

# EA Project Description

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*CS544 March 2020*

## Goal

The goal of this project is to give you hands-on, practical experience with building a RESTful web services system using Spring, Spring Boot, Spring MVC, Spring Data and JPA/Hibernate.

## Working as a team

You are required to work with your team to create a project. But you should be aware that everyone still has to give their own presentation; there are no “team” presentations, although I do ask that members of a team present consecutively (no gaps / other people in between). You need to work together and share responsibilities and workload.

## Course Enrollment System

We are trying to create a collection of RESTful web services to automate the process of enrollment for Compro students. Each Compro student should be able to create up to 4 enrollments for the future 4 blocks during the enrollment period. Faculty should be able to “view” the enrollment for any student. Admins should be able to add new courses and offerings and edit any enrollment record.

## Step 1 – Requirements (Domain Driven Design)

Create a UML class diagram of the domain based on the requirements below

- Every **Faculty** has an id, name and title (e.g. “Professor”, “Associate Professor”, etc.)
- Every **Student** has an id, student ID (e.g. “61-1234”), name, email and mailing and home address
- Every **Address** record has id, street, city, postalCode and country (addresses can be shared by multiple students)
- Every **Course** has an id, code (e.g. “CS544”), name (e.g. “Enterprise Architecture”) and description (e.g. “Frameworks and best practices used in building large scale software systems”)
- Every **Block** has an id, code (e.g. “2020-03”), name (e.g. “March 2020”), semester (e.g. “Spring”), block sequence number, start date and end date
- Every **Offering** of a course has an id, code (e.g. “CS544-2020-03-01” which is basically a combination of Course, Block and Section),
- Every **Section** has an id and connects an Offering to a Faculty. In other words, an Offering (which is a course offered in a particular block) can also be taught by multiple faculty. For example we can have two MPPs going on in parallel taught by different professors.
- An **Entry** is basically a group of students and has an id, name and start date, enrollment start date and enrollment end date. Each entry has write access to the enrollment system only during those enrollment dates. Outside of that window, the access is read-only.

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## **Step 2 - Architectural Analysis and Design**

Sit with your team and agree on a high-level architecture for your application. Your decision should include your choice of technologies. How do you secure the application?

## **Step 3 – Proof of Concept (POC)**

Choose one simple use-case and make sure it works end to end. For example login and home page for one type of user.

## **Step 4 – Divide and Conquer**

Carefully read the requirements and divide the tasks (use-cases) among team members. Each team member is responsible for designing, developing and testing his/her use-case.

## **Step 5 – Integration Testing**

At least once a day sit together and integrate your code and test together and iterate (correct mistakes and refactor your design and development).

## **Presentation Delivery**

I will schedule your presentations from 9:30-12:30 and 1:30 – 4:30 on Thursday. You will have to present individually. Each group will have one hour, which means each member of the group gets to present for about 9 minutes.

I will evaluate you based on the following factors:

1. Clarity of Speech – Your presentation should be coherent and understandable. It is ok if you have an accent. It is ok if your English is not as fluent as a native speaker. However, it is not ok if you talk too fast! Enunciate and speak clearly.
2. Knowledge of Your Application – You are expected to be knowledgeable about the overall design of your app
3. Ability to Answer Questions – You need to be able to answer questions about the design and coding of your app. It always shows when your team members have done all the work and you have been mostly observing. Try to be an active participant and you will get full grade for this category.
4. Working Demo – Your app needs to work (obviously!). So if you succeed to show me working features, you will get maximum grade.
5. Creativity – Your whole team will get the same grade on creativity. You will be evaluated based on your creative choice of technologies you have used in your application.