



Software Engineering Professional Accelerator Program

Sprint Two

INSTRUCTOR: Dr. Albert Kahira
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| Sprint Code | Sprint Title |
|-------------|---|
| SEPA 102 | Building a Database-Driven Web Application using Django & SQL |

Project 1 (Uchaguzi Appl (Elections Tallying System))

In the just concluded Kenyan elections, we saw significant delays in election tallying due to the manual process. While most of the measures are put in place for legitimate reasons, this process could be simplified using software.

In this sprint, the objective is to build an elections tallying system. On the admin side, the administrator should be able to create presiding officers (PO). These POs should then be able to login into the system and submit results of their polling stations. The admin should also be able to create a polling station. Eventually, we can tally the results of the elections once entered by the PO and display it on the front end.

For this project, start by creating a simple front end page and an admin page(Django already has an admin module).

Further clarification will be given as we move on.

Project 2 (Doctor Booking System (Afya App))

From time to time, patients usually require specialized treatment in cities such as Nairobi. You can either visit the doctor's office to get an appointment or make a phone call. We want to simplify the process by allowing patients to see a list of doctors in a certain city and book an appointment with them.

We want to build a web application called Afya (you can also give it another name). The admin should be able to create user accounts for doctors and then doctors can login and create their schedule. A patient first needs to create a user account before being able to book a doctor. You can also explore options for doctors to create their own accounts but these accounts should be verified by the admin first before they appear for patients to book.

So there are 3 user levels, administrator, doctor and patient. When a patient books an appointment with a certain specialist, they get an automated email. When a doctor logs into the system, they should see a list of patients that have booked their services and the appointment times.

Project 3 (Food Ordering App (Chakula App))

The emergence of cloud kitchens and many people cooking and selling food from their own homes means that there is a need for a food marketplace. However, it is not feasible for

each small food seller to create their own application to sell their food. We want to create a marketplace for all the food sellers.

The idea is simple, an individual or a restaurant can create an account on the system, the administrator approves the account and then the individual/restaurant owner can upload the foods they sell with their prices. Customers need to create an account first to be able to order the foods from any of the restaurants or sellers.

When fully developed, one can even make payments and input an address for food to be delivered. However, for the first phase, the most important thing is for food sellers to be able to upload their menus and for customers to be able to order the food.

Sprint Outcomes

At the end of the Sprint, the learner is expected to:

1. Be able to use the **Django framework** in developing a web application
2. Have a good understanding of **database design** in SQL
3. Be able to integrate **SQL Database** in data storage for a Django web app

Prerequisites

Programming concepts, Python, Object-Oriented Programming, GIT Version Control, Data Structures, and Algorithms.

Sprint Assessment

At the end of the sprint, you will be required to do a demo in front of your peers and other engineers from the industry. Some aspects that will be assessed include;

- General functionality
 - Good programming
 - UX/UI
 - Error Handling
 - Input Validation
 - Security Features
- Code Clarity
- Documentation: Code Comments and Documentation in ReadME
- Presentation

Getting Help

Instructor: Dr. Albert Kahira

Email: albert@jengaschool.com

You can also book a one on one session with the instructor through this link

<https://calendly.com/kahira/meeting>

Teaching Assistant: Isaac

Email: isaac@jengaschool.com

You can also book a one on one section with the teaching assistant through this link

<https://calendly.com/alfred-jengaschool/one-on-one>

Slack Channel

Main Channel: <https://jenga-students.slack.com/archives/C03FP8WMGPK>