#### **Patient**

```
export class Patient {
 patientID: number;
 name: string;
 medicalCondition: string;
 constructor(patientID: number, name: string, medicalCondition: string) {
  this.patientID = patientID;
  this.name = name;
  this.medicalCondition = medicalCondition;
 // displayDetails() method to log patient details
 displayDetails(): void {
  console.log('Patient ID: ${this.patientID}, Name: ${this.name}, Medical Condition:
${this.medicalCondition}`);
 // hasCondition() method to check if the patient has a specific condition
 hasCondition(condition: string): string {
  if (this.medicalCondition === condition) {
   return 'This patient has ${this.medicalCondition}.';
   return 'This patient does not have ${condition}.';
 }
// Create a new Patient object
const patient1 = new Patient(1, 'John Doe', 'Diabetes');
// Call displayDetails and hasCondition methods
patient1.displayDetails();
console.log(patient1.hasCondition('Diabetes')); // This patient has Diabetes.
console.log(patient1.hasCondition('Cancer')); // This patient does not have Cancer.
//All test cases passed code
export class Patient {
 patientID: number;
 name: string;
 medicalCondition: string;
```

```
constructor(patientID: number, name: string, medicalCondition: string) {
  this.patientID = patientID;
  this.name = name;
  this.medicalCondition = medicalCondition;
 }
 // displayDetails() method to log patient details
 displayDetails(): void {
  console.log('Patient ID: ${this.patientID}, Name: ${this.name}, Medical Condition:
${this.medicalCondition}`);
 }
 // hasCondition() method to check if the patient has a specific condition
 hasCondition(condition: string): boolean {
  if (this.medicalCondition === condition) {
   return true;
  } else {
   return false;
// Create a new Patient object
const patient1 = new Patient(1, 'John Doe', 'Diabetes');
// Call displayDetails and hasCondition methods
patient1.displayDetails();
console.log(patient1.hasCondition('Diabetes')); // This patient has Diabetes.
console.log(patient1.hasCondition('Cancer')); // This patient does not have Cancer.
```

#### **Shopping Cart**

```
const products = [
  { id: 1, name: "Product 1", price: 10 },
  { id: 2, name: "Product 2", price: 20 },
  { id: 3, name: "Product 3", price: 30 }
];
const shoppingCart = {
```

```
items: [],
 coupon: null,
 // Function to add products to the cart
 addToCart: function(productId, quantity) {
  const product = products.find(p => p.id === productId);
  if (!product) {
   console.log("Product not found!");
   return;
  const existingItem = this.items.find(item => item.product.id === productId);
  if (existingItem) {
   existingItem.quantity += quantity;
  } else {
   this.items.push({ product, quantity });
  console.log(`${quantity} x ${product.name} added to cart.');
 },
 // Function to view the current contents of the cart
 viewCart: function() {
  console.log("Cart Contents:");
  if (this.items.length === 0) {
   console.log("Your cart is empty.");
   return;
  }
  this.items.forEach(item => {
   console.log(
     `${item.product.name} - $${item.product.price} x ${item.quantity} =
$${item.product.price * item.quantity}`
   );
  });
 },
 // Function to apply a coupon code
 applyCoupon: function(couponCode) {
  // Let's assume we have only one valid coupon for simplicity
  const validCoupons = {
   "DISCOUNT10": 10, // 10% discount
   "DISCOUNT20": 20 // 20% discount
  };
  if (validCoupons[couponCode]) {
```

```
this.coupon = { code: couponCode, discount: validCoupons[couponCode] };
   console.log(`Coupon ${couponCode} applied. You get ${validCoupons[couponCode]}%
off.');
  } else {
   console.log("Invalid coupon code.");
 },
 // Function to calculate the total payable amount
 calculateTotalAmount: function() {
  let total = 0;
  this.items.forEach(item => {
   total += item.product.price * item.quantity;
  });
  if (this.coupon) {
   const discountAmount = (total * this.coupon.discount) / 100;
   total -= discountAmount;
   console.log(`Discount of ${this.coupon.discount}% applied: -
$${discountAmount.toFixed(2)}');
  }
  console.log('Total Payable Amount: $${total.toFixed(2)}');
  return total;
 }
};
// Example usage
shoppingCart.addToCart(1, 2);
shoppingCart.addToCart(2, 1);
shoppingCart.viewCart();
shoppingCart.applyCoupon("DISCOUNT10");
shoppingCart.calculateTotalAmount();
module.exports = shoppingCart;
```

### **Average Marks**

```
// Define two arrays: one for names and another for marks const names: string[] = ["A", "B"]; const marks: number[] = [10, 20];
```

```
// Display names and marks using a for loop
console.log("Student Names and Marks");
for (let i = 0; i < names.length; i++) {
    console.log(`${names[i]}: ${marks[i]}`);
}

// Function to calculate average
export function findAvg(marks: number[]): number {
    let tot = 0;
    for (let i = 0; i < marks.length; i++) {
        tot += marks[i];
    }
    const averageMarks = tot / marks.length;
    return averageMarks;
}

// Display the average
console.log(`\nAverage Marks: ${findAvg(marks)}`);</pre>
```

# **SpringBoot Booking API Question**

### **Booking.entity**

```
package com.hotelbooking.entity;

public class Booking {
    private int id;
    private String guestName;
    private int roomNumber;

public Booking() {
    }

public Booking(String guestName, int roomNumber) {
     this.guestName = guestName;
     this.roomNumber = roomNumber;
}
```

```
public Booking(String guestName, int roomNumber, int id) {
    this.guestName = guestName;
    this.roomNumber = roomNumber;
    this.id = id;
  }
  public int getId() {
    return id;
  public void setId(int id) {
    this.id = id;
  }
  public String getGuestName() {
    return guestName;
  }
  public void setGuestName(String guestName) {
    this.guestName = guestName;
  }
  public int getRoomNumber() {
    return roomNumber;
  }
  public void setRoomNumber(int roomNumber) {
    this.roomNumber = roomNumber;
  }
}
```

# **BookingService.java**

```
package com.hotelbooking.service;
import com.hotelbooking.entity.Booking;
import org.springframework.stereotype.Service;
import java.util.ArrayList;
import java.util.List;

@Service
public class BookingService {
```

```
private static int counter = 0;
private final List<Booking> bookingList = new ArrayList<>();

public Booking addBooking(Booking booking) {
    booking.setId(++counter);
    bookingList.add(booking);
    return booking;
}

public Booking getBookingById(int id) {
    return bookingList.stream()
        .filter(b -> b.getId() == id)
        .findFirst()
        .orElse(null);
}
```

#### **BookingController**

```
package com.hotelbooking.controller;
import com.hotelbooking.entity.Booking;
import com.hotelbooking.service.BookingService;
import org.springframework.http.HttpStatus;
import org.springframework.http.ResponseEntity;
import org.springframework.web.bind.annotation.*;
@RestController
@RequestMapping("/bookings")
public class BookingController {
  private final BookingService bookingService;
  // Constructor-based injection is preferred
  public BookingController(BookingService bookingService) {
    this.bookingService = bookingService;
  }
  @PostMapping
  public ResponseEntity<Booking> addBooking(@RequestBody Booking booking) {
    Booking savedBooking = bookingService.addBooking(booking);
    return new ResponseEntity (savedBooking, HttpStatus.CREATED);
```

```
@GetMapping("/{id}")
public ResponseEntity<Booking> getBookingById(@PathVariable int id) {
    Booking booking = bookingService.getBookingById(id);
    if (booking != null) {
        return new ResponseEntity<>(booking, HttpStatus.OK);
    } else {
        return new ResponseEntity<>(HttpStatus.NOT_FOUND);
    }
}
```

#### **React Question**

```
import React, { useState, useEffect, useCallback } from "react";
import { Map, GoogleApiWrapper } from "google-maps-react";
import LocationMarker from "./LocationMarker";
export const App = (\{ google \}) \Rightarrow \{
 const [properties, setProperties] = useState([]);
 const [searchQuery, setSearchQuery] = useState("");
 const [searchResults, setSearchResults] = useState([]);
 const [mapCenter, setMapCenter] = useState({ lat: 31.5497, lng: 74.3436 });
 const [isMounted, setIsMounted] = useState(true);
 const [map, setMap] = useState(null);
 const [markers, setMarkers] = useState([]);
 const handleMapReady = (mapProps, map) => {
  setMap(map);
  setMapCenter(map.center.toJSON());
   };
 const handleSearch = () => {
  if(!google || google.maps) return;
  const service=new google.maps.places.PlaceService(map);
  service.textSearch({query:searchQuery},(results,status)=>{
   if(status==="OK"){
    setSearchResults(results);
```

```
}
 });
};
const handleAddLocation = (result) => {
 const location=result.geometry.location;
 const position={
  lat:location.let(),
  lng:location.lng(),
 };
 const marker=new google.maps.Marker({
  position, map, title: result.name,
 });
 setMarkers((prev)=>[...prev,marker]);
 setProperties((prev)=>[...prev,{name:result.name,position}]);
 setSearchResults([]);
 setSearchQuery("");
};
const handleRemoveLocation = useCallback(
(index) = > {
 const newProperties=[...properties];
 newProperties.splice(index,1);
 setProperties(newProperties);
 removeMarker(index);
},
 [properties]
);
const removeMarker = useCallback(
   (index) = > {
     if(index<0 || index>=markers[index]) return;
   const marker=markers[index];
   markers.setMap(null);
   const newMarkers=[...markers];
   newMarkers.splice(index,1);
   setMarkers(newMarkers);
   },
     [markers]
```

```
const handleMapClick = (mapProps, map, clickEvent) => {
  const geocoder = new google.maps.Geocoder();
  const latLng={
   lat: clickEvent.latLng.lat(),
      lng: clickEvent.latLng.lng()
  }
  geocoder.geocode(
    location: {
      lat: clickEvent.latLng.lat(),
      lng: clickEvent.latLng.lng(),
    },
   },
   (results, status) => {
    if (status === "OK") {
      if (results[0]) {
       const marker=new
google.maps.Marker({position:latLng,map,title:results[0].formatted_address,});
       setMarkers((prev)=>[...prev,marker]);
       setProperties((prev)=>[...prev,{name:results[0].formatted_address,position:latLng},]);
     } else {
      console.log("Geocoder failed due to: " + status);
 });
 };
 useEffect(() => {
  if (properties.length > 0 && isMounted) {
  if(properties.length>0){
     setMapCenter(properties[properties.length-1].position);
   }
 }, [properties]);
 return (
```

);

<div style={{ display: "flex" }}>

```
<div style={{ flex: "1 1 50%", position: "relative", height: "500px" }}>
   <label htmlFor="search">Enter location</label>
    <input type="text" id="search" value={searchQuery}</pre>
onChange={(e)=>setSearchQuery(e.target.value)} placeholder="Search Location"/>
    <button onClick={handleSearch} >Search
    <ul>
     {searchResults.map((result,index)=>{
      {result.name}<button onClick={</pre>
       ()=>{
        handleAddLocation(result)
       }
      }>Add</button>
     })}
    <h3>Saved Location</h3>
    <u1>
     {properties.map((prop,index)=>(
      {prop.name}<button onClick={</pre>
        handleRemoveLocation(index)
       }}>Remove</button>
      ))}
    </div>
   <div>
    <Map
    google={google}
    zoom={5}
    initialCenter={mapCenter}
    onReady={handleMapReady}
    onClick={handleMapClick}
   {properties.map((prop,index)=>(
    < Location Marker
    key = \{index\}
    position={prop.position}
    map={map}
    marker={markers[index]}
    onRemove={()=>handleRemoveLocation(index)}
```

```
/>
   ))}
    </Map>
   </div>
  </div>
);
};
export default GoogleApiWrapper({
 apiKey: "AlzaSyDh0LyUchQyqlcsHgYRO5w7iUV4ttlNdDI",
})(App);
LocationMarker.js
import { useEffect } from 'react';
const LocationMarker = ({ position, map, marker, onRemove }) => {
 useEffect(() => {
   if(!marker)return;
   const handleClick=()=>{
    if(onRemove) onRemove();
    marker.setMap(null);
   };
   marker.addListener("click",handleClick);
  return () => {
   window.google.maps.event.clearListeners(marker, "click");
  };
 }, [map, position, marker, onRemove]);
 return null;
};
export default LocationMarker;
```

## **Angular Question**

```
import { Injectable } from '@angular/core';
import { ActivatedRouteSnapshot, CanActivate, Router, RouterStateSnapshot, UrlTree }
from '@angular/router';
import { AuthService } from './auth.service';
import { Observable } from 'rxjs';
```

```
@Injectable({
 providedIn: 'root'
})
export class AuthGuard implements CanActivate {
 constructor(private authService: AuthService, private router: Router) {
 }
 canActivate(route:ActivatedRouteSnapshot,state:RouterStateSnapshot):boolean{
  const expectedRole=route.data['role'];
  if(!this.authService.isLoggedIn){
   this.router.navigate(['/login']);
   return false;
  if(expectedRole === 'admin' && !this.authService.isAdmin){
   this.router.navigate(['/unauthorized']);
   return false;
  }
  if(expectedRole === 'user' && this.authService.isAdmin){
   this.router.navigate(['/unauthorized']);
   return false;
  }
  return true;
import { Injectable } from '@angular/core';
@Injectable({
 providedIn: 'root'
})
export class AuthService {
 private readonly AUTH TOKEN KEY = 'auth token';
 private readonly IS ADMIN KEY = 'is admin';
 private readonly USERNAME_KEY='username';
```

```
constructor() {
 //complete missing code here
 }
 get isLoggedIn(): boolean {
 //complete missing code here
 return localStorage.getItem(this.AUTH TOKEN KEY)==='true';
 }
 set isLoggedIn(value: boolean) {
 //complete missing code here
  localStorage.setItem(this.AUTH TOKEN KEY,value.toString());
 }
 get isAdmin(): boolean {
//complete missing code here
return localStorage.getItem(this.IS ADMIN KEY)==='true';
 }
 set SetUser(value: string) {
 //complete missing code here
 localStorage.setItem(this.USERNAME KEY,value);
 localStorage.setItem(this.AUTH TOKEN KEY,'true');
 const is admin=value==='is admin';
 localStorage.setItem(this.IS_ADMIN_KEY,is_admin.toString());
 // localStorage.setItem(this.USERNAME KEY,!is admin.)
 }
 login(username: string, password: string): boolean {
  // Implement authentication logic
 //complete missing code here
 if((username === 'admin' && password === 'admin') || (username === 'user' && password
=== 'user')){
  this.isLoggedIn=true;
  localStorage.setItem(this.IS ADMIN KEY,(username === 'admin').toString());
  this.SetUser=username;
  return true;
 }
```

```
return false;
 }
 logout(): void {
//complete missing code here
localStorage.removeItem(this.AUTH TOKEN KEY);
localStorage.removeItem(this.IS ADMIN KEY);
localStorage.removeItem(this.USERNAME KEY);
}
}
import { CommonModule } from '@angular/common';
import { Component, OnInit } from '@angular/core';
import { AbstractControl, FormBuilder, FormGroup, FormsModule, Validators } from
'@angular/forms';
import { Router } from '@angular/router';
import { AuthService } from '../services/auth.service';
@Component({
 selector: 'app-login',
 templateUrl: './login.component.html',
 styleUrl: './login.component.scss'
export class LoginComponent implements OnInit{
 formModel:any={}
 itemForm: FormGroup;
 loginFailed:boolean=false;
 constructor(private authService: AuthService, private formBuilder: FormBuilder, private
router:Router)
   this.itemForm=this.formBuilder.group({
    username:[",Validators.required],
    password:[",Validators.required]
   });
 ngOnInit(): void {
 onRegister()
  if(this.itemForm.valid)
```

```
const username=this.itemForm.value.username;
const password=this.itemForm.value.password;
const success=this.authService.login(username,password);
if(success){
    this.loginFailed=false;
    if(this.authService.isAdmin){
        this.router.navigate(['/admin']);
    }
    else {
        this.router.navigate(['/user']);
    }
}
else {
    this.itemForm.markAllAsTouched();
}
else {
    this.itemForm.markAllAsTouched();
}
```

# **HTML Article Publishing**

```
<!DOCTYPE html>
<html>
<head>
<title>CMS: Article Publishing Interface</title>
link
rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.2/css/all.min.css"
integrity="sha512-
z3gLpd7yknf1YoNbCzqRKc4qyor8gaKU1qmn+CShxbuBusANI9QpRohGBreCFkKxLhei6
S9CQXFEbbKuqLg0DA=="crossorigin="anonymous"
```

```
referrerpolicy="no-referrer"
/>
<style>
 body {
  background-color: #1e1e2f;
 }
 form {
  display: flex;
  flex-direction: column;
  width: 50%;
  justify-content: center;
  align-items: center;
  border: 1px solid #fff;
  margin: 0 auto;
  padding: 10px;
 }
 div {
  width: 100%;
  display: flex;
  justify-content: center;
  margin: 1rem;
 }
 label {
  width: 20%;
 }
```

```
input[type="text"],
select,
textarea {
 width: 80%;
 padding: 8px;
 border: 1px solid #ccc;
}
input[type="checkbox"] {
 transform: scale(1.2);
}
a:hover {
 color: orange;
}
.publish {
justify-content: start;
 align-items: center;
 gap: 10px;
}
.summary,
.error {
 color: white;
}
.error {
 background-color: red;
```

```
flex-direction: column;
}
.error p {
 text-align: center;
}
.error p::first-letter {
 text-transform: capitalize;
}
.articles {
 display: flex;
 flex-direction: column;
 width: 51%;
 justify-content: center;
 align-items: center;
 margin: 0 auto;
}
.article {
 display: flex;
 width: 100%;
 flex-direction: column;
 border: 1px solid #fff;
 color: white;
 align-items: center;
 margin-bottom: 10px;
 padding: 10px;
```

```
}
  .delete-icon {
   color: red;
   padding: 10px;
   cursor: pointer;
  }
 </style>
</head>
<body>
 <form>
  <h2 style="color: white">CMS: Article Publishing Interface</h2>
  <div>
   <label for="title" style="color: white">Article Title</label>
   <input type="text" id="title" />
  </div>
  <div>
   <label for="content" style="color: white">Article Content</label>
   <textarea id="content" rows="4"></textarea>
  </div>
  <div>
   <label for="category" style="color: white">Category</label>
   <select id="category">
    <option value="Technology">Technology</option>
    <option value="Lifestyle">Lifestyle</option>
    <option value="Business">Business
   </select>
```

```
</div>
 <div class="publish">
  <label for="is_published" style="color: white">Publish</label>
  <input type="checkbox" id="is_published" />
 </div>
 <div>
  <button id="add-article">Submit</button>
 </div>
 <div id="error"></div>
</form>
<script type="text/javascript">
 const articles = [];
 const btn = document.getElementById("add-article");
 btn.addEventListener("click", addArticle);
 function addArticle(e) {
  e.preventDefault();
  let errorMessages = [];
  const article = {};
  const title = document.getElementById("title").value.trim();
  const content = document.getElementById("content").value.trim();
  const category = document.getElementById("category").value;
  const\ is Published = document.getElementById ("is\_published").checked;
```

```
const errorDiv = document.getElementById("error");
    errorDiv.innerHTML = "";
    if (!title) errorMessages.push("title is empty ");
    if (!content) errorMessages.push("content is empty");
    if (errorMessages.length > 0) {
      errorDiv.innerHTML = errorMessages.map(msg => `${msg}`).join("") +
"";
    } else {
     article.title = title;
      article.content = content;
      article.category = category;
      article.isPublished = isPublished;
      articles.push(article);
      displayArticles(articles);
      document.getElementById("title").value = "";
      document.getElementById("content").value = "";
      document.getElementById("category").value = "Technology";
      document.getElementById("is published").checked = false;
   }
   function displayArticles(articles) {
    const existingContainer = document.querySelector(".articles");
    if (existingContainer) {
```

```
document.body.removeChild(existingContainer);
}
const articlesContainer = document.createElement("div");
articlesContainer.classList.add("articles");
articles.forEach((article, index) => {
 const articleDiv = document.createElement("div");
 articleDiv.classList.add("article");
 const title = document.createElement("h3");
 title.textContent = article.title;
 const category = document.createElement("p");
 category.textContent = "Category: " + article.category;
 const status = document.createElement("p");
 status.textContent = "Status: " + (article.isPublished ? "Published" : "Draft");
 const deleteIcon = document.createElement("i");
 deleteIcon.classList.add("fas", "fa-trash-alt", "delete-icon");
 deleteIcon.addEventListener("click", () => {
  articles.splice(index, 1);
  displayArticles(articles);
 });
 articleDiv.appendChild(title);
 articleDiv.appendChild(category);
 articleDiv.appendChild(status);
 articleDiv.appendChild(deleteIcon);
```

```
articlesContainer.appendChild(articleDiv);
});

document.body.appendChild(articlesContainer);
}
</script>
</body>
</html>
```

### **React Patient Question**

```
// PatientForm.js
import React, { useState } from 'react';
import { useNavigate } from 'react-router-dom';
const PatientForm = () => {
 const [formData, setFormData] = useState({
  name: ",
  dob: ",
  medicalHistory: ",
  currentMedications: ",
 });
 const [errors, setErrors] = useState({});
 const navigate = useNavigate();
 const\ handleChange = (e) \Longrightarrow \{
  const { name, value } = e.target;
  setFormData({ ...formData, [name]: value });
```

```
setErrors({ ...errors, [name]: " });
};
const validate = (data) => {
 const errors = \{\};
 if (!data.name.trim()) errors.name = 'Name is required';
 if (!data.dob) errors.dob = 'Date of Birth is required';
 else if (new Date(data.dob) > new Date()) {
  errors.dob = 'Date of Birth cannot be a future date';
 }
 return errors;
};
const\ handleSubmit = (e) \Longrightarrow \{
 e.preventDefault();
 const validationErrors = validate(formData);
 if (Object.keys(validationErrors).length > 0) {
  setErrors(validationErrors);
  navigate('/error');
 } else {
  setErrors({});
  navigate('/welcome');
 }
};
return (
 <div className="form-container">
  <h1>Patient Registration</h1>
  <form onSubmit={handleSubmit}>
```

```
< div>
     <label htmlFor="name">Name:</label>
     <input type="text" id="name" name="name" value={formData.name}</pre>
onChange={handleChange} />
      {errors.name && {errors.name}}
    </div>
    <div>
     <label htmlFor="dob">Date of Birth:</label>
     <input type="date" id="dob" name="dob" value={formData.dob}</pre>
onChange={handleChange} />
      {errors.dob \&\& {errors.dob}}
    </div>
    < div >
     <label htmlFor="medicalHistory">Medical History:</label>
     <textarea id="medicalHistory" name="medicalHistory"
value={formData.medicalHistory} onChange={handleChange}></textarea>
    </div>
    <div>
     <label htmlFor="currentMedications">Current Medications:</label>
     <input type="text" id="currentMedications" name="currentMedications"</pre>
value={formData.currentMedications} onChange={handleChange} />
    </div>
    <button type="submit">Submit</button>
   </form>
  </div>
 );
};
export default PatientForm;
```

```
import React from 'react';
const ErrorPage = () => {
 return <h1>Error: Invalid form submission</h1>;
};
export default ErrorPage;
// WelcomePage.js
import React from 'react';
const WelcomePage = () => {
 return <h1>Welcome! Patient registered successfully.</h1>;
};
export default WelcomePage;
Angular Employee Question
employee component
import { Component } from '@angular/core';
import { Employee } from '../model/employee.model';
@Component({
```

```
selector: 'app-employee',
 templateUrl: './employee.component.html',
 styleUrls: ['./employee.component.scss']
})
export class EmployeeComponent {
 // Create an employee list here
 employees: Employee[] = [
  { id: 1, name: 'Monisha', position: 'Software Engineer'},
  { id: 2, name: 'Roshna', position: 'Product Manager' },
  { id: 3, name: 'Neha', position: 'UX Designer'},
];
}
//employee html
<thead>
  >
   <th>ID</th>
   Name
   Position
  </thead>
```

```
{{ employee.id }}
   {{ employee.name }}
   {{ employee.position }}
  vote html
<div>
 <!-- Label for the age input field -->
 <label for="age">Enter your Age</label>
 <!-- Input field with two-way data binding to 'userAge' -->
 <input id="age" [(ngModel)]="userAge" type="number" placeholder="Enter your age" />
 <!-- Button to trigger eligibility check -->
 <button (click)="checkEligibility()">Check Eligibility/button>
 <!-- Paragraph to display the eligibility message -->
 {{ eligibilityMessage }}
</div>
```