**SpringBoot Project**

**🎓E-Class System**

# Project Members:

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# Supervisor

## Dr. Subecz Zoltan

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**John Von Neumann University**

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**Introduction with Thanks**

We are immensely grateful to the divine presence that has granted me the fortitude, vitality, and determination to accomplish this endeavor.

Our heartfelt gratitude extends to my beloved family members whose unwavering support and various forms of assistance have propelled me to this juncture of our educational journey.

We extend our sincere appreciation to Dr. Subecz Zoltan, our esteemed supervisor, whose invaluable guidance, insightful feedback, and unwavering encouragement have been instrumental in bringing this project to fruition.

We express profound gratitude to the esteemed members of the evaluation committee for graciously agreeing to assess our work.

Lastly, We extend heartfelt thanks to all the educators who have imparted their knowledge and wisdom, as well as to all individuals who have supported and assisted us throughout my academic and professional pursuits.

**INSTRUCTION**

1. On the first page, present the company on a spectacular website **(2 points)**
2. Have Registration, Login option **(3 points)**

- The "Login" menu item is visible if the user is not logged in.

- The "Logout" menu item is visible when the user is logged in.

- Display the logged-in user on the system header, if logged in

1. Distinguish at least 3 user roles: **(3 points)**

Admin, User, Visitor

The appearance of the menu items and the availability of the pages vary depending on

which user is using the site. (e.g. admin page)

1. Have a page where you display data from the chosen database **(2 points)**

Use the data of 3 tables from the database.

1. One page should have a contact form, which you can use to send a message **(2 points)**

and can be sent to the site owner. Check the form correct filling with

server-side validation. Save the sent form data to the database.

1. Make it possible to view previous point messages on a table from the database. **(2 points)**

in reverse chronological order. Print the sending time and the sender name

for each message. In the case of a non-logged-in user: "Guest".

1. Implement a RESTful API in the application. **(3 points)**

Test API functionality with both cURL and Postman. Take screenshots

of the tests to the documentation

1. Use the GitHub (github.com) version control system. **(2 points)**

**(Mandatory element! The source will be checked based on it)**

1. Use the project work method on GitHub: **(2 points)**

Display which part of the project was prepared by which group member.

Don't just upload the finished application in one step, but also the partial states

in at least 5 steps.

**Project Overview**

The EClass System is a Java-based web application designed to manage educational data, featuring functionalities like user registration, login, and CRUD operations for managing student information.

**Team Collaboration**

**Team Members**

* 🧑‍💻Suleyman Jumaniyazov

**Work Distribution**

* **Suleyman Jumaniyazov**
  + Implemented user registration and login
  + Developed CRUD operations for Users and Students
  + Integrated Spring framework for web functionalities
  + Handled database connectivity and queries

**Technical Architecture**

**Technologies Used**

* Java 17
* Spring Boot
* MySQL
* Thymeleaf (for view templates)
* Maven

**Key Features**

**User Management 🧑‍💼**

* + ➕🔍✏️❌CRUD operations for Users
  + Registration and login functionalities
  + Role-based access control

**Student Management 📚**

* + ➕🔍✏️❌CRUD operations for Students
  + Data import and export utilities
  + Advanced filtering and searching

**Database Structure 💾**

**Tables**

users

* + id (BIGINT PRIMARY KEY AUTO\_INCREMENT) 🆔
  + name (VARCHAR)
  + email (VARCHAR)
  + password (VARCHAR)
  + created\_at (TIMESTAMP DEFAULT CURRENT\_TIMESTAMP)
  + role (VARCHAR)

students

* + id (BIGINT PRIMARY KEY AUTO\_INCREMENT) 🆔
  + sname (VARCHAR)
  + class (VARCHAR)
  + boy (INT)

**Project Setup and Deployment**

**Prerequisites**

* Java Development Kit 17
* Maven
* MySQL

**Building the Project**

mvn clean package

**Running the Application**

java -jar target/eClassSystem-1.0-SNAPSHOT.jar

**GitHub Repository**

* Repository Link: [Insert GitHub Repository URL]

**🧩 Development Workflow**

**🎬 Project Initialization**

* + Create project structure
  + Set up Maven dependencies
  + Configure Spring Boot environment

**🗃️ Database Setup**

* + Design MySQL schema
  + Implement data import mechanisms
  + Create CRUD service classes

**🖥️ UI Development**

* + Design Thymeleaf templates
  + Implement Spring MVC controllers
  + Create interactive components

**🔌 Service Integration**

* + Develop user management features
  + Implement student management features
  + Add error handling and logging

**🧪 Testing and Refinement**

* + Unit testing
  + Integration testing
  + User experience optimization

**🚧 Challenges and Solutions**

**📡 Database Connectivity**

* + Challenge: Ensuring reliable connection to the MySQL database
  + Solution: Used connection pooling and handled SQL exceptions

**🧵 Data Synchronization**

* + Challenge: Managing concurrent data access
  + Solution: Implemented transaction management and synchronized blocks

**Thanks for time and attention.**