

Graduation project management system

Description : the system contains several core data models that structure and manage the graduation project workflow. The User model represents system users who can be students, supervisors, or admins. It includes personal and login-related details such as username, university ID, gender, role, and password, with strong validation rules to ensure proper input formats and secure role assignment. The Project model stores information about graduation projects submitted by student groups, including the project title, description, group name, start date, and creation date. It helps in tracking and organizing the progress and timeline of each project. The Section model defines academic sections (or batches) that group students by term and year. Each section contains a name, academic term, year, and number of students, which supports the organization of students into manageable units for supervision and project distribution. Together, these models ensure a structured, validated, and efficient graduation project automation system.

User model

username → tyap :String

@NotEmpty(message = " username must be not empty")

@Size(min = 3, max = 12 , message = " username must be between 3 and 12 characters)

ID → tyap :String

@NotEmpty(message = "ID must be not null")

@Pattern(regexp = "^[0-9]{7}\$", message = "ID must be 7 digits exactly")

Role → tyap: String

@Pattern(regexp = "^(admin|supervisor|student)\$", message = "Role must be either admin , supervisor ,or student")

@NotEmpty(message = " Role must be not empty")

Gender → tyap : String

@Pattern(regexp = "^(male|female)\$", message = " Gender must be either male or female")

@NotEmpty(message = " Gender must be not empty")

Password → tyap :String

@NotEmpty(message = "Password must not be empty")

@Pattern(regexp = "^(?=.*[a-z])(?=.*[A-Z])(?=.*\\d){8,}\$", message = " Password must contain at least 8 characters, including upper/lowercase")

project model

Title → tyap :String

@NotEmpty(message = "Project title must not be empty")

@Size(min = 3, max = 100, message = "Project title must be between 3 and 100 characters")

Description → tyap : String

@NotEmpty(message = "Description must not be empty")

@Size(min = 10, message = "Description must be at least 10 characters long")

GroupName → tyap : String

@NotEmpty(message = "Group name must not be empty")

@Pattern(regexp = "^[a-zA-Z0-9_\\-\\s]+\$", message = "Group name can only contain letters, numbers, dashes, underscores and spaces")

StartDate → tyap : String

@NotEmpty(message = "Start date must not be empty")

@Pattern(regexp = "^\\d{4}-\\d{2}-\\d{2}\$", message = "Start date must be in the format YYYY-MM-DD")

creationDate → tyap : String

@NotEmpty(message = "Creation date must not be empty")

Pattern(regex = "\\d{4}-\\d{2}-\\d{2}\$", message = "Creation date must be in the format YYYY-MM-DD")

Section model

SectionName → tyap : String

@NotEmpty(message = "Section name must not be empty")

@Pattern(regex = "[a-zA-Z0-9\\s]+\$", message = "Section name must contain only letters and numbers")

Term → tyap : String

@NotEmpty(message = "Term must not be empty")

@Pattern(regex = "[1-3]\$", message = "Term must be either 1, 2, or 3")

NumberOfStudents → tyap : String

@NotEmpty(message = "Number of students must not be empty")

@Pattern(regex = "^[1-9][1-9][0-9]100\$", message = "Number of students must be between 1 and 100")