not affiliated with Marvel Entertainment, LLC and is an unofficial community owned and operated by dedicated fans.

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Members

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PROJECT SOLUTION

Features and Functionalities

- Nested comments

- Search features

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PROJECT SOLUTION

USE CASE DIAGRAM

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User
- Post
- Create Subreddit
- Delete Own Posts & Comments
- Vote On Post & Comment
- Comment
- Edit Own Posts & Comments
- Delete Own Account

Moderator
- Delete Other Posts & Comments

Admin
- Delete Other Posts & Comments
- Delete Subreddit
- Edit Subreddit
- Ban User from Subreddit
- Appoint & remove Moderator
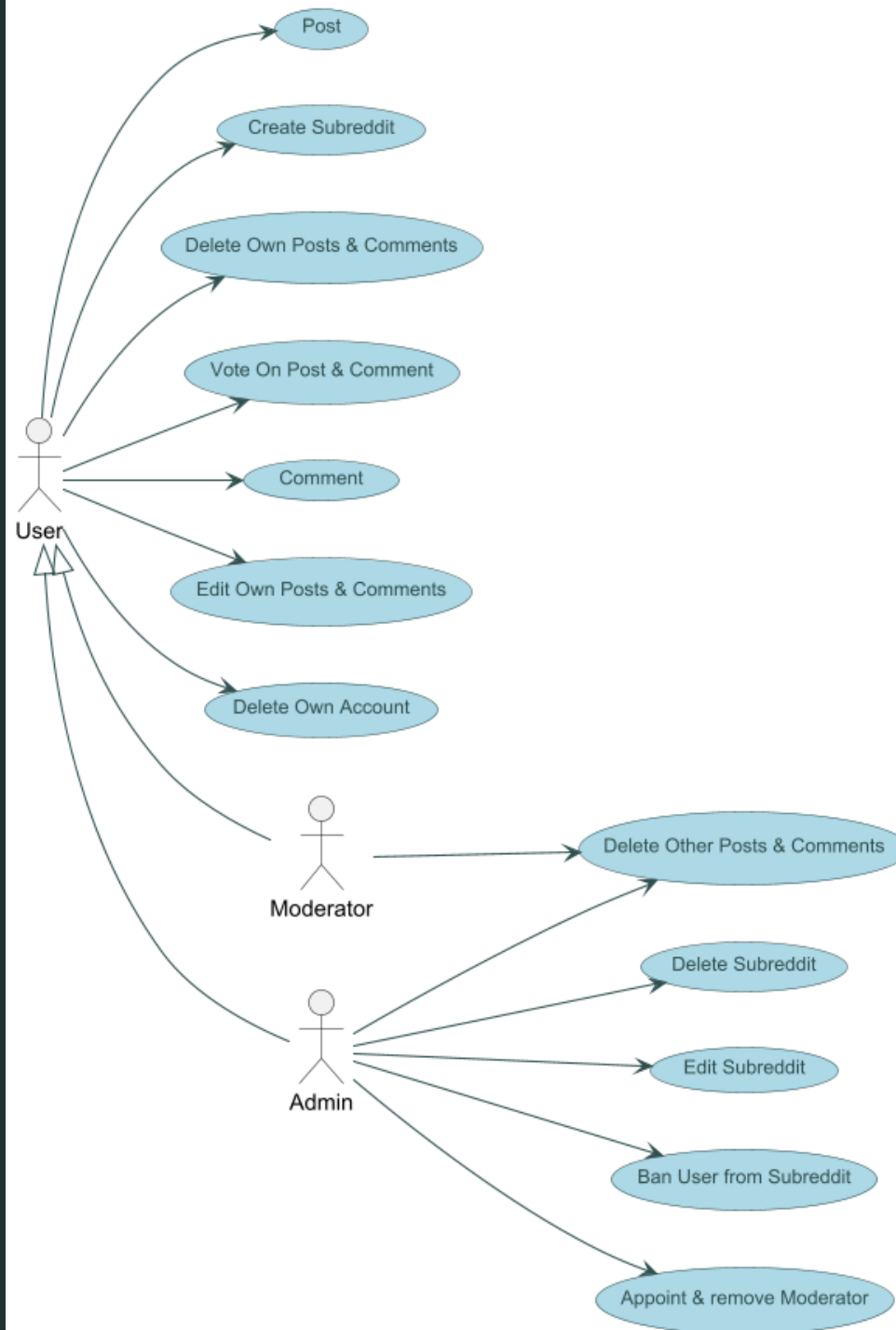
PROJECT SOLUTION

- Non-Users:

- Can **view feed** → **view subreddits** → **view posts** → **view comments** *(but can't generate content, vote, or comment).*

- Users:

- Can **create accounts** → log in
    - After logging in, users can:
        - create/join subreddits
            - In subreddits, users can:
                - create posts
                - **vote** (upvote/downvote)
                - comment on posts
        - If a user **creates a subreddit**, they become the **admin**, which allows them to:
            - edit subreddit
            - delete subreddit

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PROJECT SOLUTION
E/R DIAGRAM

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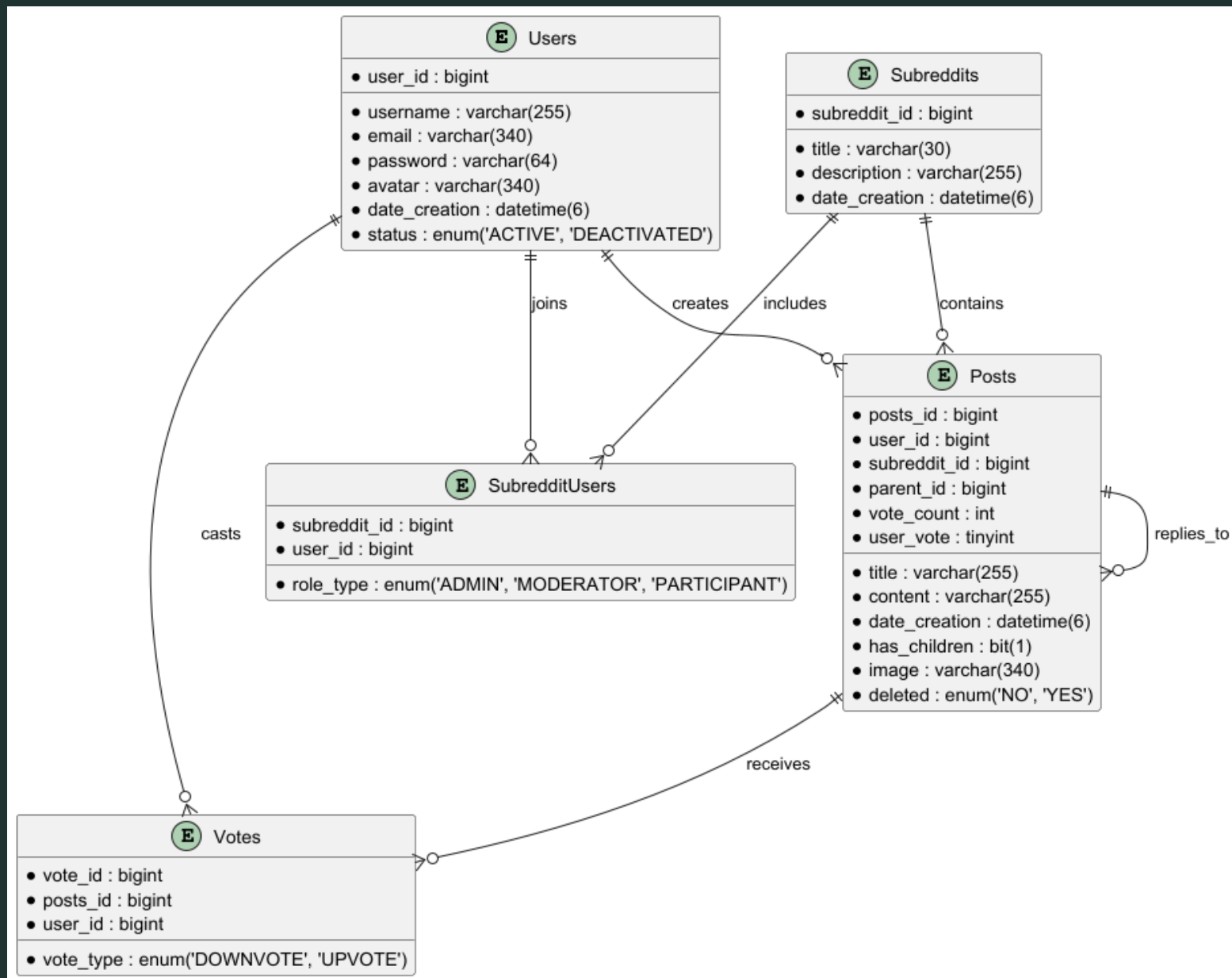
PROJECT SOLUTION
TRELLO BOARD

R3DDIT

Backlog

Moderator can manage subreddit
☑ 0/2

Admin can manage moderators
☑ 0/3

User can delete a comment
☑ 0/2

Code optimization
👁 ☑ 0/4   IS TP

Further development
☑ 0/7

＋ Add a card

StartedInProgress

User can edit a post/comment ✏
☰ ☑ 0/2   DT

User can create a subreddit
👁 ☰ 💬 3 ☑ 7/8   IS

User can delete a post
☰ ☑ 0/4   DT

Admin can manage subreddit users
👁 ☑ 1/3   IS

User can write a post
☰ ☑ 10/13   DT

＋ Add a card

DoneNeedsTesting

User can join/leave a subreddit
👁 ☰ ☑ 2/3   IS

Admin can edit a subreddit
👁 ☰ ☑ 2/2   IS

Admin can delete a subreddit
👁 ☰ 💬 1 ☑ 4/4   IS

User can vote on post/comment
☰ ☑ 5/5   IS

User can comment on posts
☑ 6/7   DT TP

＋ Add a card

Finished

R3DDIT

Create R3ddit branding
📎 2 ☑ 2/2   TP

User can register
☑ 6/6   TP

User can login
☑ 5/5   DT TP

User can update their profile
☑ 7/7   TP

Project setup
👁 ☰ ☑ 8/8   IS DT TP

User can delete their account
☑ 3/3   DT

Everyone can view posts from subreddits
☑ 1/1   IS

＋ Add a card

PROJECT SOLUTION

Technologies and libraries:

• Java using the Spring Boot framework

• JPA with MySQL database

• Thymeleaf for templates

• AJAX API requests

• Heroku for hosting

• AWS S3 bucket
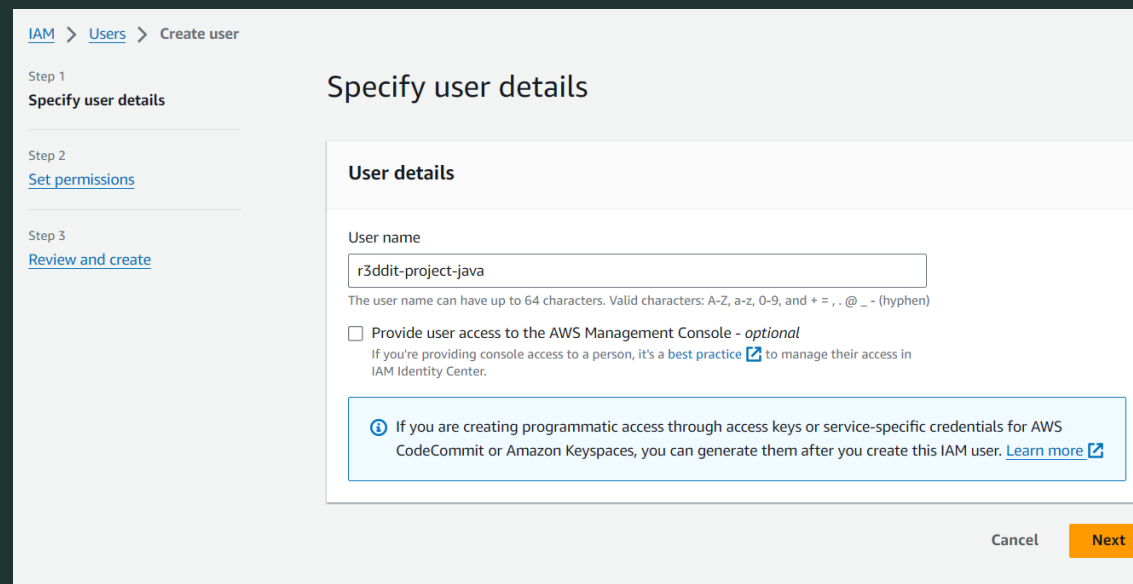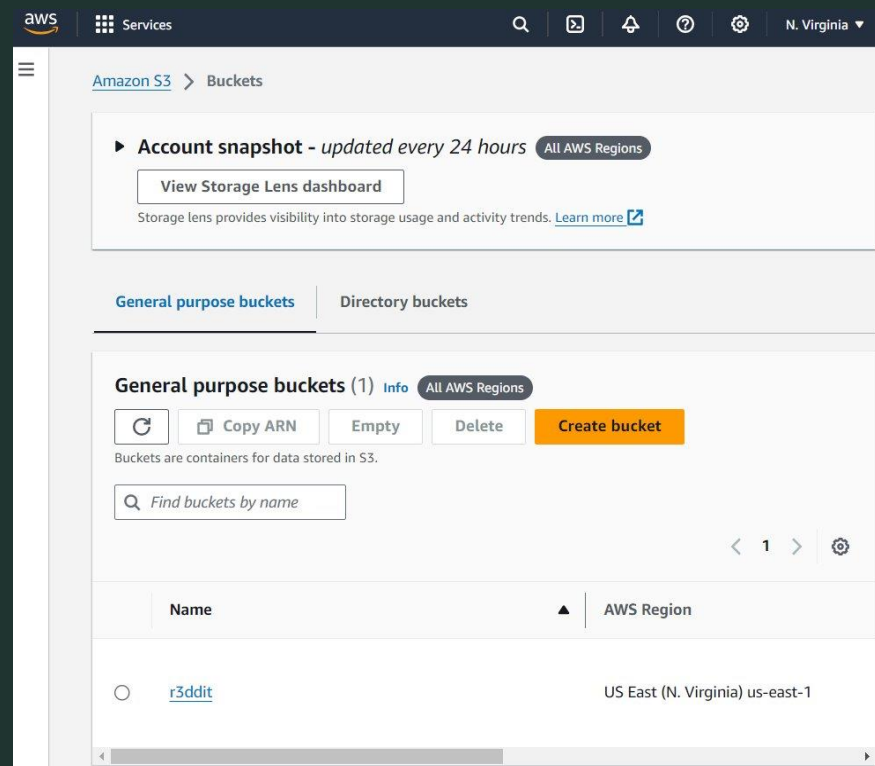
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CHALLENGES AND SOLUTIONS

☐ Subreddits with role permissions

☐ Voting system for posts

☐ Updating the content real-time

☐ Nested posts (comments)

☐ Security setup and JWT

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CHALLENGES AND SOLUTIONS

Technologies:

Amazon S3

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CHALLENGES AND SOLUTIONS

Technologies:

Amazon S3

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Bucket policy

Edit   Delete

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. Learn more [↗]

Copy

```
{
   "Version": "2012-10-17",
   "Statement": [
      {
         "Effect": "Allow",
         "Principal": {
            "AWS": "arn:aws:iam::            6:root"
         },
         "Action": "s3:*",
         "Resource": "arn:aws:s3:::r3ddit/*"
      },
      {
         "Sid": "PublicReadGetObject",
         "Effect": "Allow",
         "Principal": "*",
         "Action": "s3:GetObject",
         "Resource": "arn:aws:s3:::r3ddit/*"
      }
   ]
}
```

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CHALLENGES AND SOLUTIONS

<u>Technologies:</u>

Amazon S3

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CHALLENGES
AND
SOLUTIONS

```java
//upload files to s3
private void uploadFileToS3bucket(String fileName, File file) {  1 usage  ▲ Tamara Plante
    PutObjectRequest putObjectRequest = PutObjectRequest
                                        .builder()
                                        .bucket(bucketName)
                                        .key(fileName)
                                        .build();

    amazonS3.putObject(putObjectRequest, RequestBody.fromFile(file));
}


/**
 * Delete the file from Amazon S3 bucket.
 * @param fileUrl the file url
 */
public void deleteFileFromS3Bucket(String fileUrl) throws SdkException {  1 usage  ▲ Tamara Plante
    String fileName = fileUrl.replace(url, replacement: "");
    DeleteObjectRequest deleteObjectRequest = DeleteObjectRequest
                                              .builder()
                                              .bucket(bucketName)
                                              .key(fileName)
                                              .build();

    amazonS3.deleteObject(deleteObjectRequest);
}
```

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Tabs: java | User.java × | CommentDto.java | UserProfileDto.java

```java
@NoArgsConstructor                                                    ⚠1
@AllArgsConstructor
public class User {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private Long userId;

    @Column(nullable = false, unique = true)
    private String username;

    @Column(length = 340)
    private String email;

    @Column(length = 64)
    private String password;

    @Column(length = 340)
    private String avatar;

    @Temporal(TemporalType.TIMESTAMP)
    private LocalDateTime dateCreation;



    @Enumerated(EnumType.STRING)
    private Status status;

    public enum Status {   7 usages   👤 vvaraksn
```

Tab: UserProfileDto.java ×

```java
public class UserProfileDto {
    private Long userId;

    @Size(min = 4, max = 20, message = "Username must be between 4 and 20 characters.")
    private String username;

    @Email
    private String email;

    @Size(max = 64, message = "Password can't exceed 64 characters.")
    private String password; // Encrypted

    @Transient
    @Pattern.List({
        @Pattern( // Empty string or match pattern
            regexp = "^$|(?=.*[a-z])(?=.*[A-Z])(?=.*[0-9])(?=.*[\\W_]).*+",
            message = "Password must contain at least one uppercase, one lowercase letter, one number and
        @Pattern( // Empty string or match length
            regexp = "^$|.{6,40}.+",
            message = "Password must be between 6 and 40 characters.")
    })
    private String passwordTemp;
```

DATA TRANSFER OBJECT

```java
@Data   14 usages   👤 Tamara Plante
@AllArgsConstructor
@NoArgsConstructor
public class UserSlimDto {

    private Long userId;

    private String username;

    private String avatar;

}
```

DTO

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CHALLENGES
AND
SOLUTIONS

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JOIN QUERIES WITH JPA

An interesting problem, voting on social media.
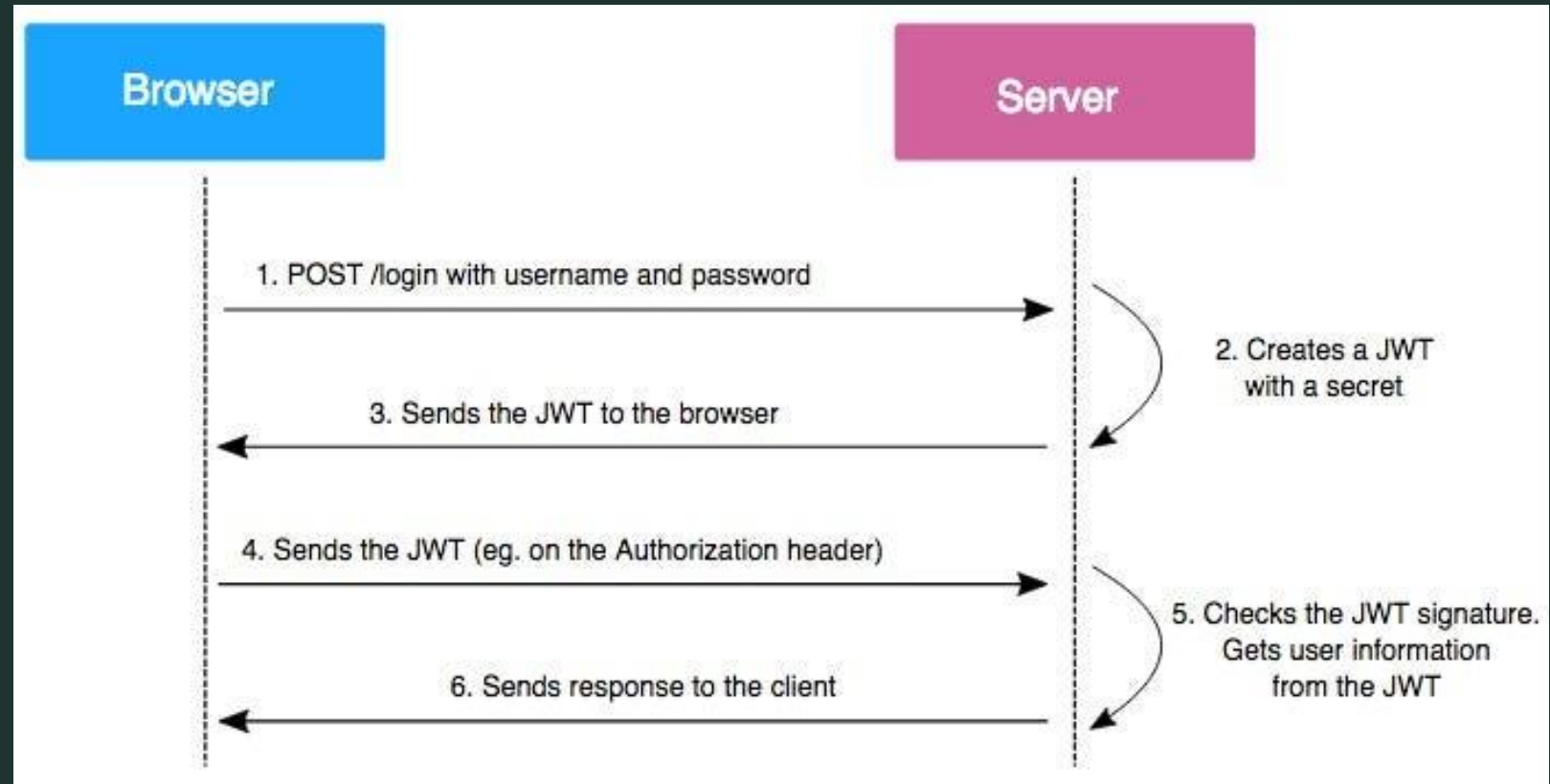
JPA works with Entity associations.

Filtering beyond associations becomes complex.

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WHAT WE LEARNED

Technologies:

JWT

JSON Web Token

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```
$.ajax({
  url: "http://localhost:8080/login",
  type: 'GET',
  // Fetch the stored token from localStorage and set in the header
  headers: {"Authorization": "Bearer " + localStorage.getItem('token')}
});
```

WHAT WE LEARNED

Made up of 3 components:

Header
Payload
Signature

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FUTURE WORK

- Posting video

- Notifications

- Login with Google, etc.

- Add subreddit rules

- Reset password with email

- Mobile Friendly

- Lazy loading as content grows

- Avoid using username for authentication and display name

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SUMMARY

Fully functional Reddit clone with

- creating communities

- participating in discussions

- see updates in joined communities

- enjoying the website !

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