In my Angular project, the LocationModel serves as the base model. The company has many houses or locations across the country, but the number of locations is fixed (i.e., 5 or 7 places in the entire country). Every location has a house for this company. That's why I want to build my project based on locations. The company has an Admin who maintains, oversees, or handles everything for all locations.

**Example of a Location model:**

export class LocationModel {

id!: string; //Comment: Primary key

locationName!: string;

addressLine!: string;

city!: string;

state!: string;

postalCode!: string;

countryName!: string;

isActive!: boolean; //Comment: A boolean flag indicating whether the location is currently active or inactive

createdAt!: Date; //Comment: The timestamp when the location was created

updatedAt!: Date; //Comment: The timestamp when the location was last updated

photo?: string; //Comment: Optional field for the location's photo

}

Every house has a fixed number of departments, i.e., 4 or 6, based on the location. Each department has a fixed Department Head.

**Example of a Department model:**

export class DepartmentModel {

id!: string; //Comment: Primary Key

departmentName!: string; //Comment: Must provide department name

description?: string;

numberOfEmployees?: number; //Comment: Number of employees will be shown here

payrollCalculationMethod!: 'Weekly' | 'Monthly';

LocationModel!: {

id: string;

locationName: string | undefined;

addressLine: string | undefined;

city: string | undefined;

state: string | undefined;

postalCode: string | undefined;

countryName: string | undefined;

};

UserModel!: {

id: string;

firstName: string;

lastName: string;

role: 'HR' | 'Employee' | undefined;

};

}

Every department has an unfixed number of employees. Employees come and leave the house, so I want to keep their records.

**Example of an Employee model:**

export class EmployeeModel {

id!: string; //Comment: Primary Key

UserModel!: {

id: string;

firstName: string | undefined;

lastName: string | undefined;

email: string | undefined;

role: 'HR' | 'Employee' | undefined;

profilePhoto: string | undefined;

gender: 'Male' | 'Female' | 'Other' | undefined;

contact: string | undefined;

nidNo: number | undefined;

joiningDate: Date | undefined;

hourlyRate: number | undefined; //Comment: Hourly rate 150 for employees and 250 for HR

};

DepartmentModel!: {

id: string;

departmentName: string | undefined;

payrollCalculationMethod: 'Weekly' | 'Monthly' | undefined;

};

LocationModel!: {

id: string;

locationName: string | undefined;

addressLine: string | undefined;

city: string | undefined;

state: string | undefined;

postalCode: string | undefined;

countryName: string | undefined;

};

}

All users have a role provided by the Admin. The Admin account is the fixed account in this system. The Admin can create department heads. Employees can't generate or register accounts on this system. Department heads can create employees. I call the department head like an HR. There are three types of users in this project.

**Example of a Role-based Authentication Model:**

export interface AuthResponse {

token: string; //Comment: Generated and stored token

expiresIn?: number; //Comment: Token expiration time in seconds

issuedAt?: Date; //Comment: When the token was issued

role: 'Admin' | 'HR' | 'Employee';

}

I want to create a dynamic registration page with two options. When the Admin logs into their dashboard and wants to create an HR, or when the HR logs into their dashboard and wants to create an employee, one common HTML page will show where a necessary data collection form will be displayed.

**Example of a User model:**

export class UserModel {

id!: string; //Comment: Primary Key

firstName!: string;

lastName!: string;

email!: string; //Comment: Email address, must be unique

userName!: string; //Comment: Username for login

password!: string; //Comment: Password for authentication

role!: 'Admin' | 'HR' | 'Employee'; //Comment: Role of the user, restricted to specific values

profilePhoto?: string; //Comment: Optional profile photo

gender!: 'Male' | 'Female' | 'Other';

contact!: string; //Comment: Contact number

nidNo!: number; //Comment: National ID number, must be provided and unique

joiningDate!: Date; //Comment: For payment calculation

hourlyRate!: number; //Comment: Salary based on the user's role

createdAt!: Date; //Comment: Account creation date

updatedAt!: Date; //Comment: Last update date

DepartmentModel!: {

id: string;

departmentName: string | undefined;

payrollCalculationMethod: 'Weekly' | 'Monthly' | undefined;

};

}

The Admin can perform all tasks (CRUD) from this system. The Admin can handle payroll, performance, grant leave, check attendance, and provide feedback for HR. Similarly, HR can manage payroll, and performance, grant leave, check attendance, and provide feedback for employees.

**Example of a Payroll model:**

export class PayrollModel {

id!: string; //Comment: Primary Key

UserModel!: {

id: string;

firstName: string | undefined;

lastName: string | undefined;

role: 'HR' | 'Employee' | undefined;

profilePhoto: string | undefined;

contact: string | undefined;

nidNo: number | undefined;

hourlyRate: number | undefined; //Comment: Hourly rate 150 for employees and 250 for HR

};

EmployeeModel!: {

id: string | undefined; //Comment: Using this UserModel, an employee will be created. After creating a new employee, they have a unique ID

};

performanceBonuses!: number; //Comment: 1\* = 200, 2\* = 400, 3\* = 600, 4\* = 800, 5\* = 1600

insurance!: number; //Comment: 1000 for employees, 3000 for HR monthly

medicare!: number; //Comment: 5000 for employees, 10000 for HR

deductions!: number; //Comment: Deductions (e.g., tax, insurance)

netPay!: number; //Comment: Net pay after deductions

paymentDate!: Date; //Comment: Date when payment was made

payPeriodStart!: Date; //Comment: Start date of the pay period

payPeriodEnd!: Date; //Comment: End date after 30 days from the start of the pay period

overtimeExemption!: boolean; //Comment: Yes, Newcomer or older than 50 years. Or No.

overtimeHourlyRate!: number; //Comment: Overtime hourly rate will add half of their main rate. Assume 150/2 = 75 + 150 = 225 for employees and 250/2 = 125 + 250 = 375 for HR

yearlySickDay!: number; //Comment: 10 days reserved

status!: 'Paid' | 'Pending' | 'Overdue'; //Comment: Status of the payroll

//Comment: Create a map that returns netPay

//Comment: static mapPayroll(payroll: PayrollModel): PayrollModel {

//Comment: return {

//Comment: ...payroll,

//Comment: netPay: payroll.UserModel.salary! - payroll.tax! - payroll.insurance!,

//Comment: };

//Comment: }

}

Payment will be provided based on attendance, where working hours and working calendar month will be calculated. Performance rating bonuses, overtime, sick day salary, insurance, medicare, and deductions will be considered.

* **Hourly Rate**: 8 hours a day \* hourly rate will be calculated. Assume an hourly rate of 150 for employees and 250 for HR.
* **Overtime Rate**: The overtime hourly rate will add half of their main rate. Assume 150/2 = 75 + 150 = 225 for employees and 250/2 = 125 + 250 = 375 for HR.

**Example of a Feedback model:**

export class FeedbackModel {

id!: string;

UserModel!: {

id: string;

firstName: string | undefined;

lastName: string | undefined;

role: 'HR' | 'Employee' | undefined;

profilePhoto: string | undefined;

};

rating!: number; //Comment: User rating will be shown here. 1 to 5 scale

comments!: string; //Comment: User comments

feedbackDate!: Date; //Comment: Feedback creation date

}

**Example of a Performance model:**

export class PerformanceModel {

id!: string; //Comment: Unique identifier for the performance record

goals!: boolean; //Comment: Check if the employee has achieved the goal

achievements!: string; //Comment: Specific achievements during the review period

reviewDate!: Date; //Comment: Date when the review was conducted

rating!: number; //Comment: Example: 1 to 5 scale

UserModel!: {

id: string;

firstName: string | undefined;

lastName: string | undefined;

role: 'HR' | 'Employee' | undefined;

profilePhoto: string | undefined;

};

comments!: string; //Comment: Areas of Improvement based on comments about the employee's performance

}

**Example of an Attendance model:**

export class AttendanceModel {

id!: string;

workingDay!: Date; //Comment: Must be provided to calculate a user's salary or grant leave on a specific day

workHours!: number; //Comment: Example: 8.00

UserModel!: {

id: string;

firstName: string | undefined;

lastName: string | undefined;

role: 'HR' | 'Employee' | undefined;

};

department!: DepartmentModel;

inTime!: Date; //Comment: In time for the day

outTime!: Date; //Comment: Out time for the day

status!: 'Present' | 'Absent' | 'On Leave' | 'Sick' | 'Holiday'; //Comment: Status of the attendance record

}

**Example of a Leave model:**

export class LeaveModel {

id!: string;

leaveType!: 'Annual' | 'Sick' | 'Maternity' | 'Paternity' | 'Compassionate' | 'Unpaid'; //Comment: Type of leave taken

startDate!: Date; //Comment: Start date of the leave

endDate!: Date; //Comment: End date of the leave

totalLeaveDays!: number; //Comment: The system will calculate the total number of days between start and end dates

UserModel!: {

id: string;

firstName: string | undefined;

lastName: string | undefined;

role: 'HR' | 'Employee' | undefined;

};

status!: 'Pending' | 'Approved' | 'Rejected'; //Comment: Status of the leave request

approvalDate!: Date; //Comment: Date when the leave was approved or rejected

comments?: string; //Comment: Optional comments or reasons for approval/rejection

}