



R3DDIT

REDDIT CLONE

PROJECT PRESENTATION
PROGRAMMING III

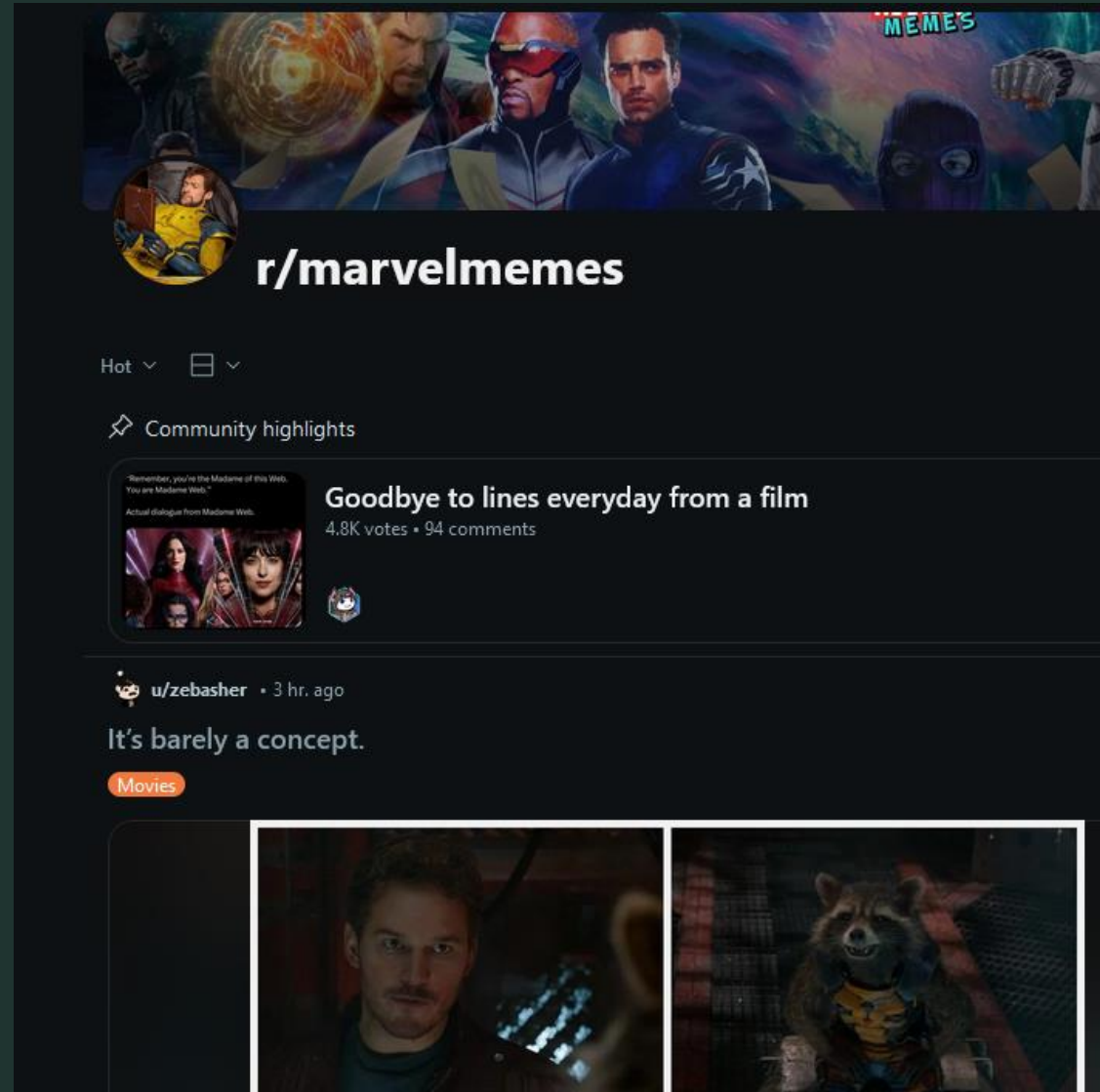
Tamara Plante | Dimitri Teolis | Iana Setrakova

PROJECT PURPOSE

Platform for online communities

- Join communities of various topics of interest
- Share content
- Engage in discussions

R3DDIT




PROJECT SOLUTION

Features and Functionalities

- Forms & Thymeleaf blocks

R3DDIT



Register

Username

Email

Password

Confirm password

Register

By signing up you will agree to our [Privacy Policy](#)

Create a subreddit

r/subredditname
1 member · 1 online

Subreddit Title *

Subreddit Description *

By clicking button "Create/Edit subr3ddit", you agree to our [Reddit Content Policy](#)

Create Cancel

PROJECT SOLUTION

Features and Functionalities

- Subreddit Admin

R3DDIT

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

PROJECT SOLUTION

Features and Functionalities

- Subreddits & Posts

All Subr3ddits

learnprogramming 0 Members 0 Posts Join	gamedev 3 Members 1 Posts Joined	MARVEL 2 Members 1 Posts Joined
Scene_Harry 3 Members 0 Posts Admin	Technology_Den 4 Members 1 Posts Joined	Music_Harry 3 Members 0 Posts Admin
Denis_subreddit 2 Members 0 Posts 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.

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.

2
Members

R3DDIT

PROJECT SOLUTION

Features and Functionalities

- Nested comments
- Search features

R3DDIT

← r/ Technology_Den • 21-09-2024 20:31

u/ Angel

WHAT IT SKILLS/TECHNOLOGIES ARE MOST FUTURE-PROOF?

I cannot help but wonder what skillset should I invest my time into to have a career that will be in demand for years to come.



12



2

Add a comment

Submit

Comments



harry • 22/09/2024 18:12:05

If you could instantly master one skill, what would it be?



3



Reply



harry • 9/22/2024, 6:12:11 PM

I'm going into college this year and would like to make a decision as to which tech field to pursue so as to be best equipped for the job market when I graduate in 4 years or 6 years if I do a master's too.



0



Reply



denis • 9/23/2024, 8:05:07 AM

Data engineering, cloud infrastructure, machine learning operations. Knowing how to develop, test and deploy all of this



1

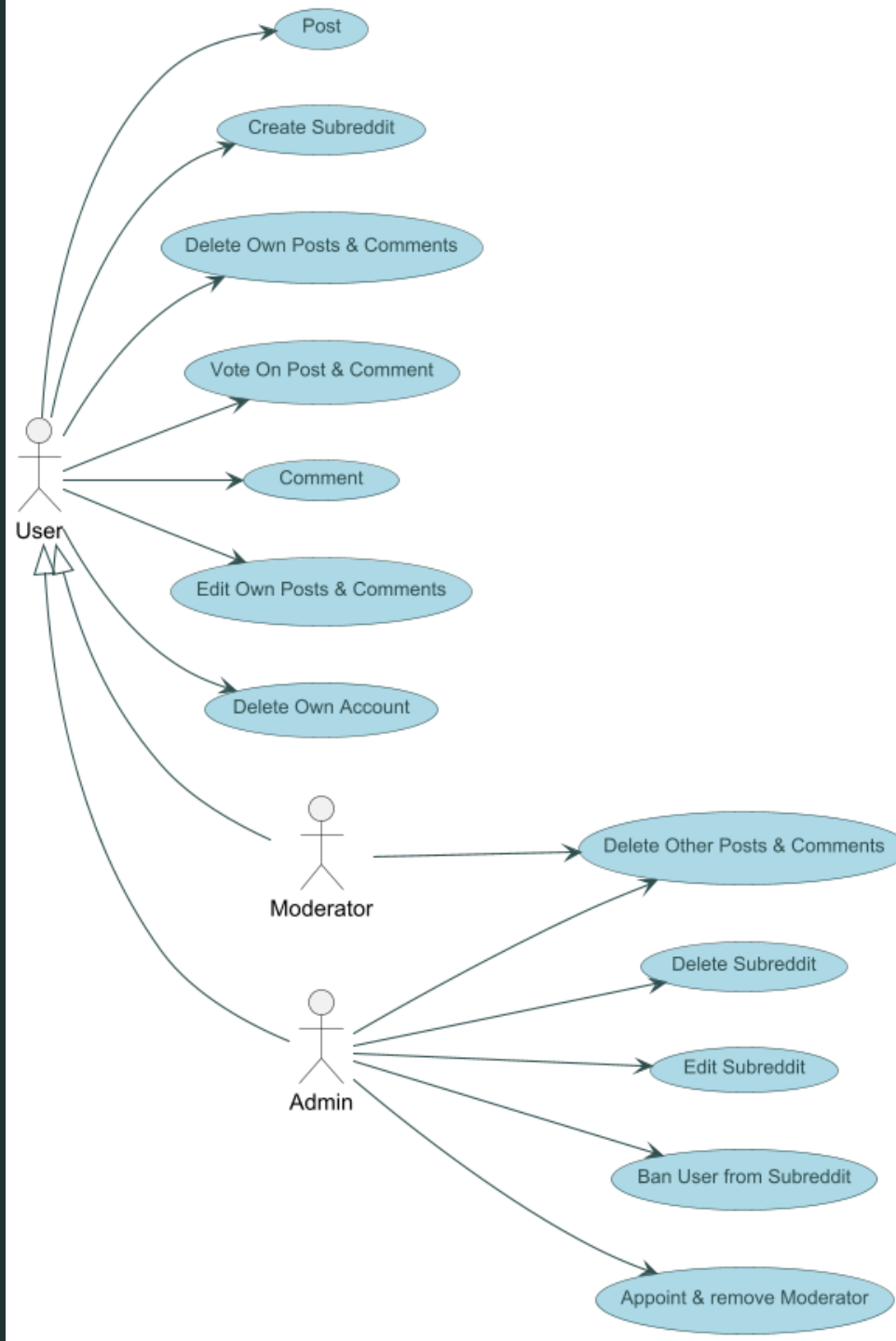


Reply

PROJECT SOLUTION

USE CASE DIAGRAM

R3DDIT

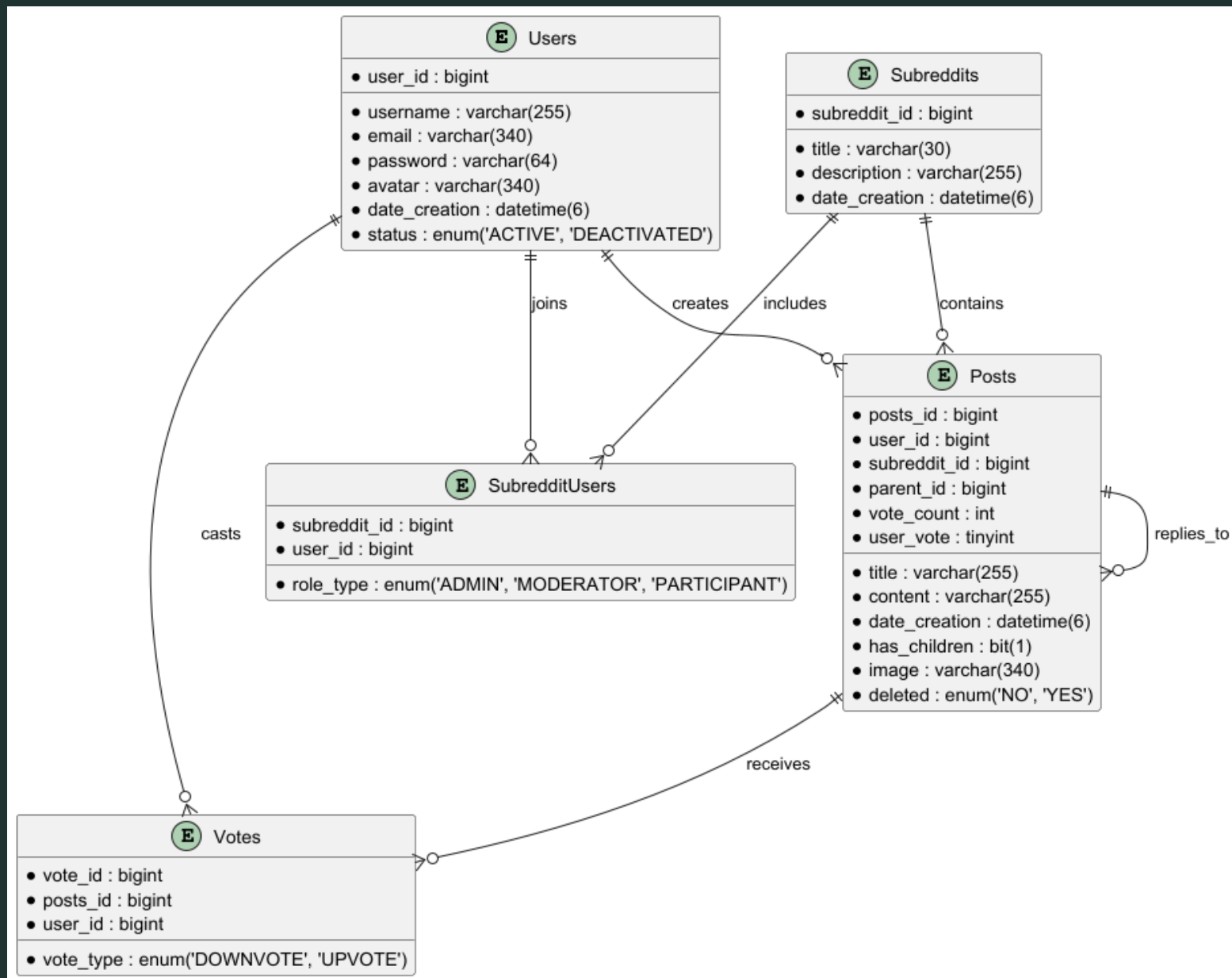


PROJECT SOLUTION

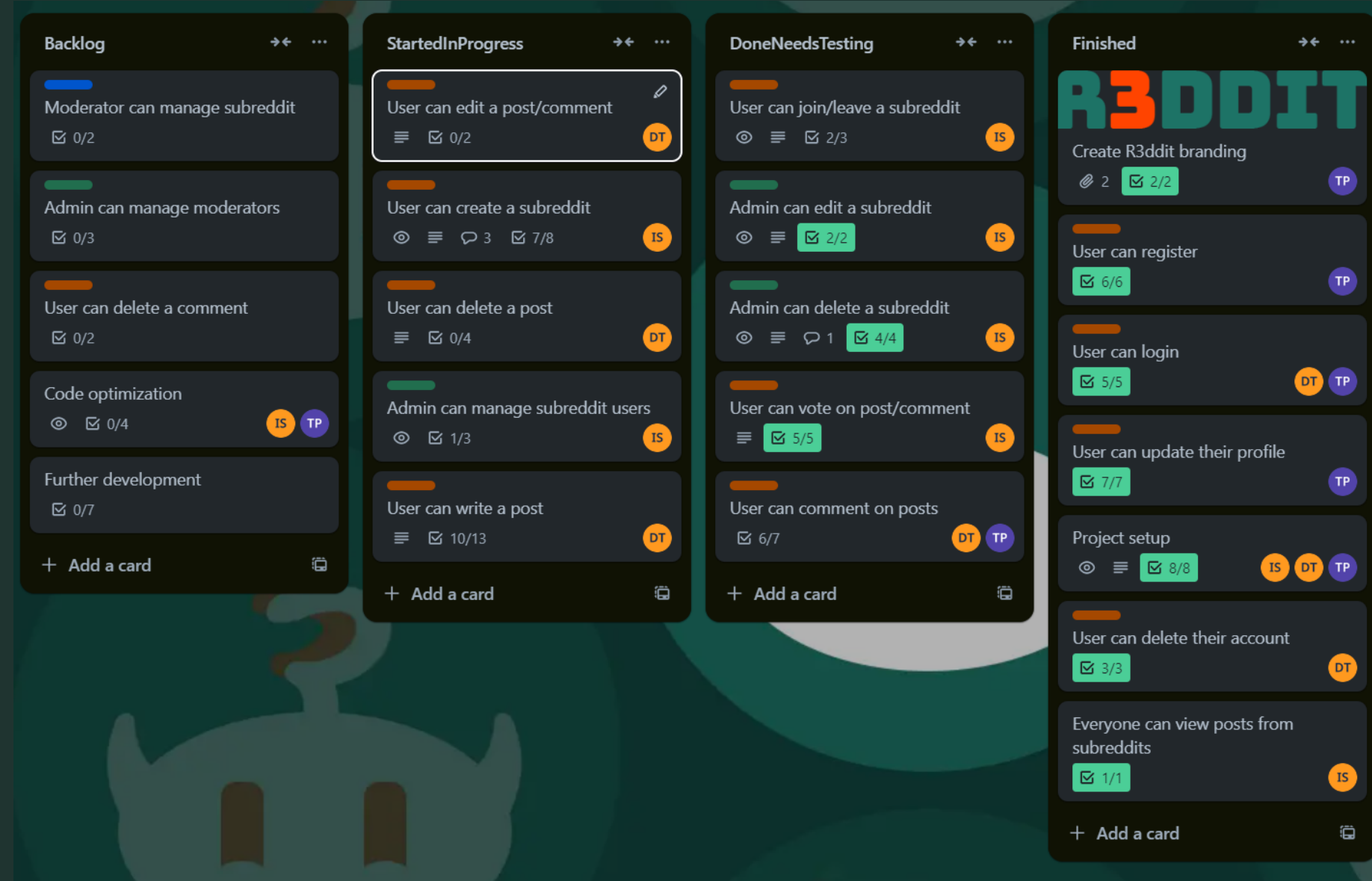
- Non-Users:
 - Can view feed → view subreddits → view posts → view comments
(but can't generate content, vote, or comment).
- Users:
 - Can create accounts → log in
 - After logging in, users can:
 - create/join subreddits
 - In subreddits, users can:
 - create posts
 - vote (upvote/downvote)
 - comment on posts
 - If a user creates a subreddit, they become the **admin**, which allows them to:
 - edit subreddit
 - delete subreddit

PROJECT SOLUTION

E/R DIAGRAM



PROJECT SOLUTION



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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

CHALLENGES AND SOLUTIONS

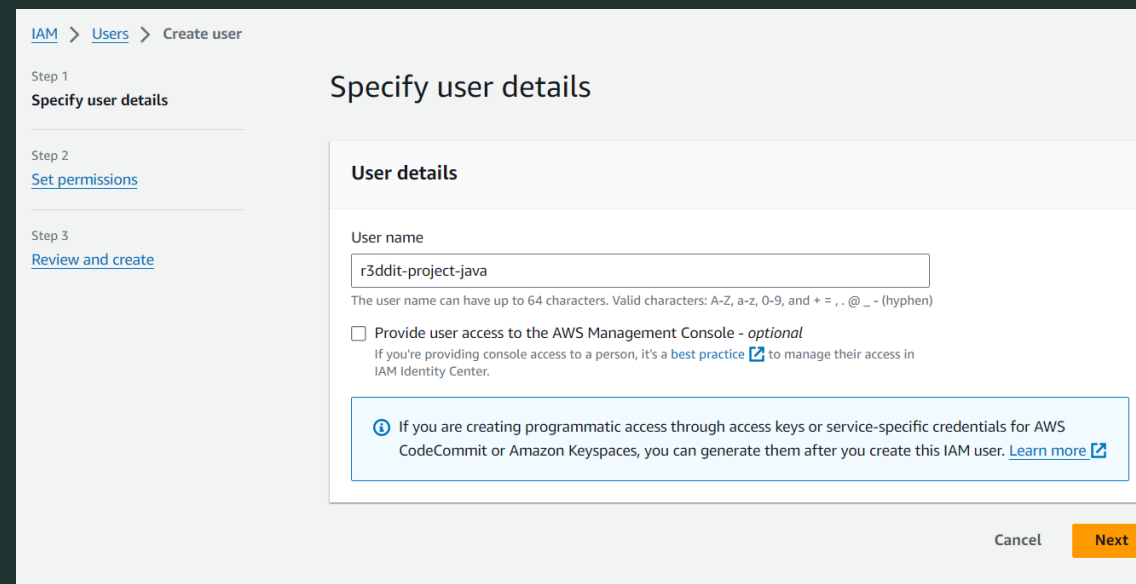
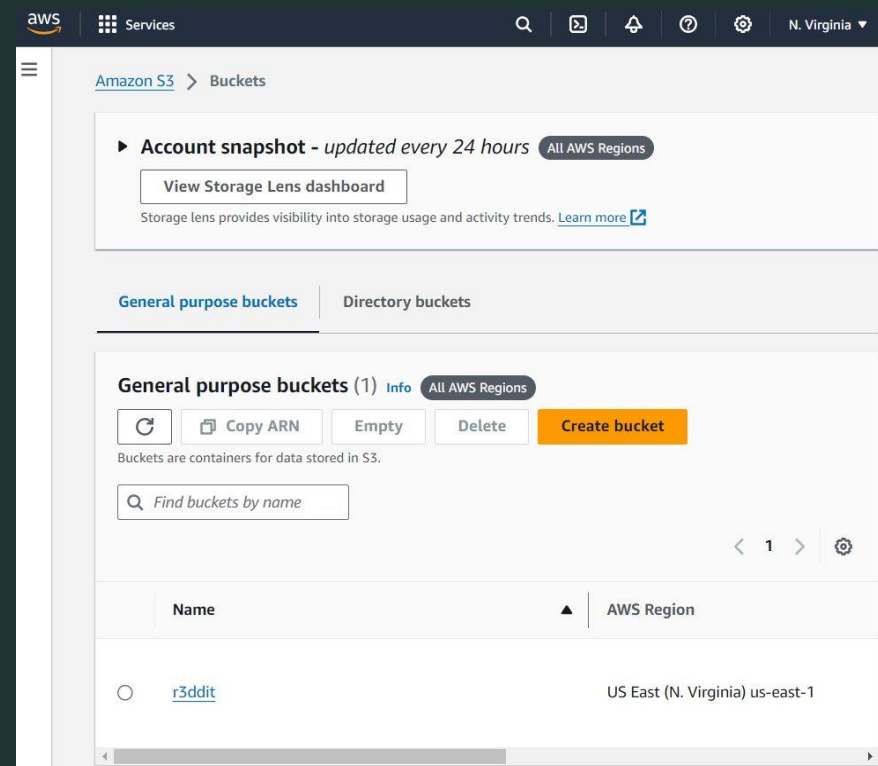
- ❑ Subreddits with role permissions
- ❑ Voting system for posts
- ❑ Updating the content real-time
- ❑ Nested posts (comments)
- ❑ Security setup and JWT

CHALLENGES AND SOLUTIONS

Technologies:

Amazon S3

R3DDIT



CHALLENGES AND SOLUTIONS

Technologies:

Amazon S3

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Bucket policy

EditDelete

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](#)

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

Copy

CHALLENGES AND SOLUTIONS

Technologies:

Amazon S3

The screenshot displays the AWS Management Console interface for an Amazon S3 bucket named 'r3ddit'. The left-hand navigation pane shows the 'Amazon S3' service with various options like Buckets, Access Grants, and Storage Lens. The main content area shows the bucket's details, including tabs for Objects, Properties, Permissions, Metrics, Management, and Access Points. Under the 'Objects' tab, there are buttons for 'Create folder', 'Upload', 'Copy S3 URI', 'Copy URL', 'Download', 'Open', 'Delete', and 'Actions'. Below these buttons is a search bar labeled 'Find objects by prefix'. A table lists the objects in the bucket, including their names, types, and last modified dates.

<input type="checkbox"/>	Name	Type	Last modified
<input type="checkbox"/>	1726987254629-avatar.png	png	September 22, 2024, 02:40:59
<input type="checkbox"/>	1727060786765-images.jpg	jpg	September 22, 2024, 23:06:28
<input type="checkbox"/>	1727090790763-avatar_default_1.png	png	September 23, 2024, 07:26:31
<input type="checkbox"/>	1727090842888-communityicon_xg8k3q1u1z271.png	png	September 23, 2024, 07:27:23
<input type="checkbox"/>	1727090927826-b1bcf27b-2749-443f-9fc5-26cedc8eb208.png	png	September 23, 2024, 07:28:48
<input type="checkbox"/>	1727097223422-TFND1179.JPG	JPG	September 23, 2024, 09:13:44

R3DDIT

AMAZON S3, VERSION 2

CHALLENGES AND SOLUTIONS

```
//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);
}
```



```

java    © User.java ×    © CommentDto.java    © UserProfileDto.java    ©
12    @NoArgsConstructor
13    @AllArgsConstructor
14    public class User {
15
16        @Id
17        @GeneratedValue(strategy = GenerationType.IDENTITY)
18        private Long userId;
19
20        @Column(nullable = false, unique = true)
21        private String username;
22
23        @Column(length = 340)
24        private String email;
25
26        @Column(length = 64)
27        private String password;
28
29        @Column(length = 340)
30        private String avatar;
31
32        @Temporal(TemporalType.TIMESTAMP)
33        private LocalDateTime dateCreation;
34
35
36        @Enumerated(EnumType.STRING)
37        private Status status;
38
39        public enum Status { 7 usages  vvaraksn

```

DTO

```

UserProfileDto.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

```

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

    private Long userId;

    private String username;

    private String avatar;

}

```

CHALLENGES AND SOLUTIONS

JOIN QUERIES WITH JPA

An interesting problem, voting on social media.

JPA works with Entity associations.

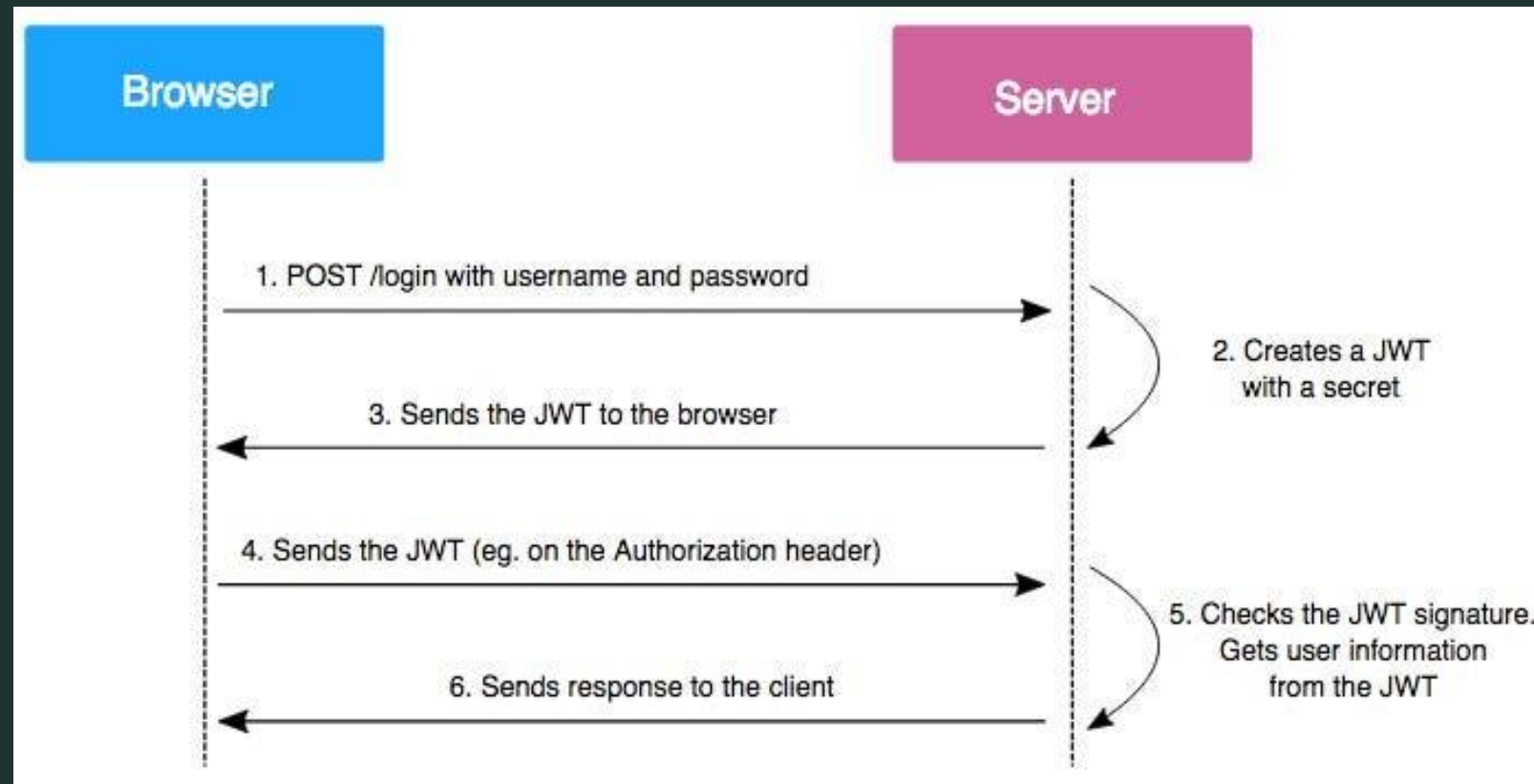
Filtering beyond associations becomes complex.

WHAT WE LEARNED

Technologies:

JWT

JSON Web Token




```
$.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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 **JWT**

Debugger Libraries Introduction Ask

Crafted by  Auth0 by Okta

Algorithm HS256

Encoded

PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY3ODkwIiwibmFtZSI6IkpvaG4gRG9lIiwiaWF0IjoxNTE2MjM5MDIyfQ.SflKxwRJSMeKKF2QT4fwpMeJf36P0k6yJV_adQssw5c
```

Decoded

EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE


```
{  "alg": "HS256",  "typ": "JWT"}
```

PAYLOAD: DATA

```
{  "sub": "1234567890",  "name": "John Doe",  "iat": 1516239022}
```

VERIFY SIGNATURE

```
HMACSHA256(  
  base64UrlEncode(header) + "." +  
  base64UrlEncode(payload),  
  your-256-bit-secret  
) ☐ secret base64 encoded
```

 Signature Verified

SHARE JWT

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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