AntD + Next.js + Node.js + Sequelize PRD

1. Objective

Develop a full-stack CRUD module using Next.js (Page Router), Ant Design, Node.js, Sequelize, and MySQL. The project demonstrates form handling with all AntD input types, validation, relational joins, and server-side search, pagination, and sorting.

2. Scope

The CRUD module will include: - User Form — Implements all Ant Design input types with validation - User Listing Table — Search, pagination, sorting, and filtering - Department Table — For relational joins - Profile Picture Upload — With preview, validation, and storage - API-ready Node.js + Sequelize backend

3. User Form Fields

Field	Ant Design Input Type	Validation
first_name	Input	Required, min 2 chars
last_name	Input	Required
email	Input (type=email)	Required, valid email format
phone	InputNumber	Optional, numeric only
age	InputNumber	Required, min 18
gender	Radio Group	Required
department_id	Select	Required, must select valid department
role	Input	Required
joining_date	DatePicker	Required
is_active	Switch	Default TRUE
rating	Rate	Default 0 Optional
tags	Select (mode=multiple)	Optional
profile_color	ColorPicker	Optional
availability_time	TimePicker	Optional
resume	Upload (PDF)	Optional, max 5MB
profile_picture	Upload (Image)	Optional, jpg/png ⩽2MB
agreement	Checkbox	Required, must be checked

4. Validation Rules

Rule Type	Condition
Required Fields	All mandatory fields must be filled

Email	Must match valid email format
Number	Must be numeric where applicable
Minimum Age	Age must be ≥ 18
File Upload	PDF $\leq$ 5MB, Image $\leq$ 2MB (jpg/png only)
Select Fields	Must contain valid IDs
Checkbox	User must agree to terms before submission

5. Database Schema

5.1 users Table

Column	Type	Description
id	INT	Primary key, Auto Increment
first_name	VARCHAR(100)	Required
last_name	VARCHAR(100)	Required
email	VARCHAR(150)	Required, Unique
phone	VARCHAR(20)	Optional
age	INT	Min 18
gender	ENUM('Male','Female','Other')	Required
department_id	INT	Foreign key to departments.id
role	VARCHAR(50)	Required
joining_date	DATE	Required
is_active	BOOLEAN	Default TRUE
rating	FLOAT	Optional
description	TEXT	Optional
tags	VARCHAR(255)	Optional
profile_color	VARCHAR(20)	Optional
availability_time	TIME	Optional
resume	VARCHAR(255)	Optional (path)
profile_picture	VARCHAR(255)	Optional (image URL)
agreement	BOOLEAN	Required

5.2 departments Table

Column	Type	Description
id	INT	Primary key, Auto Increment
name	VARCHAR(100)	Required
code	VARCHAR(10)	Required, Unique
location	VARCHAR(100)	Optional