Experiment No - 04

Roll No.	52
Name	Kshitij Nangare
Class	D15B
Subject	Full Stack Development
Lab Outcome	L1, L2, L3
Date of Performance / Submission	11/08/2025 18/08/2025
Signature & Grades	

Experiment 4

Aim : REST API Design with MongoDB + Mongoose Integration

Code:

backend > config > JS db.js > ...

```
1   import mongoose from 'mongoose';  581.7k (gzipped: 145.3k)
2   import dotenv from 'dotenv';  7.2k (gzipped: 3.1k)
3
4   dotenv.config();
5
6   export const connectDB = async () => {
7     try {
8       await mongoose.connect(process.env.MONGO_URI);
9       console.log('MongoDB Connected...');
10    } catch (err) {
11      console.error('Database connection error:', err.message);
12      process.exit(1);
13    }
14  };
15
```

Figure 1

```
import mongoose from "mongoose";  581.7k (gzipped: 145.3k)

const SessionSchema = new mongoose.Schema({
  user_id: {
    type: mongoose.Schema.Types.ObjectId,
    ref: "User",
    required: true
  },
  title: {
    type: String,
    trim: true
  },
  description: {
    type: String,
    default: ""
  },
  youtube_url: {
    type: String,
    trim: true
  },
  tags: {
    type: [String],
    default: []
  },
  status: {
    type: String,
    enum: ["draft", "published"],
    default: "draft"
  },
  imageUrl: {
    type: String,
    default: ""
  },
  likes: {
    type: Number,
    min: 0,
    default: 0
  },
  // NEW: Array to store IDs of users who liked this session
  likedBy: {
    type: [mongoose.Schema.Types.ObjectId],
    ref: "User", // Assuming you have a 'User' model
    default: []
  },
},{
  timestamps: true // This will automatically add createdAt and updatedAt
});


const Session = mongoose.model("Session", SessionSchema);

export default Session;
```

Figure 2

```
export const getAllPublishedSessions = async (req, res) => {
  try {
    const { search } = req.query; // Extract search term from query parameters

    let query = { status: 'published' };
    if (search) {
      // Create a case-insensitive regex for title or tags
      const searchRegex = new RegExp(search, 'i');
      query.$or = [
        { title: { $regex: searchRegex } },
        { tags: { $in: [searchRegex] } } // Search within the tags array
      ];
    }

    const sessions = await Session.find(query)
      .populate('user_id', 'name email') // Populate creator details
      .sort({ createdAt: -1 }); // Sort by creation date, newest first

    res.json(sessions);
  } catch (err) {
    console.error("Error in getAllPublishedSessions:", err); // Log the error
    res.status(500).json({ message: err.message || "Server error" });
  }
};

// Get logged-in user's sessions
export const getMySessions = async (req, res) => {
  try {
    const sessions = await Session.find({ user_id: req.user._id })
      .populate('user_id', 'name email')
      .sort({ createdAt: -1 });
    res.json(sessions);
  } catch (err) {
    res.status(500).json({ message: err.message });
  }
};
```

Figure 3

```
export const getSessionById = async (req, res) => {
  try {
    const { id } = req.params; // Get the session ID from the URL parameters

    // Find the session and populate the user_id field to get creator's name and email
    const session = await Session.findById(id).populate('user_id', 'name email');

    if (!session) {
      return res.status(404).json({ message: 'Session not found.' });
    }

    res.status(200).json(session);
  } catch (error) {
    console.error('Error fetching session by ID:', error);
    // Handle specific CastError if ID format is invalid
    if (error.name === 'CastError') {
        return res.status(400).json({ message: 'Invalid session ID format.' });
    }
    res.status(500).json({ message: 'Server error.', error: error.message });
  }
};

// Create new session
export const createSession = async (req, res) => {

  const session = new Session({
    ...req.body,
    user_id: req.user._id
  });

  try {
    const newSession = await session.save();
    res.status(201).json(newSession);
  } catch (err) {
    res.status(400).json({ message: err.message });
  }
};
```

Figure 4

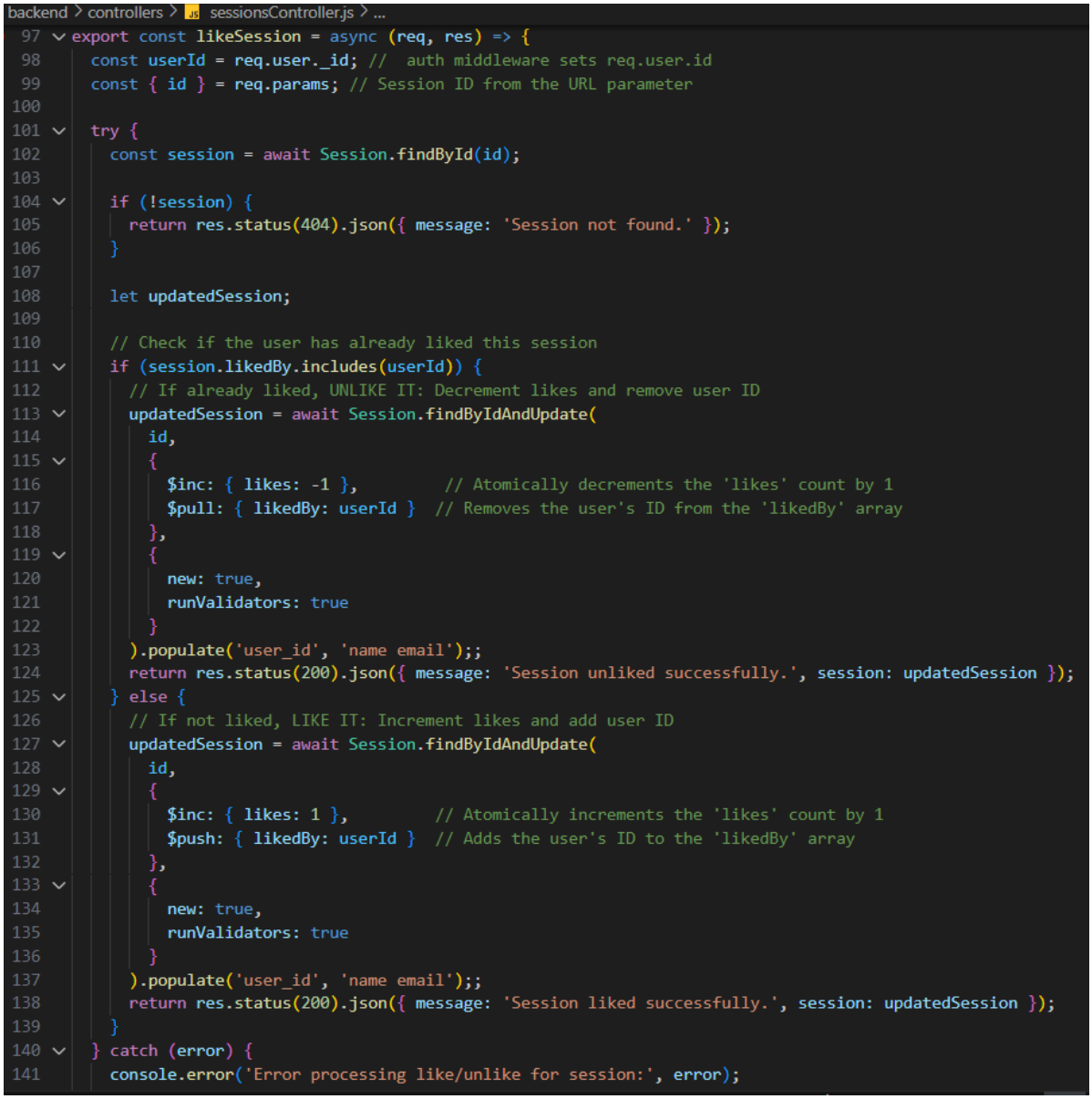

backend > controllers > sessionsController.js > ...
export const likeSession = async (req, res) => {
const userId = req.user._id; // auth middleware sets req.user.id
const { id } = req.params; // Session ID from the URL parameter
try {
const session = await Session.findById(id);
if (!session) {
return res.status(404).json({ message: 'Session not found.' });
}
let updatedSession;
// Check if the user has already liked this session
if (session.likedBy.includes(userId)) {
// If already liked, UNLIKE IT: Decrement likes and remove user ID
updatedSession = await Session.findByIdAndUpdate(
id,
{
$inc: { likes: -1 }, // Atomically decrements the 'likes' count by 1
$pull: { likedBy: userId } // Removes the user's ID from the 'likedBy' array
},
{
new: true,
runValidators: true
}
).populate('user_id', 'name email');;
return res.status(200).json({ message: 'Session unliked successfully.', session: updatedSession });
} else {
// If not liked, LIKE IT: Increment likes and add user ID
updatedSession = await Session.findByIdAndUpdate(
id,
{
$inc: { likes: 1 }, // Atomically increments the 'likes' count by 1
$push: { likedBy: userId } // Adds the user's ID to the 'likedBy' array
},
{
new: true,
runValidators: true
}
).populate('user_id', 'name email');;
return res.status(200).json({ message: 'Session liked successfully.', session: updatedSession });
}
} catch (error) {
console.error('Error processing like/unlike for session:', error);

Figure 5

```
// Update a session
export const updateSession = async (req, res) => {
  try {
    const session = await Session.findOneAndUpdate(
      { _id: req.params.id, user_id: req.user._id },
      req.body,
      { new: true }
    ).populate('user_id', 'name email');
    if (!session) return res.status(404).json({ message: 'Session not found' });
    res.json(session);
  } catch (err) {
    res.status(400).json({ message: err.message });
  }
};


// Delete a session
export const deleteSession = async (req, res) => {
  try {
    const session = await Session.findOneAndDelete({
      _id: req.params.id,
      user_id: req.user._id
    });
    if (!session) return res.status(404).json({ message: 'Session not found' });
    res.json({ message: 'Session deleted' });
  } catch (err) {
    res.status(500).json({ message: err.message });
  }
};
```

```
import mongoose from "mongoose";  581.7k (gzipped: 145.3k)

const UserSchema = new mongoose.Schema({
  email: {
    type: String,
    required: true,
    unique: true,
    lowercase: true,
    trim: true
  },
  name: {
    type: String,
    required: true,
    trim: true
  },
  password: {
    type: String,
    required: true
  },
  created_at: {
    type: Date,
    default: Date.now
  }
});


const User = mongoose.model("User", UserSchema);

export default User;
```

Figure 6

```
import User from '../models/User.js';
import { generateToken } from '../utils/jwtToken.js';
import bcrypt from 'bcryptjs';  20.1k (gzipped: 9k)

export const register = async (req, res) => {
  try {
    const { email,name, password } = req.body;

    // Validate input
    if (!email || !password || !name) {
      return res.status(400).json({ message: 'Email and password are required' });
    }

    // Check if user exists
    const existingUser = await User.findOne({ email });
    if (existingUser) {
      return res.status(409).json({ message: 'Email already in use' });
    }

    // Hash password
    const salt = await bcrypt.genSalt(10);
    const password_hash = await bcrypt.hash(password, salt);


    // Create new user
    const user = new User({ email,name, password: password_hash });
    await user.save();

    // Generate JWT
    const token = generateToken(user);

    res.status(201).json({
      token,
      user: {
        id: user._id,
        name: user.name,
        email: user.email
      }
    });
  } catch (error) {
    console.error('Registration error:', error);
    res.status(500).json({ message: 'Registration failed' });
  }
};
```

Figure 8

```
export const login = async (req, res) => {
  try {
    const { email, password } = req.body;

    // Validate input
    if (!email || !password) {
      return res.status(400).json({ message: 'Email and password are required' });
    }

    // Find user
    const user = await User.findOne({ email });
    if (!user) {
      return res.status(401).json({ message: 'Invalid Email or Password' });
    }

    // Check password
    const isMatch = await bcrypt.compare(password, user.password);
    if (!isMatch) {
      return res.status(401).json({ message: 'Invalid Email or Password' });
    }

    // Generate JWT
    const token = generateToken(user);

    res.json({
      token,
      user: {
        id: user._id,
        name: user.name,
        email: user.email
      }
    });
  } catch (error) {
    console.error('Login error:', error);
    res.status(500).json({ message: 'Login failed' });
  }
};
```

Figure 9

backend > controllers > authController.js > register

```
export const changePassword = async (req, res) => {
    const { currentPassword, newPassword } = req.body;

    // 1. Basic validation
    if (!currentPassword || !newPassword) {
        return res.status(400).json({ message: 'Please provide current password and new password.' });
    }

    if (newPassword.length < 4) {
        return res.status(400).json({ message: 'New password must be at least 4 characters long.' });
    }

    try {
        // req.user will come from your authentication middleware (e.g., JWT verification)
        // It should contain the ID of the authenticated user
        const user = await User.findById(req.user._id).select('+password'); // Select password field explicitly

        if (!user) {
            return res.status(404).json({ message: 'User not found.' });
        }

        // 2. Compare current password
        const isMatch = await bcrypt.compare(currentPassword, user.password);

        if (!isMatch) {
            return res.status(401).json({ message: 'Current password is incorrect.' });
        }

        // 3. Check if new password is the same as current password
        if (newPassword === currentPassword) {
            return res.status(400).json({ message: 'New password cannot be the same as the current password.' });
        }

        // 4. Hash the new password and save
        const salt = await bcrypt.genSalt(10);
        user.password = await bcrypt.hash(newPassword, salt); // Hash with a salt round of 10
        await user.save();

        res.status(200).json({ message: 'Password changed successfully!' });

    } catch (error) {
        console.error('Error changing password:', error);
        res.status(500).json({ message: 'Server error. Could not change password.' });
    }
};
```

Figure 10

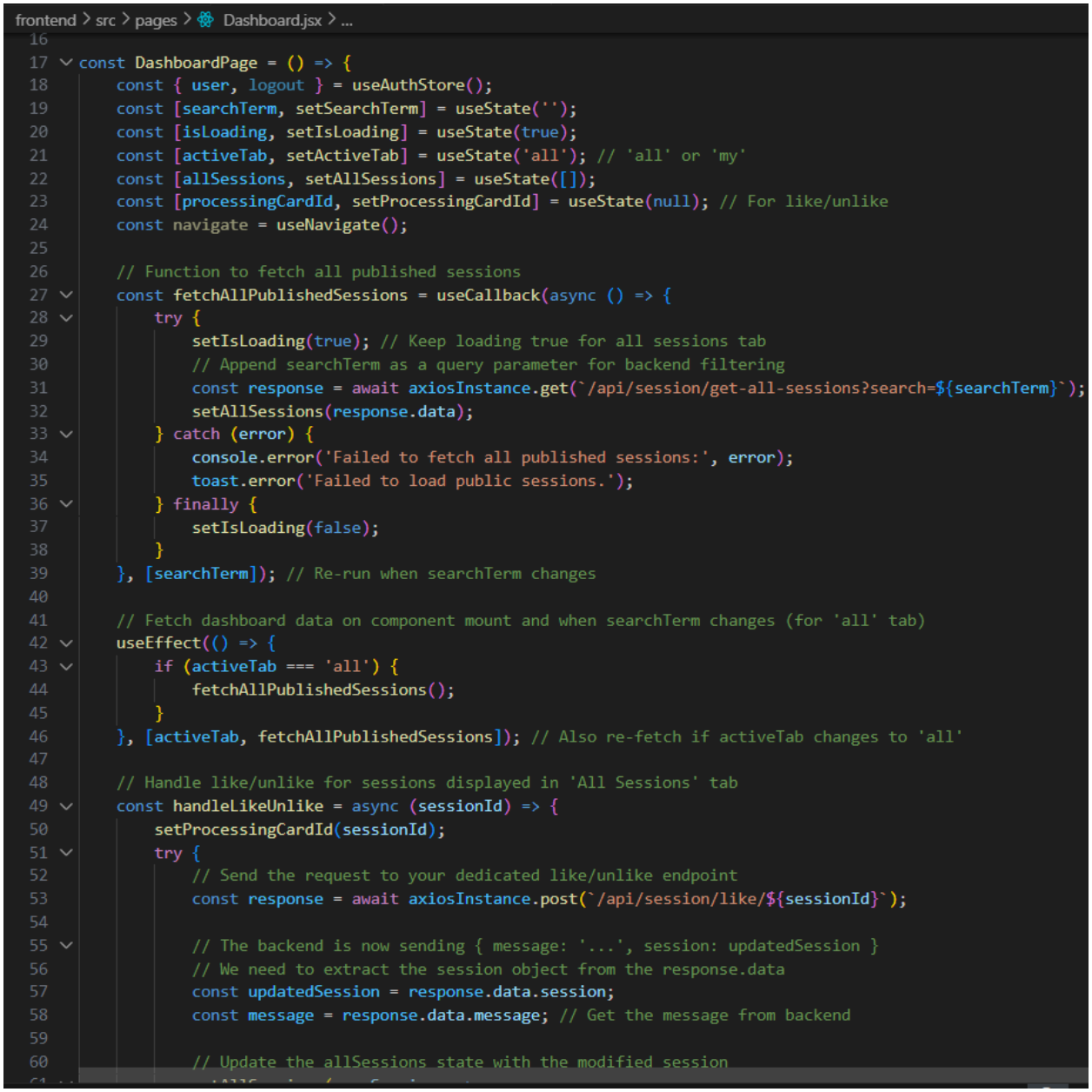

frontend > src > pages > Dashboard.jsx > ...
const DashboardPage = () => {
const { user, logout } = useAuthStore();
const [searchTerm, setSearchTerm] = useState('');
const [isLoading, setIsLoading] = useState(true);
const [activeTab, setActiveTab] = useState('all'); // 'all' or 'my'
const [allSessions, setAllSessions] = useState([]);
const [processingCardId, setProcessingCardId] = useState(null); // For like/unlike
const navigate = useNavigate();
// Function to fetch all published sessions
const fetchAllPublishedSessions = useCallback(async () => {
try {
setIsLoading(true); // Keep loading true for all sessions tab
// Append searchTerm as a query parameter for backend filtering
const response = await axiosInstance.get(`/api/session/get-all-sessions?search=${searchTerm}`);
setAllSessions(response.data);
} catch (error) {
console.error('Failed to fetch all published sessions:', error);
toast.error('Failed to load public sessions.');
} finally {
setIsLoading(false);
}
}, [searchTerm]); // Re-run when searchTerm changes
// Fetch dashboard data on component mount and when searchTerm changes (for 'all' tab)
useEffect(() => {
if (activeTab === 'all') {
fetchAllPublishedSessions();
}
}, [activeTab, fetchAllPublishedSessions]); // Also re-fetch if activeTab changes to 'all'
// Handle like/unlike for sessions displayed in 'All Sessions' tab
const handleLikeUnlike = async (sessionId) => {
setProcessingCardId(sessionId);
try {
// Send the request to your dedicated like/unlike endpoint
const response = await axiosInstance.post(`/api/session/like/${sessionId}`);
// The backend is now sending { message: '...', session: updatedSession }
// We need to extract the session object from the response.data
const updatedSession = response.data.session;
const message = response.data.message; // Get the message from backend
// Update the allSessions state with the modified session

Figure 11

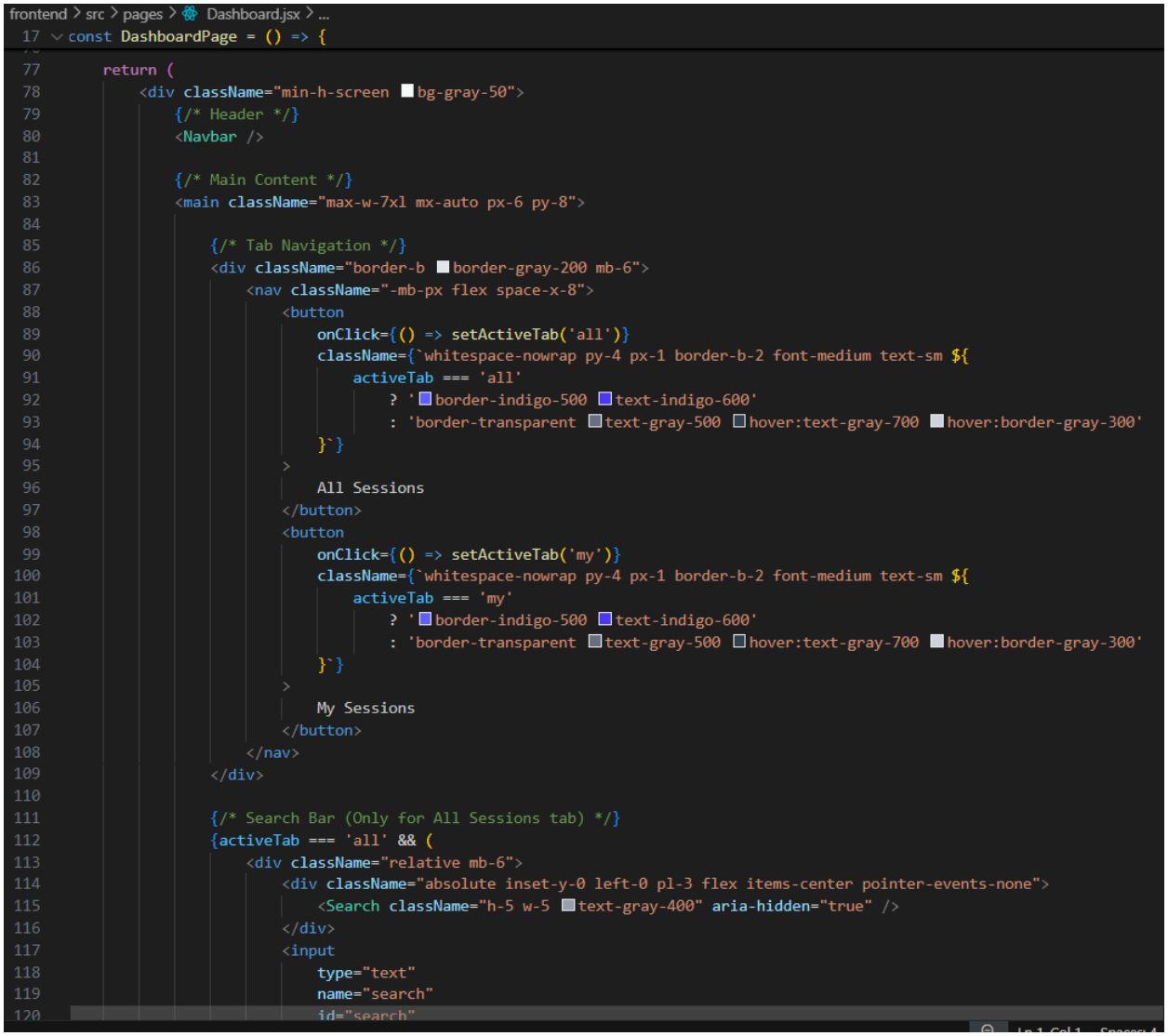
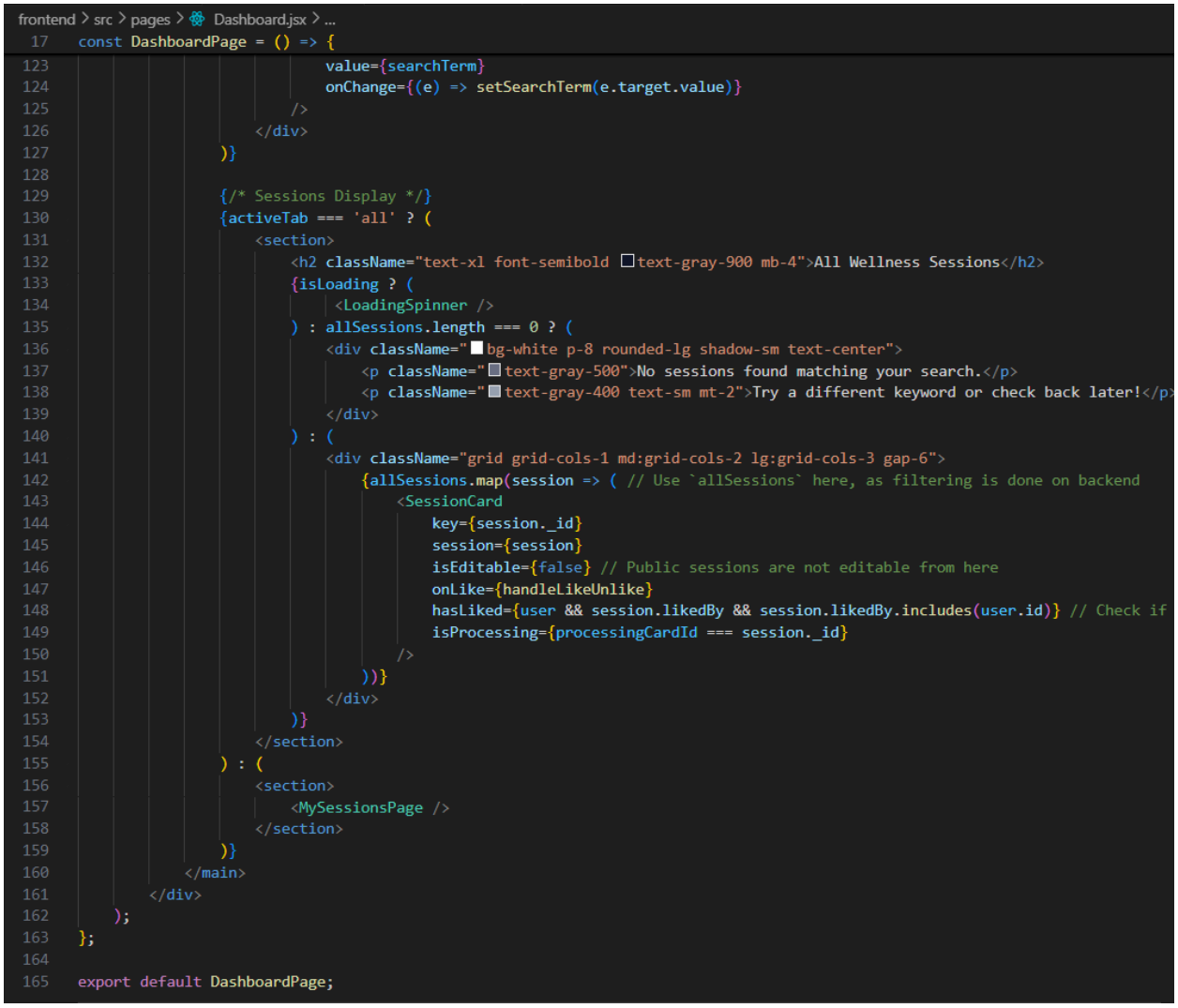

frontend > src > pages > Dashboard.jsx > ...
17 const DashboardPage = () => {
77 return (
78
79 {/* Header */}
80 <Navbar />
81
82 {/* Main Content */}
83 <main className="max-w-7xl mx-auto px-6 py-8">
84
85 {/* Tab Navigation */}
86
87 <nav className="-mb-px flex space-x-8">
88 <button
89 onClick={() => setActiveTab('all')}
90 className={`whitespace-nowrap py-4 px-1 border-b-2 font-medium text-sm ${
91 activeTab === 'all'
92 ? 'border-indigo-500 text-indigo-600'
93 : 'border-transparent text-gray-500 hover:text-gray-700 hover:border-gray-300'
94 }`}
95 >
96 All Sessions
97 </button>
98 <button
99 onClick={() => setActiveTab('my')}
100 className={`whitespace-nowrap py-4 px-1 border-b-2 font-medium text-sm ${
101 activeTab === 'my'
102 ? 'border-indigo-500 text-indigo-600'
103 : 'border-transparent text-gray-500 hover:text-gray-700 hover:border-gray-300'
104 }`}
105 >
106 My Sessions
107 </button>
108 </nav>
109
110
111 {/* Search Bar (Only for All Sessions tab) */}
112 {activeTab === 'all' && (
113
114
115 <Search className="h-5 w-5 text-gray-400" aria-hidden="true" />
116
117 <input
118 type="text"
119 name="search"
120 id="search"

Figure 12


frontend > src > pages > Dashboard.jsx > ...
17 const DashboardPage = () => {
value={searchTerm}
onChange={(e) => setSearchTerm(e.target.value)}
/>

)}
{/* Sessions Display */}
{activeTab === 'all' ? (
<section>
<h2 className="text-xl font-semibold text-gray-900 mb-4">All Wellness Sessions</h2>
{isLoading ? (
<LoadingSpinner />
) : allSessions.length === 0 ? (

No sessions found matching your search.
Try a different keyword or check back later!

) : (

{allSessions.map(session => (// Use `allSessions` here, as filtering is done on backend
<SessionCard
key={session._id}
session={session}
isEditable={false} // Public sessions are not editable from here
onLike={handleLikeUnlike}
hasLiked={user && session.likedBy && session.likedBy.includes(user.id)} // Check if
isProcessing={processingCardId === session._id}
/>
))}

)}
</section>
) : (
<section>
<MySessionsPage />
</section>
)}
</main>

);
};
export default DashboardPage;

Figure 13

Output:

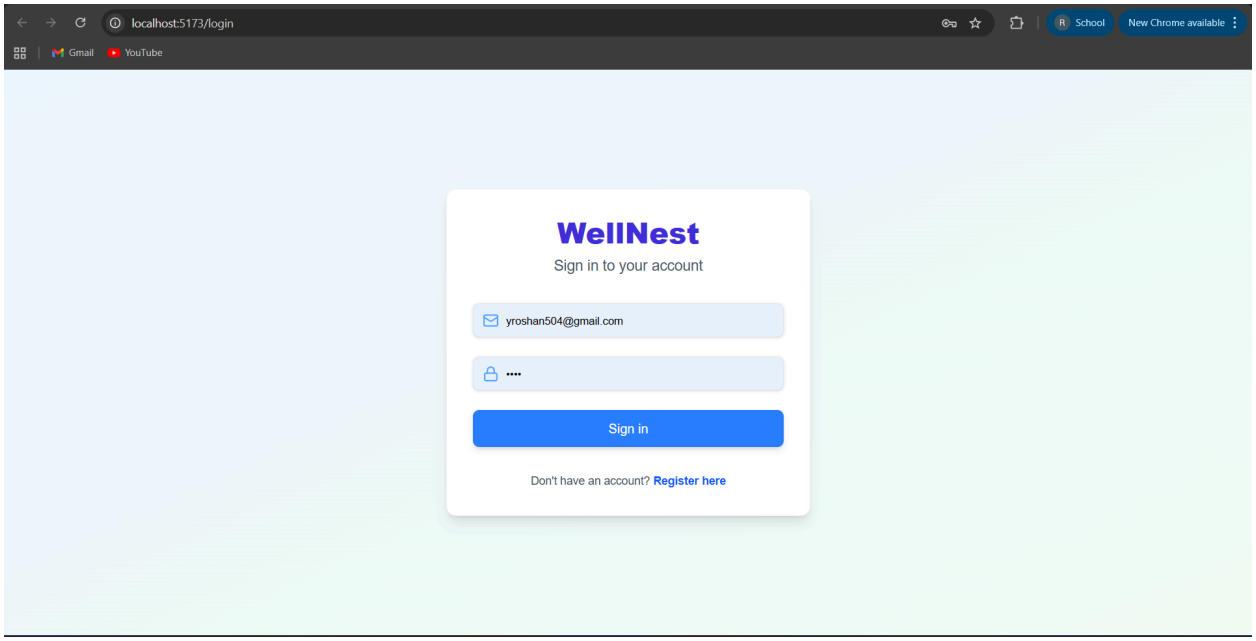


Figure 14

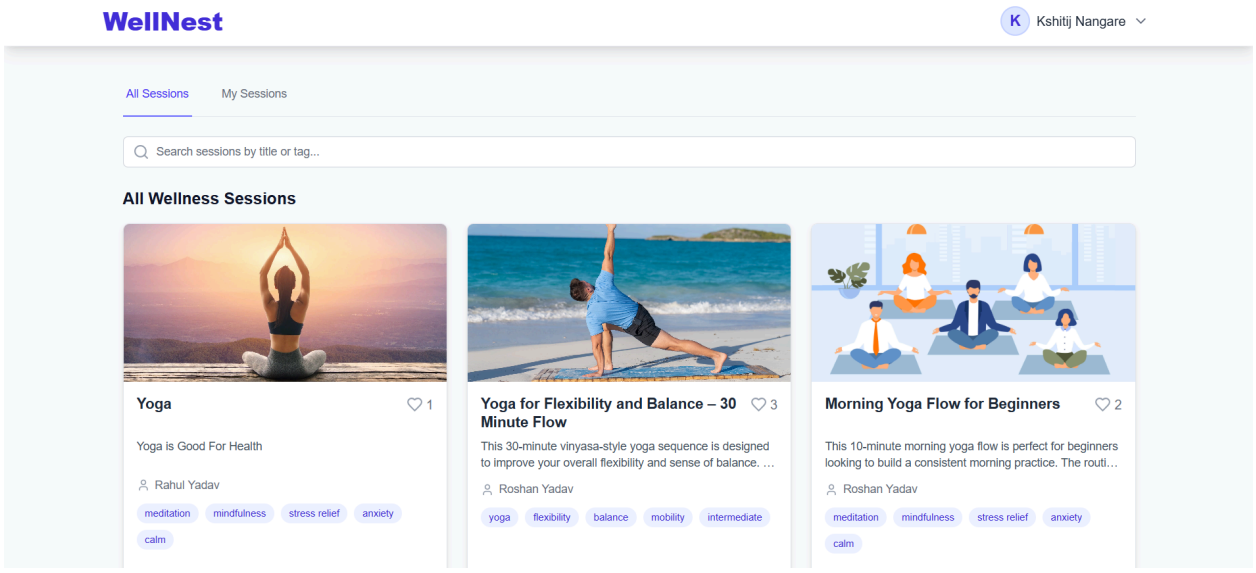


Figure 15

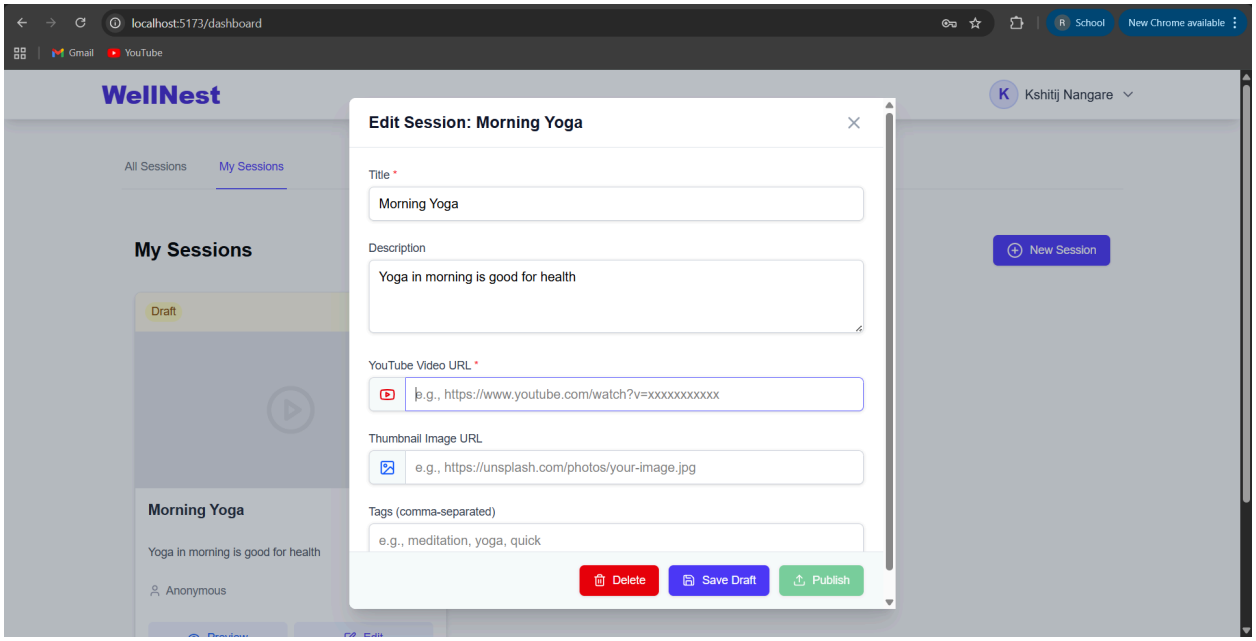

localhost:5173/dashboard
School
New Chrome available
Gmail
YouTube
WellNest
Kshitij Nangare
All Sessions
My Sessions
My Sessions
New Session
Draft
Morning Yoga
Yoga in morning is good for health
Anonymous
Edit Session: Morning Yoga
Title *
Morning Yoga
Description
Yoga in morning is good for health
YouTube Video URL *
e.g., https://www.youtube.com/watch?v=xxxxxxxxxx
Thumbnail Image URL
e.g., https://unsplash.com/photos/your-image.jpg
Tags (comma-separated)
e.g., meditation, yoga, quick
Delete
Save Draft
Publish

Figure 16