

Graduation Projects

Academic Year

2024–2025

College of Computer Science
and Information Systems



مشاريع التخرج

العام الجامعي

1446–1447 هـ

كلية علوم الحاسب
ونظم المعلومات

These pages present the graduation projects completed by students of the College of Computer Science and Information Systems at Najran University in the academic year 1446–1447 AH (2024–2025).

The graduation project is the capstone of the Bachelor of Science in Computer Science. Over two consecutive courses, Graduation Project 1 and Graduation Project 2, student teams work under the supervision of a faculty member to define a problem, design and build a solution, and present it to an examination committee.

Each page presents one project: its aim, how it works, its main features and the technologies the team used, with an image taken from the team’s own documents. The texts are editorial summaries of each team’s final report and presentation, prepared by the Graduation Projects Unit.

تعرض هذه الصفحات مشاريع التخرج التي أنجزها طلاب وطالبات كلية علوم الحاسب ونظم المعلومات بجامعة نجران في العام الجامعي 1446-1447 هـ (2024-2025م).

يمثل مشروع التخرج الخبرة الختامية في برنامج البكالوريوس في علوم الحاسب؛ إذ يعمل الطلاب في فرق على مدى مقررین متتاليين، مشروع التخرج 1 ومشروع التخرج 2، بإشراف عضو من هيئة التدريس، فيحددون مشكلة ويصممون لها حلاً وينفذونه، ثم يعرضونه أمام لجنة مناقشة.

تعرض كل صفحة مشروعًا واحدًا: هدفه، وطريقة عمله، وأبرز خصائصه، والتقنيات التي استخدمها الفريق، مع صورة من وثائق الفريق نفسه. والنصوص ملخصات تحريرية للتقرير النهائي والعرض التقديمي لكل فريق، أعدتها وحدة مشاريع التخرج.

COLLEGE VISION

Leadership in Computing Education and Research and Active Contribution

COLLEGE MISSION

Preparing distinguished graduates through high-quality and continuously developed programs

DEPARTMENTS

الأقسام العلمية

Computer Science	علوم الحاسب
Information Systems	نظم المعلومات
Network and Communications Engineering	هندسة الشبكات والاتصالات

The year at a glance

العام في سطور

Projects by domain

Number of projects in each domain

Business, Commerce & Finance



Campus & University Services



Government & Community Services



Health & Wellbeing



Education & Learning



Culture, Heritage & Tourism



Smart Cities, Mobility & Transport



Accessibility & Inclusion



Media, Games & Entertainment



المشاريع حسب المجال

الأعمال والتجارة والمالية

الخدمات الجامعية

الخدمات الحكومية والمجتمعية

الصحة والرفاه

التعليم والتعلم

الثقافة والتراث والسياحة

المدن الذكية والتنقل والنقل

الوصول الشامل والدمج

الإعلام والألعاب والترفيه

Most-used technologies

التقنيات الأكثر استخدامًا

Number of projects for each technology used in 6 or more projects

MySQL



PHP



HTML



CSS



JavaScript



Python



XAMPP



Firebase



Flutter



25

Projects

المشاريع

125

Students

الطلاب والطالبات

20

Supervisors

المشرفون

9

Application domains

مجالات التطبيق

Department and campus

القسم والشرط

Number of projects

DEPARTMENT	FEMALE	MALE	TOTAL
Computer Science علوم الحاسب	18	7	25

Computer Science	علوم الحاسب		
01	APMS	6	13
02	Case Connect Website	7	14
03	Cooperative Training Unit Portal (CTUP)	8	15
04	Efficient Scheduling System (ESSNU)	9	16
05	Felony Facades: AI Unleashed for Crafting Criminal Faces	10	17
06	Fix Me	11	18
07	Hand Gesture Sign Recognition (HGSR)	12	19
08	LawBridge	13	20
09	Mandatory Training Platform	14	21
10	MASRAMS	15	22
11	Mawaed	16	23
12	Money Management and Budgeting Mobile App	17	24
			25
			26
			27
			28
			29
			30

Computer Science

علوم الحاسب

25

Projects مشروعات

125

Students طالبًا وطالبة

Projects 01–25 · pages 6–30

المشاريع 01–25 · الصفحات 6–30

01

APMS

Automated portal for modifying schedules

A web portal where students submit schedule modification requests that supervisors and scheduling doctors review, decide and track.

During the course modification period at Najran University, students need to fix time conflicts, full sections or missing sections, and each fix needs a decision from a scheduling doctor. The process was manual and unstructured, relying on face-to-face visits and scattered emails. Students gathered at the doctor's office, requests went unresolved, and nobody could tell whether a request had been handled.

The team built the Automated Portal for Modifying Schedules (APMS), a web application written in PHP with a MySQL database, HTML5, CSS3 and Bootstrap, run locally on XAMPP. Students register, confirm their university email through an activation link, and submit and track requests. Academic supervisors review requests and resolve them or forward them to the scheduling doctor, who approves or rejects them and notifies the student. Approved requests can be exported to Excel. The report concludes that APMS replaces manual methods with a structured digital process.

BUILT WITH

PHP

MySQL

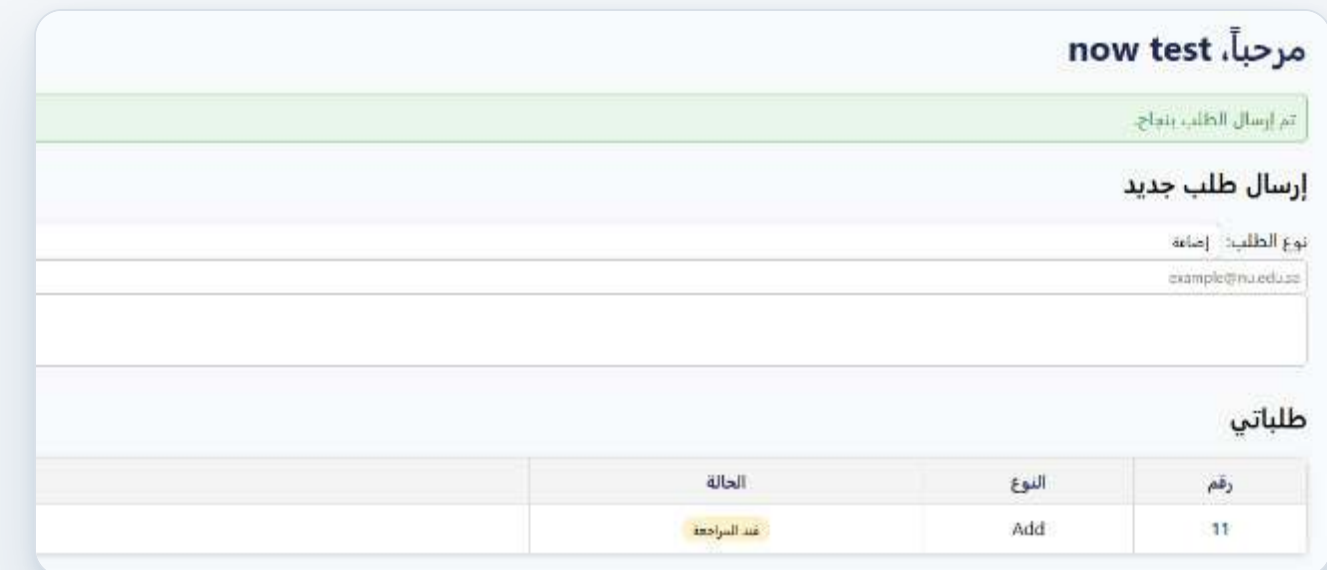
HTML5

CSS3

Bootstrap

XAMPP

phpMyAdmin



مرحباً، now test

تم إرسال الطلب بنجاح

إرسال طلب جديد

نوع الطلب: إحصاء

example@nu.edu.sa

طلباتي

رقم	النوع	الحالة
11	Add	قيد المراجعة

Student page for submitting and tracking schedule modification requests

KEY FEATURES

- ◆ Online schedule modification requests with status tracking
- ◆ Email verification at student registration
- ◆ Supervisor review and escalation to scheduling doctors
- ◆ Excel export of approved requests

TEAM

Mohammed Salem Alyami
Fahad Sultan Lsloom

Mohammed Abdullah Alyami

SUPERVISOR

Dr. Bakri Alawaji

SERVES

Students, academic supervisors
and scheduling doctors

6

Male Campus
Second Semester

02

Case Connect Website

Legal cases and legislation search platform

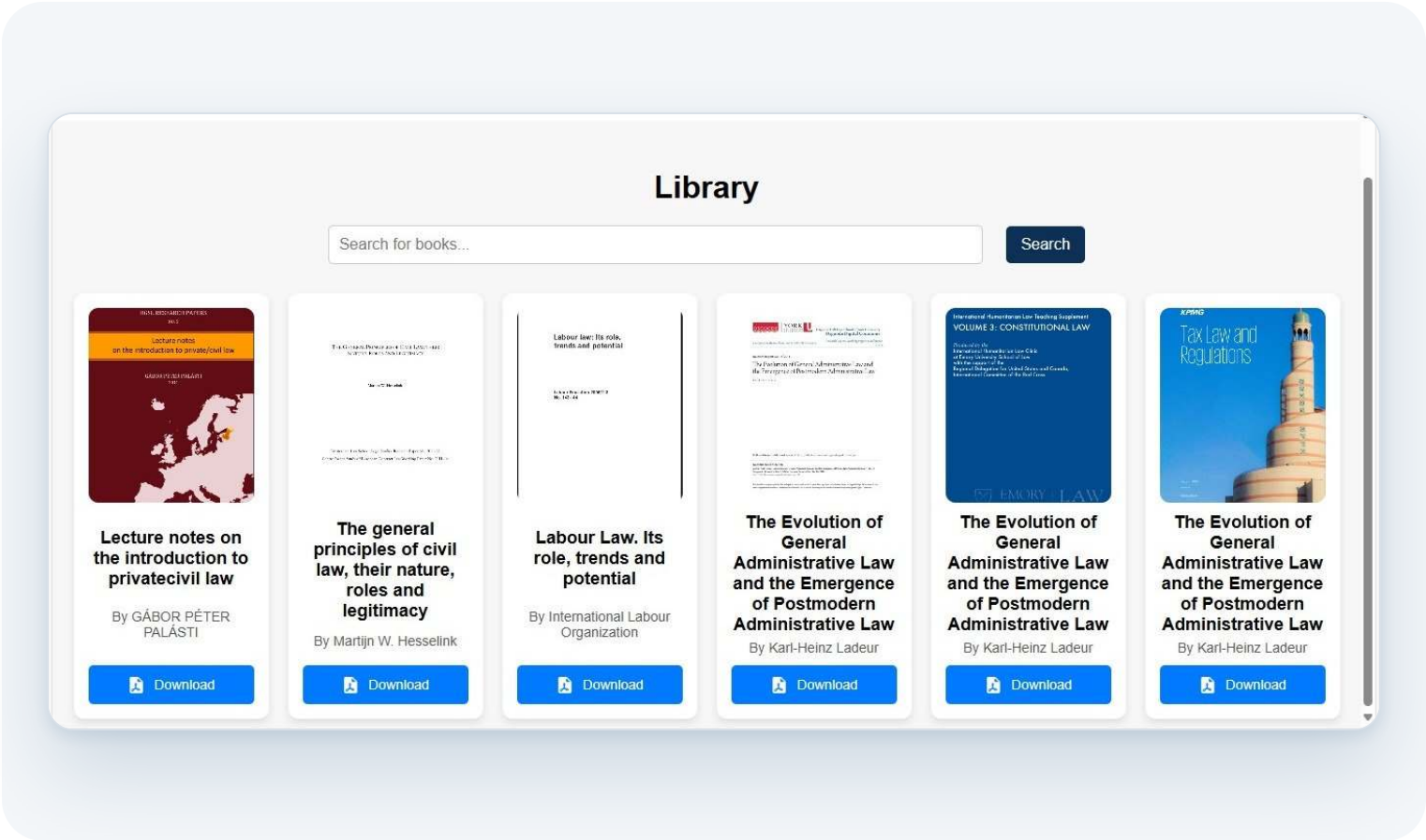
A legal website where users search legislation and judicial documents, chat with specialists and download legal books.

Legal information is plentiful but hard to navigate. The team’s report points to lengthy, complex documents that take significant time and effort to locate, and it reviews existing Saudi judicial portals. The project targeted legal professionals, law students and the general public, and the team surveyed 286 people about legal websites to shape its requirements.

The team built Case Connect, a PHP and MySQL website with separate pages for customers, lawyers, employees and administrators. A search engine built with Elasticsearch and Kibana returns legislation and judicial documents, public and private chats connect users with legal specialists, and a library offers legal books for download. Customers and lawyers verify sign-up and login with a one-time password sent to their email and phone number. Employees upload documents and books and can report documents to administrators. The team tested sign-up, login, document upload and book upload.

BUILT WITH

- PHP
- MySQL
- Elasticsearch
- Kibana
- HTML/CSS
- XAMPP
- phpMyAdmin



Library page of Case Connect with book search and download buttons

KEY FEATURES

- ◆ Search engine for legislation and judicial documents
- ◆ Public forum and private chats with legal specialists
- ◆ Library of legal books to search and download
- ◆ One-time password verification at sign-up and login

TEAM

Jumanah Sultan Al-Habiss
Yousra Muhammad Al-Haidar
Gadi Mabrouk Al-Rayhan

Ghazlah Hassan-Alyami
Mariam Jaber Al-Wadai

SUPERVISOR

Dr. Abdulwahab Alazeb

SERVES

Legal professionals, law students and the general public

7
Female Campus
First Semester

03

Cooperative Training Unit Portal (CTUP)

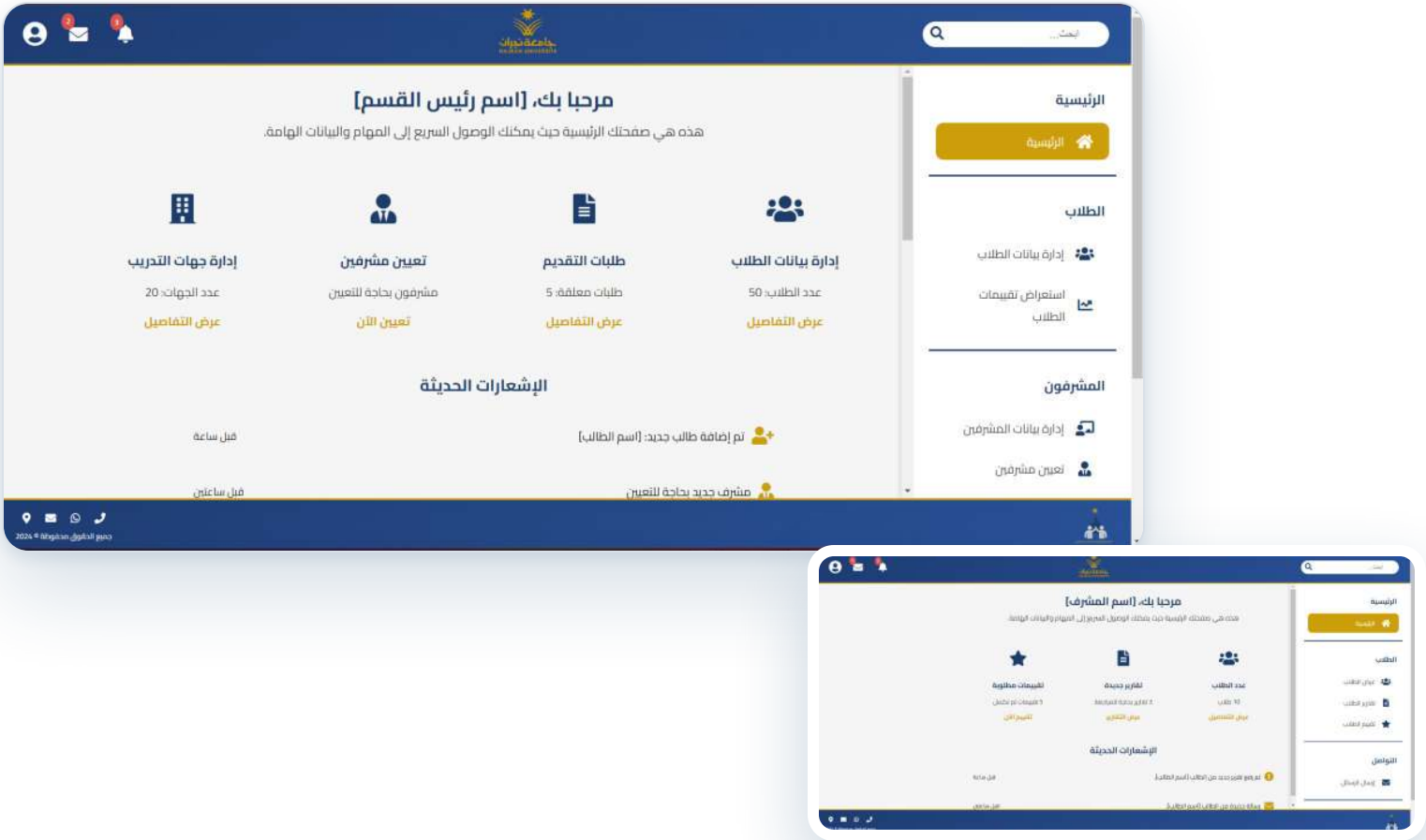
A web portal where Najran University students apply for cooperative training and the training unit manages requests, letters and evaluations.

Cooperative training prepares Najran University students for work, but without an electronic platform, students find it hard to locate and apply for training places, companies reach few students with their advertisements, and the university, students and training entities have limited ways to communicate. The training unit also lacked an effective way to show its accomplishments.

The team built the Cooperative Training Unit Portal around the needs of the university’s training unit. It is a Django web application in Arabic with three kinds of login: students, academic supervisors and the head of the unit. Students browse training opportunities, submit training and letter requests, upload reports and send messages. Supervisors review reports and evaluate students. The head manages students, supervisors and training entities. The team tested accounts, training, communications, evaluations and reports with functional and non-functional test cases, all of which the report records as passed.

BUILT WITH

- Python
- Django
- MySQL
- PostgreSQL
- HTML
- CSS
- JavaScript
- PythonAnywhere



- 1 Training unit head’s dashboard with student, request and entity summaries
- 2 Supervisor home page showing students, new reports and pending evaluations

KEY FEATURES

- ◆ Browsing and applying for training opportunities
- ◆ Official letter requests issued as PDF
- ◆ Messaging between students and supervisors
- ◆ Supervisor evaluations of student training

TEAM

Albandari Aljuhani
Asma Alalharth

Jawaher Huraysi
Ahoud Alyami

Maram Al Obaia

SUPERVISOR

Dr. Hamad Abosaq

SERVES

Najran University students,
supervisors and training entities

8

Female Campus
First Semester

04

Efficient Scheduling System (ESSNU)

Appointment booking for Najran University health college clinics

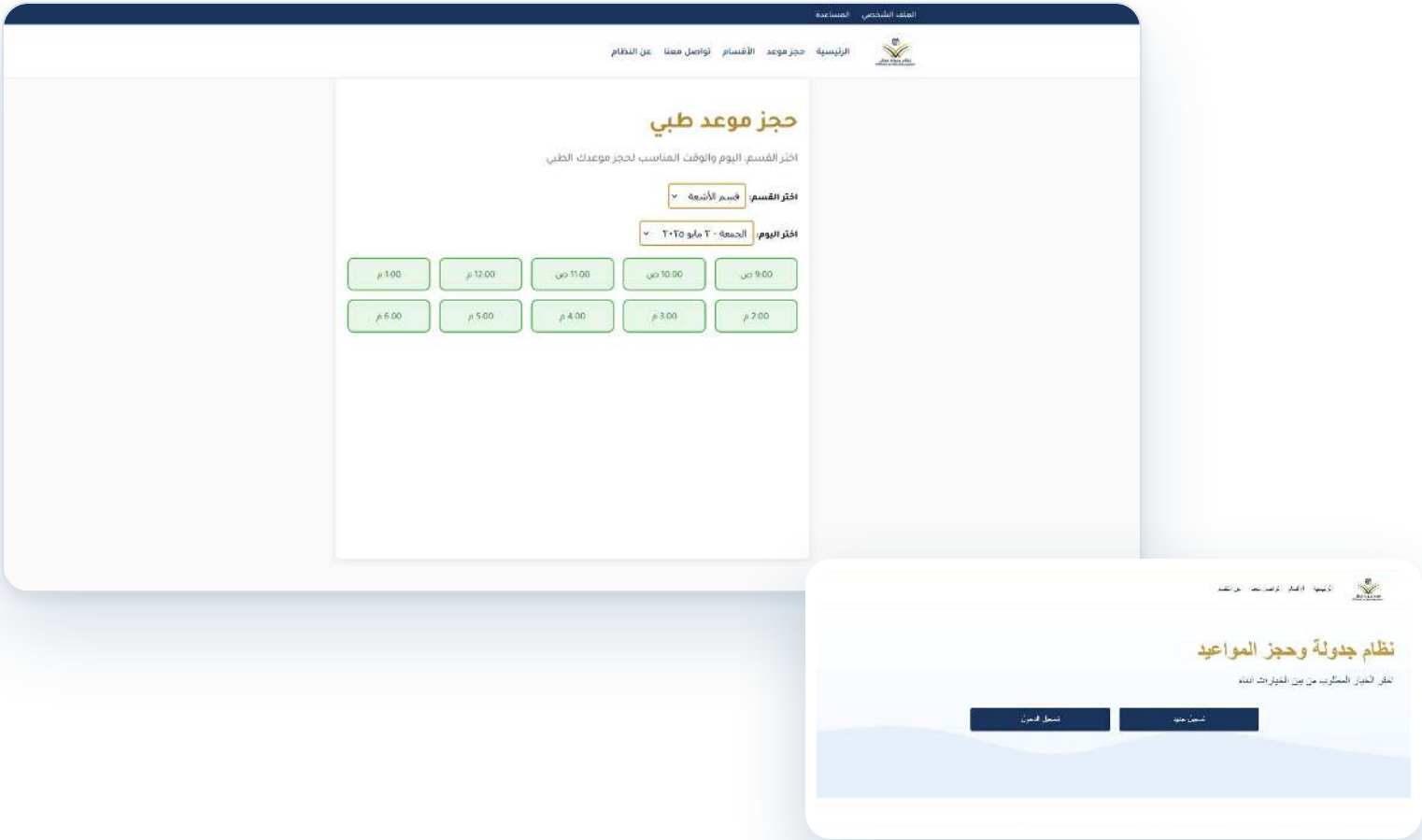
A web system where patients book clinic appointments at Najran University health colleges and supervisors assign patients to trainees.

Appointments at the health college clinics of Najran University are arranged manually, which the team describes as slow, error-prone and liable to double bookings. Patients must travel to book or reschedule, and trainees do not receive an even share of patients. In a team survey of 45 respondents, all said a booking website would be welcome.

The team built ESSNU, an Arabic-language website using HTML, PHP, CSS and JavaScript and an Agile method. Patients register with a university email address, choose a department, date and time slot, confirm the booking and receive an appointment number. Trainees sign up and are accepted by supervisors, who assign patients and appointment dates to them. The team also designed email and SMS reminders, appointment history and an administrative dashboard. The report’s testing chapter walks through patient sign-up and login, a booking at the College of Dentistry, and trainee and supervisor sign-up.

BUILT WITH

- HTML
- CSS
- JavaScript
- PHP



- 1 Medical appointment booking page with department, day and time slots
- 2 Arabic welcome page with sign-up and login buttons

KEY FEATURES

- ◆ Online booking by department, date and time slot
- ◆ Registration for patients, trainees and supervisors
- ◆ Supervisor assignment of patients to trainees
- ◆ Booking confirmation with an appointment number

TEAM

Ahmed Mohammed Baeshen
Mohmmad Hissyn Al Abyah
Mohammed Jamah Hamdi

Naif Abdulrahman Alghamdi
Ibrahim Abdullah Al Masfuh

SUPERVISOR

Dr. Jarallah Alqahtani

SERVES

Najran University patients, health college trainees and supervisors

05

Felony Facades: AI Unleashed for Crafting Criminal Faces

Text-to-image comparison for suspect face generation

A study comparing two text-to-image AI models that generate suspect face images from witness descriptions, aimed at law enforcement.

Investigators often rely on sketch artists who draw a suspect from a witness's spoken description, a slow process in which the drawing can differ from reality. Automated face recognition needs clear photos or video, which may not exist when only a description is available. The team's report proposes using AI to turn witness descriptions into realistic facial images that investigators can use.

The team compared two text-to-image models, Fooocus 2.5.5, which is based on Stable Diffusion, and Clip2latent, which combines CLIP with StyleGAN, working in Python on Google Colab. They also prepared a custom dataset of 35 face images for the Fooocus model. Both models were tested on text descriptions of real criminals, and the outputs were scored by CLIP cosine similarity to the description. The report gives similarity of about 70% to above 90% for Fooocus and 76% to 88% for Clip2latent.

BUILT WITH

Python

Google Colab

PyTorch

Fooocus

Stable Diffusion

Clip2latent

CLIP

StyleGAN

05

Government & Community Services
الخدمات الحكومية والمجتمعية

KEY FEATURES

- ◆ Generates faces from text descriptions
- ◆ Compares Fooocus 2.5.5 and Clip2latent
- ◆ Scores results with CLIP cosine similarity
- ◆ Custom 35-image face dataset

TEAM

Teif Dahfer
Asayel Zamel

Ghala Saleh
Taghreed Hussin

Woloof Saleh
Albatool Hadi

SUPERVISOR

Dr. Hanan Halawani

SERVES

Police and investigative agencies

10

Female Campus
First Semester

06

Fix Me

Mobile app linking workers, contractors and customers

An Android app where customers find licensed workers and contractors in Saudi Arabia, request services, chat, pay and rate the work.

The report describes a labor market in Saudi Arabia where unreliable workers, poor-quality services, unreliable performance ratings and unpaid dues put customers, workers and contractors at risk. The team set out to give all three groups a more transparent and secure way to find and agree on work.

The team built Fix Me, an Android app written in Flutter and Dart with a PHP back end and database run on XAMPP. Workers register with professional licenses, and an administrator approves them.

Customers browse service categories, request a worker, choose card or cash payment and an address, chat with the worker, and rate the result. Contractors manage their workers and see ratings and reviews. The report documents test cases for login, registration, requests and password recovery, and states that the application was completely implemented. It lists a broader companion application as future work.

BUILT WITH

Flutter

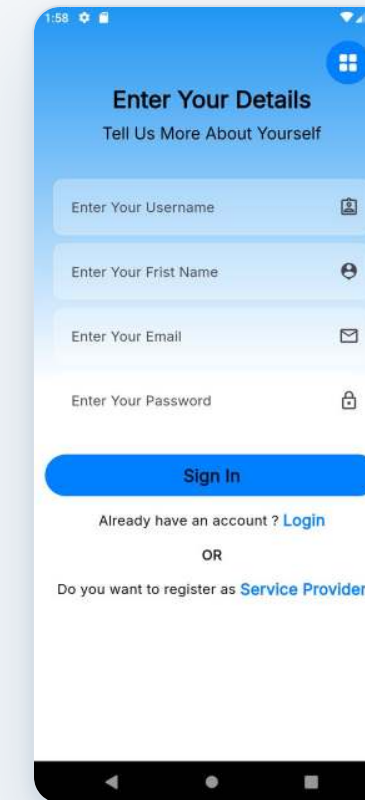
Dart

PHP

XAMPP

Firebase

Visual Studio Code



Customer sign-up screen with an option to register as service provider

KEY FEATURES

- ◆ Worker registration with professional licenses
- ◆ Service categories, requests and card or cash payment
- ◆ Chat between customers, workers and contractors
- ◆ Ratings and reviews of workers

TEAM

Sara Mohammed Yahya
Maram Sultan Al-Yami
Raghad Hussein Al-Wadi

Razan Yahya Al-Njrany
Alhanouf Mesfer Lesloom
Sara Mahdi Al-Wadi

SUPERVISOR

Ms. Soad Mohammed

SERVES

Customers, workers and
contractors in Saudi Arabia

11

Female Campus
First Semester

07

Hand Gesture Sign Recognition (HGSR)

Arabic Sign Language to text

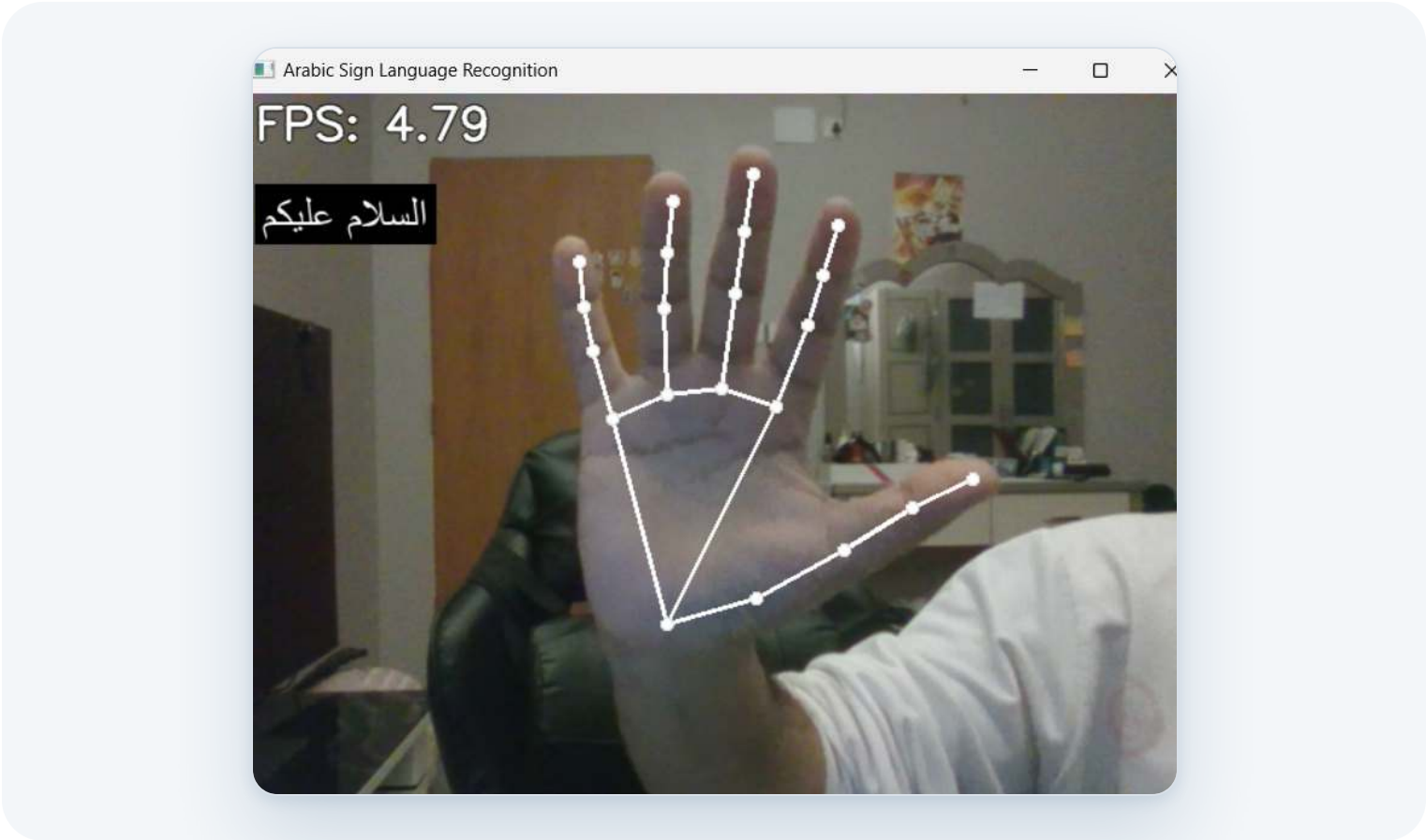
A camera-based system that recognizes Arabic Sign Language phrases from hand landmarks and shows them as Arabic text for deaf users.

Deaf and hard-of-hearing people face communication barriers because most people do not understand sign language and few try to learn it. Tools for Arabic Sign Language are less developed than those for other sign languages, and public Arabic datasets are scarce, so the team recorded its own training videos.

The team built HGSR, which reads camera frames, extracts hand landmarks and hand type with MediaPipe and OpenCV, and predicts the sign with a TensorFlow dense neural network converted to a TFLite model of about 40 KB. A Flask server reached through a Cloudflare Tunnel returns the prediction to an app that requires a Firebase login, and Arabic text is displayed with the arabic_reshaper library and the Bidi algorithm. The model covers three Arabic phrases. The report states 86.4% training and 83.0% validation accuracy, and also reports lower accuracy for individual phrases in live testing.

BUILT WITH

- Python
- MediaPipe
- OpenCV
- TensorFlow
- TensorFlow Lite
- Flask
- Firebase
- Cloudflare Tunnel



Live hand landmark tracking with the recognized Arabic phrase displayed on screen

KEY FEATURES

- Real-time hand landmark tracking from the camera
- Recognition of three Arabic sign phrases
- Arabic text display with right-to-left rendering
- Firebase login for app users

TEAM

Ahmad A. Al-Sharif
Abdulrahman M. Al-Mustanir
Faisal A. Al-Masabi

Abdullah E. Jarfan
Hassan J. Al-Sarrar

SUPERVISOR

Dr. Mohammed Hamdi

SERVES

Deaf and hard-of-hearing community

12

Male Campus
Second Semester

08

LawBridge

Legal resources and opportunities mobile app

A mobile app giving Saudi citizens affordable access to legal resources, and law students and graduates learning and job opportunities.

Many people in Saudi Arabia find it hard to book legal consultations, face high costs for legal services, and have little access to clear legal information. Law students and recent graduates also have few platforms for training, study trips and jobs. The team set out to bridge the gap between legal professionals and the public in a single mobile app.

The team built LawBridge with a cross-platform Flutter front end and a Django 5 back end that exposes REST endpoints for accounts, educational opportunities, legal resources, favorites and notifications, with token authentication and a MySQL database. An admin interface lets staff curate content and send notifications. Users register, log in, manage a profile and password, search, save favorites and read notifications. The team tested these workflows with scenario-based tests on an emulator and on physical devices, and reports that the app was responsive in both settings.

BUILT WITH

Flutter

Django

Django REST Framework

MySQL

Postman

TEAM

سارة محمد أبو حسن العسيري
أمجد مسفر آل سويدان
عائشة عيظة الصيعري

طيف حسين الوادعي
ياسمين سالم النجراني

SUPERVISOR

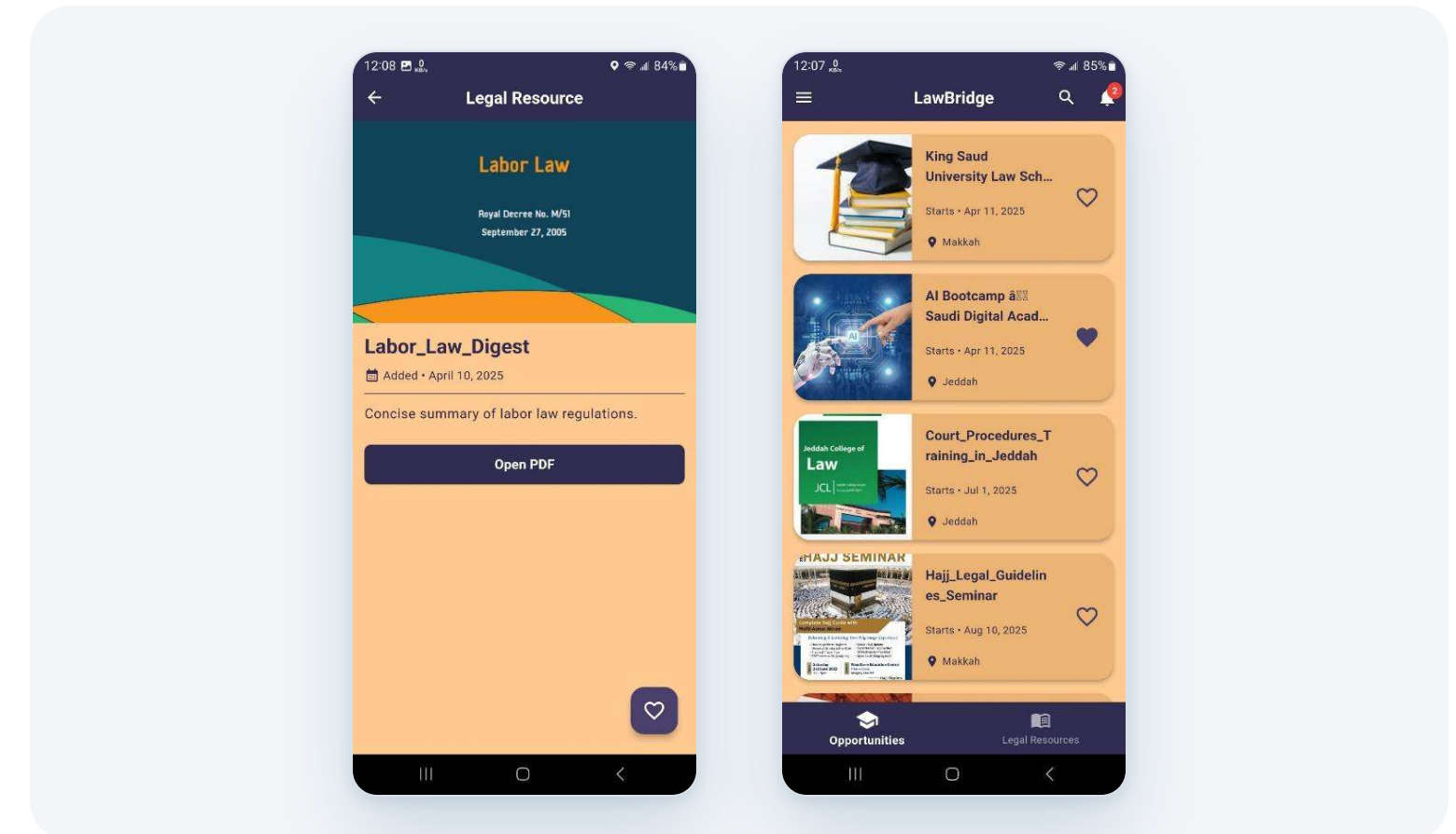
Dr. Naif Almudawi

SERVES

Saudi citizens, residents
and law students

13

Female Campus
Second Semester



- 1 Legal resource detail screen with an Open PDF button
- 2 Opportunities screen listing scholarships, bootcamps and training events

KEY FEATURES

- ◆ Browsing legal resources such as laws and guides
- ◆ Opportunities for law students and graduates
- ◆ Favorites, search and notifications
- ◆ Admin interface for curating content

09

Mandatory Training Platform

Web platform for student training placement

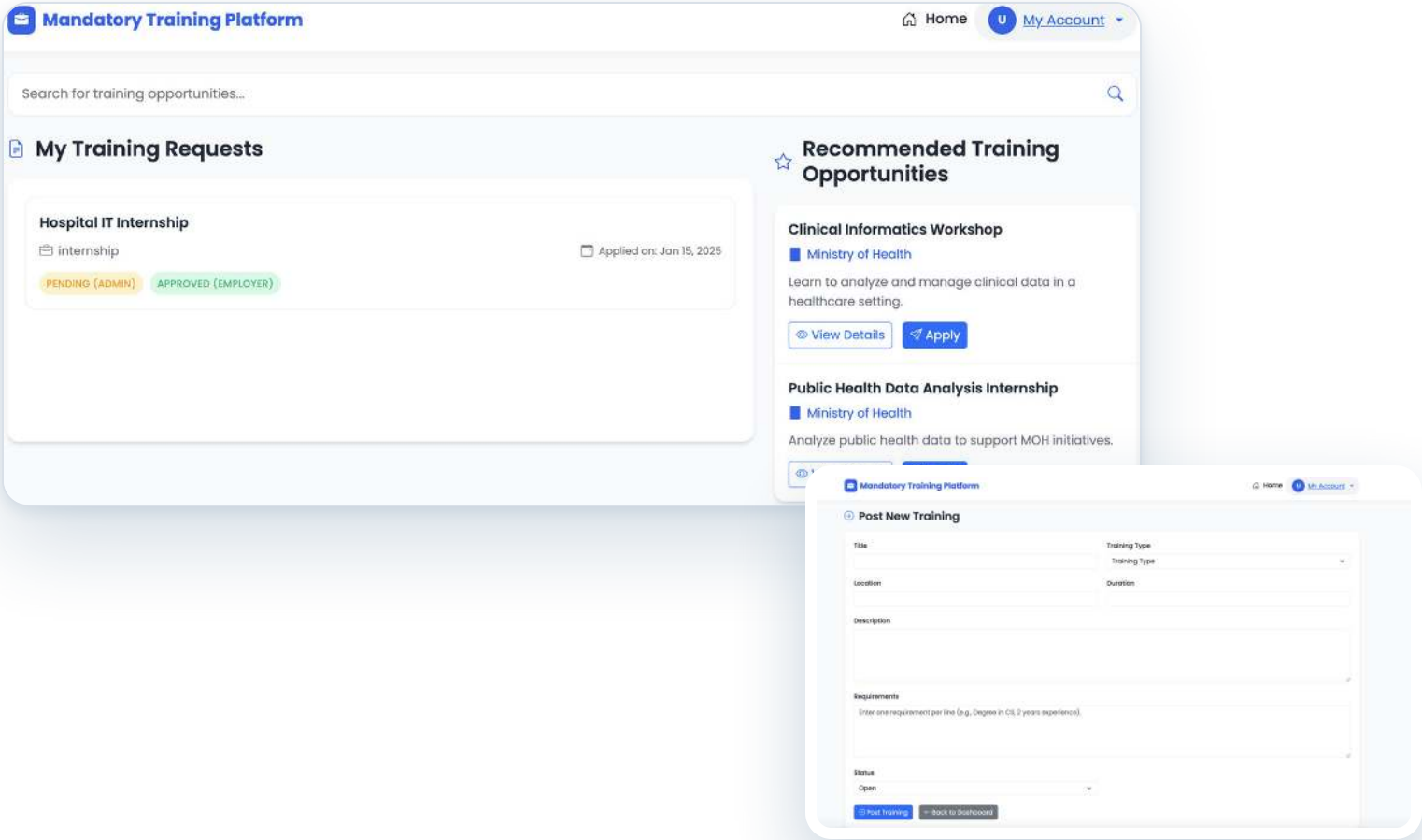
A bilingual web platform where students find and apply for mandatory training, employers post trainings, and administrators manage requests.

Students of the College of Computer Science and Information Systems at Najran University must complete mandatory training. The team’s problem statement says they lack a centralized place to find opportunities, while employers struggle to reach qualified candidates through general job boards and print advertisements. The team also surveyed potential users, using Microsoft Forms, about their experience of finding cooperative training.

The team built the Mandatory Training Platform, a web application in PHP with a MySQL database and a Bootstrap front end, available in English and Arabic. Administrators create user accounts, manage majors and approve or reject training requests. Employers post trainings and review applicants. Students keep a profile with a resume and skills, search and apply, and receive training recommendations from a module that calls the OpenAI API. The team tested login, user creation, applications and recommendations on a local XAMPP server.

BUILT WITH

- PHP
- MySQL
- HTML/CSS
- JavaScript
- Bootstrap
- OpenAI API
- XAMPP



- 1 Student dashboard with training requests and AI recommendations
- 2 Employer form for posting a new training

KEY FEATURES

- ◆ Admin-created accounts and request approval
- ◆ Employer posting of trainings and applicant review
- ◆ Student search and application with resume upload
- ◆ AI training recommendations from student skills

TEAM

Alhanouf Hadi Al Qawan
Naghm Mohameed Al Mukathir
Raghad Awad Alasmri

Abeer Saleh Al Bahri
Norah Abdullah Alseley
Amal Abdulhadi Alraihan

SUPERVISOR

Dr. Abdulwahab Alazeb

SERVES

CCSIS students,
administrators and employers

14

Female Campus
Second Semester

10

MASRAMS

Salon reservation and management system

A salon booking platform for Najran where customers find salons on a map and book services, and owners manage appointments.

Without a booking app, salon customers in Najran face unexpected waiting times, unclear prices and difficulty finding salons or comparing their services and offers. The team surveyed 60 people, and 93.3% of respondents said they wanted the application to include maps.

The team built MASRAMS as a PHP web application with Blade templates and a Bootstrap interface, switchable between English and Arabic. Customers browse salons on a Google Maps view, see services, prices and offers, book appointments, pay by card or cash and leave reviews. Salon owners use a dashboard to manage salons, employees, services, offers, appointments and payments, and can pin a salon's location on a map. The team worked in increments, and the report lists analytics, stronger security and payment-gateway integration as future work.

BUILT WITH

PHP

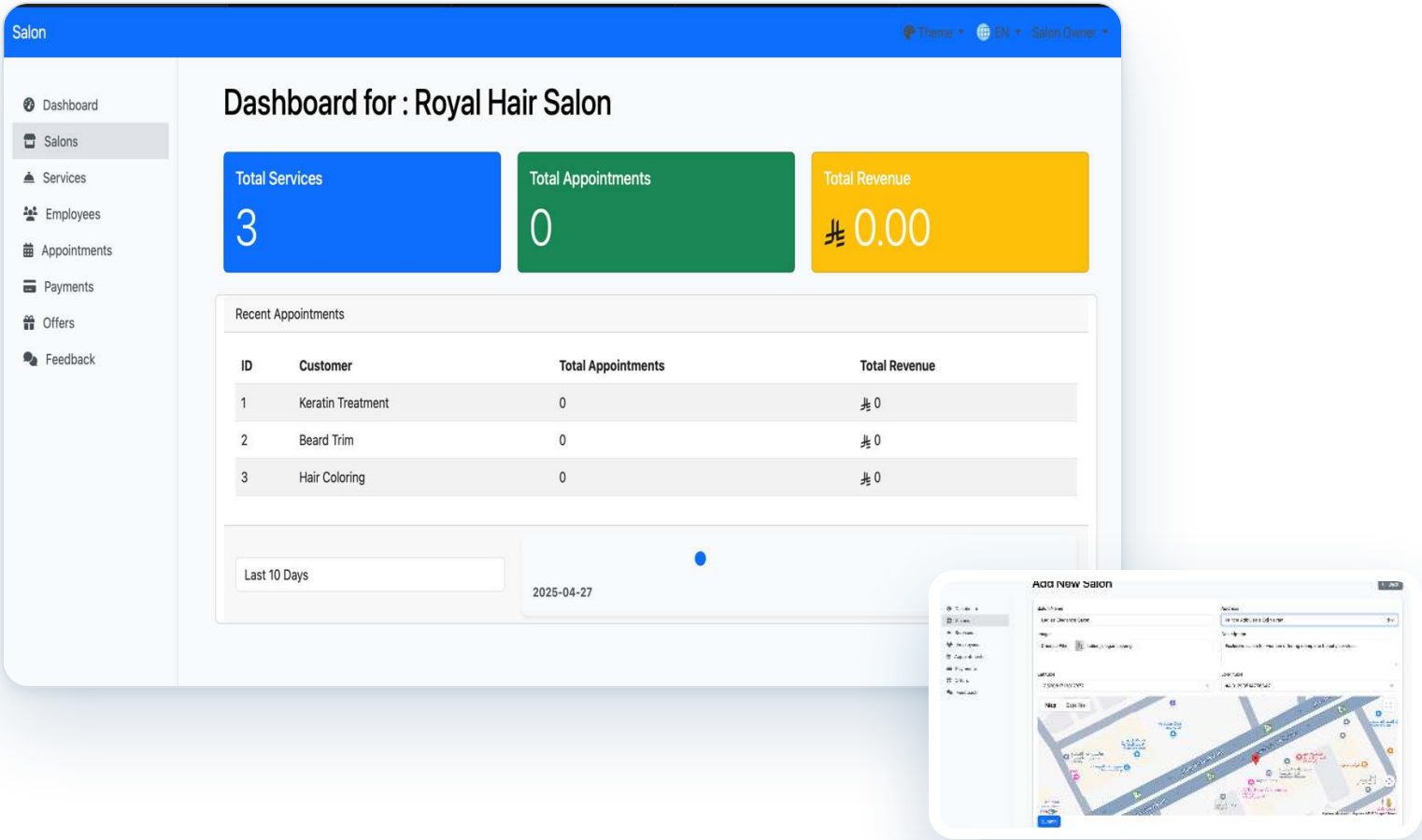
Laravel

MySQL

JavaScript

Bootstrap

Google Maps API



- 1 Salon owner dashboard with services, appointments and revenue totals
- 2 Add-salon form with map for pinning the salon location

KEY FEATURES

- Salon search on a map with services and prices
- Appointment booking with card or cash payment
- Owner dashboard for salons, staff and appointments
- Reviews and English/Arabic interface

TEAM

Helah Abdullah Ali Al-Shahri
Najwa Ali Al Fayed
Fatima Jawad Marzouq Al-Saeed

Shaza Mohammed Al Naseeb
Sarah Mesfer Ali Al-Qouns
Shumukh Mohammed Al-Tihami

SUPERVISOR

Dr. Yahya Ali

SERVES

Salon customers and
salon owners in Najran

15

Female Campus
Second Semester

11

Mawaed

قوائد

Saudi dish recognition app using deep learning

A mobile app that identifies traditional Saudi dishes from a phone camera photo and shows information about them for tourists and locals.

Saudi cuisine is part of the country's cultural identity, yet credible information about its dishes, history and preparation is scarce, especially for tourists. No comprehensive image collection of Saudi dishes was available for training a recognition model.

The team built Mawaed, a Flutter app that recognizes 13 dishes from the Culinary Arts Authority's approved list and describes each, while administrators manage the data. About 3,000 collected images grew to about 4,624 after cleaning and augmentation, and the team trained MobileNet, ResNet50, custom CNN and Vision Transformer models in Google Colab. MobileNet was chosen for its small size and runs in the app through TensorFlow Lite; the ImageNet-pretrained MobileNet reached 85% validation accuracy.

BUILT WITH

Flutter

TensorFlow

TensorFlow Lite

MobileNet

Python

Firebase

Google Colab

TEAM

Aryam Abdullah Qareeshah

Alyaa Yahya Al-Salem

Taif Yahya Al-Mansour

Sarah Ali Al-Hamammah

Raghad Ibrahim Al-Maqboul

SUPERVISOR

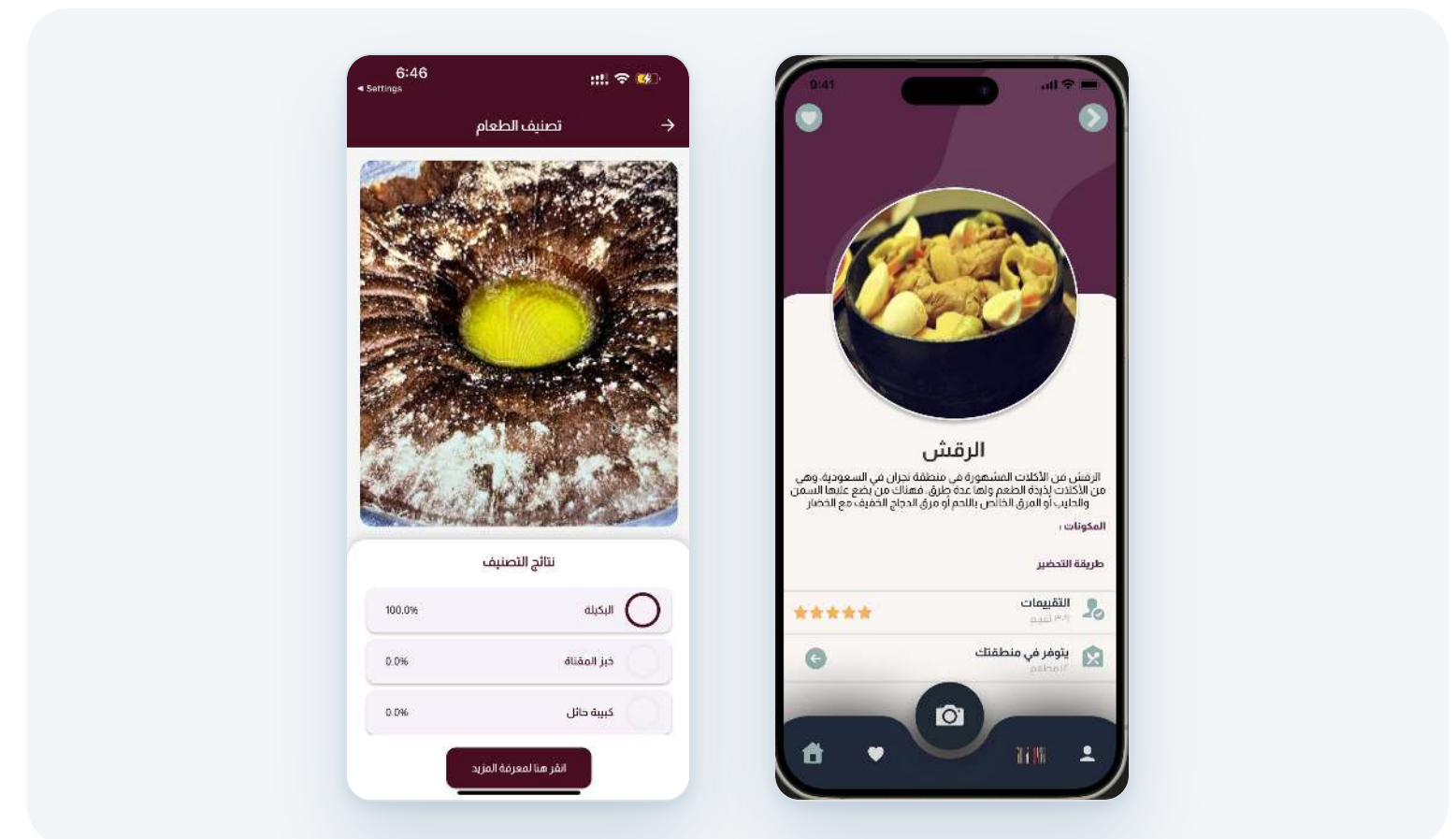
Dr. Saeed Alahmari

SERVES

Tourists and local users
interested in Saudi food

16

Female Campus
First Semester



- 1 Prediction screen showing dish classification results with percentages
- 2 Dish detail screen with description, ratings and camera button

KEY FEATURES

- ◆ Identify Saudi dishes from a camera photo
- ◆ Dish history, ingredients and preparation details
- ◆ Search dishes and save favorites
- ◆ Administrator management of dish data

12

Money Management and Budgeting Mobile App

MMBMA personal finance app for Android

An Android app that organizes personal income and expenses, using an AI model to read financial text messages and show budget statistics.

Salaries, store purchases and most other personal transactions now arrive as text messages, yet budgeting tools still make users type in each one, which is slow and error-prone.

The team built MMBMA for Android in Java and Kotlin, with a Room database on SQLite for local storage. A broadcast receiver captures incoming text messages and records which SIM received them, and Google's Gemini language model classifies messages and extracts transaction details. Users keep several wallets, enter transactions and view a budget gauge with weekly and monthly spending charts. The team tested the app on an emulator with five test cases; the report notes that AI analysis needs manual entry and that reversed transactions are not handled.

BUILT WITH

Kotlin

Java

Android Studio

Room

SQLite

Gemini API

TEAM

Nawaf Matar Al Saed
Muhammad Ahmed Al Shahi

Muhammad Hadi Al Qahtani
Abdullah Mubarak Al Harithi

SUPERVISOR

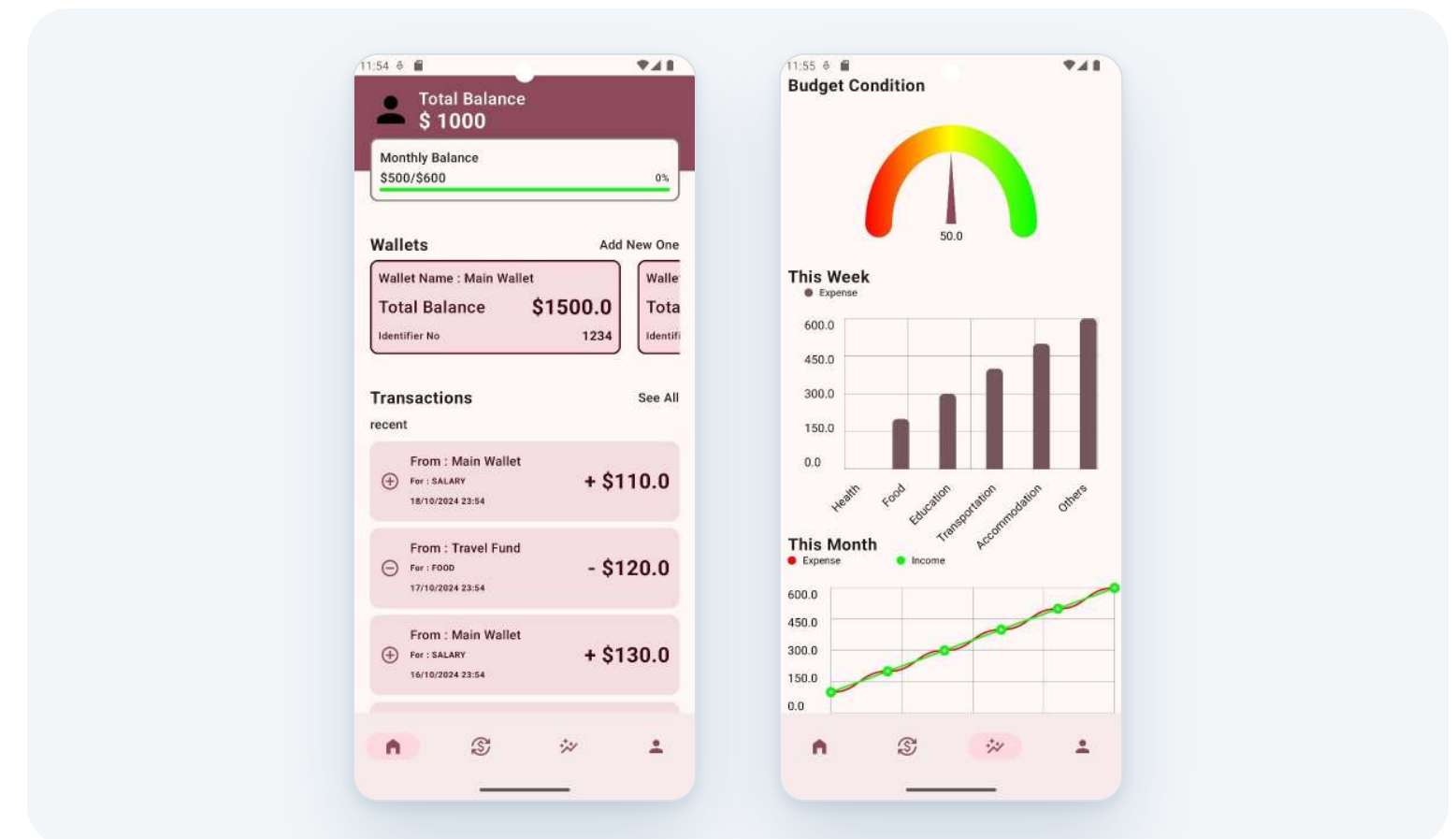
Dr. Hani Alshahrani

SERVES

Individuals managing personal
finances in Saudi Arabia

17

Male Campus
First Semester



- 1 Home screen with total balance, wallets and recent transactions
- 2 Statistics screen with budget gauge and weekly and monthly charts

KEY FEATURES

- ◆ Financial SMS capture with dual-SIM support
- ◆ AI classification of transaction messages
- ◆ Multiple wallets with recent transactions
- ◆ Budget gauge and spending charts

13

MY NUHealth Care

Appointment booking for Najran University Hospital

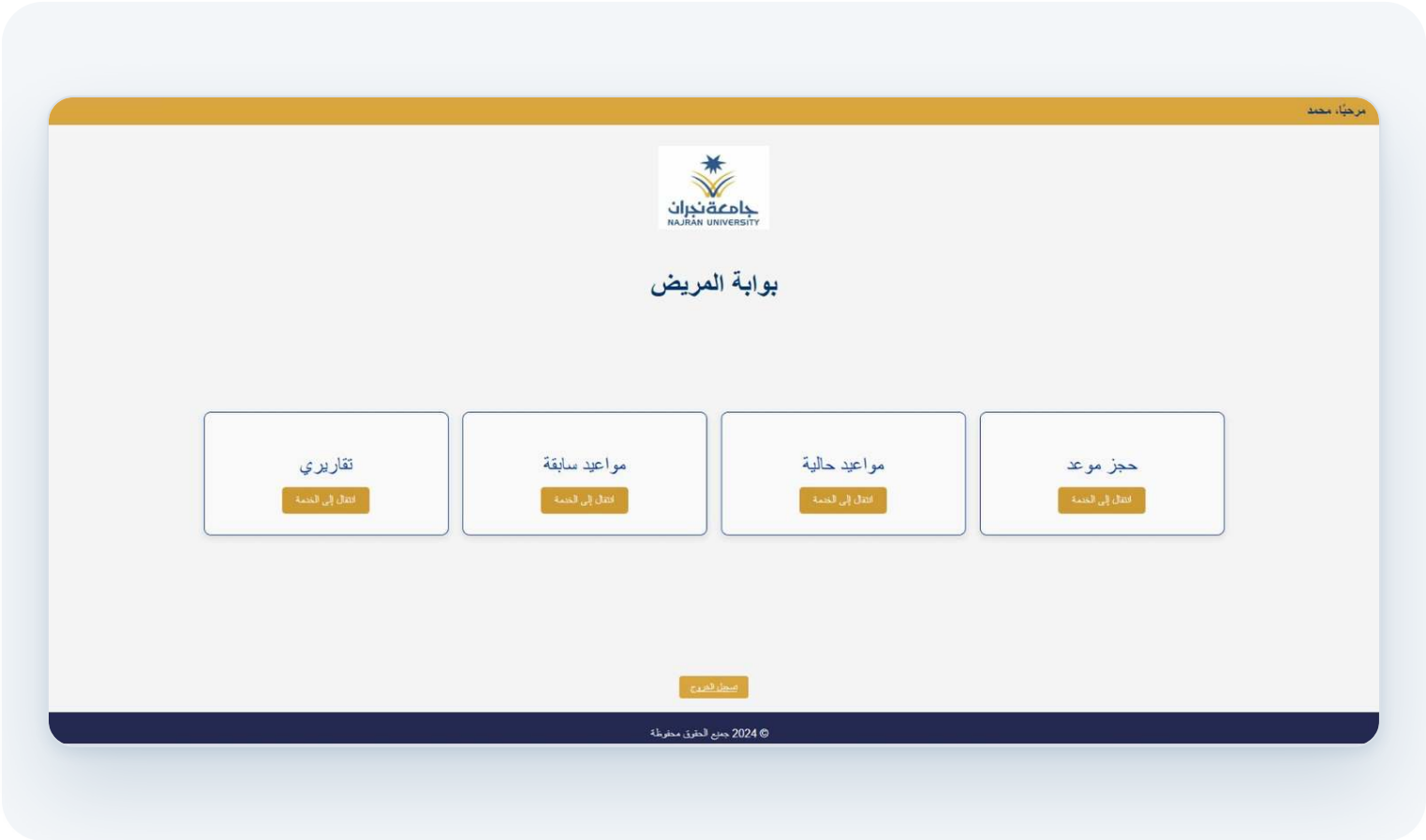
A web system where patients book clinic appointments at Najran University Hospital and doctors manage their schedules.

Najran University Hospital books clinic appointments manually. The team describes slow processing, a risk of errors, overcrowded clinics and patients waiting in long queues, while booking online or by phone remains difficult. The hospital also lacked modern technology for coordinating patients and clinics.

The team designed and built MY NUHealth Care, a web appointment booking system with separate Arabic-language portals for patients, doctors and administrators. Patients choose a clinic and doctor, book an appointment, review current and previous appointments, and open reports. Doctors manage their schedules and appointment times. Administrators manage clinics, doctors, patient records and staff data. The team developed it with HTML, CSS, JavaScript, PHP and MySQL on a local XAMPP server. The report presents a questionnaire of people who visit the university hospital, and login tests using white-box and black-box methods.

BUILT WITH

- PHP
- MySQL
- HTML
- CSS
- JavaScript
- XAMPP
- Visual Studio Code



Patient portal with booking, current appointments, previous appointments and reports

KEY FEATURES

- Online clinic and doctor appointment booking
- Current and previous appointment views for patients
- Doctor schedule and appointment management
- Administrator management of clinics, doctors and records

TEAM

Hanadi Ali Talib Balobaid
Amal Khalid Al Atwah

Ashwaq Abdullah Harbush
Reem Doshi Mahzari

SUPERVISOR

Dr. Naif Almudawi

SERVES

Najran University Hospital
patients, doctors and clinic staff

18

Female Campus
First Semester

14

National ID Cards Reporting App

Lost and found national ID card reporting

A Flutter mobile app where Saudi citizens report lost or found national ID cards and are matched by ID number and face.

In Saudi Arabia a citizen can report a lost national ID card through Absher, but the team's report states that there is no official digital way to report a found card. Finders turn to social media groups, where anyone can claim the card. The team argued that this rarely returns cards to their owners.

The team built the National ID Cards Reporting App, a Flutter mobile app with a Firebase back end. A user who lost a card submits an ID number and a face image, and a user who found one photographs the card, from which Google ML Kit reads the ID number on the device. The app first matches ID numbers, then compares faces through the Face++ API, and notifies both users of a probable match so they can chat. The report shows a demo match with 97.28% confidence.

BUILT WITH

Flutter

Dart

Firebase

Google ML Kit

Face++

Android Studio

TEAM

Rajwa Yahya Khabrani

Sarah Salem

Aminah Nasser Mohammad Al-Yami

Rana Nasser Al Magbool

Taghreed Ali Saad Asiri

Ahad Abdullah Al-Yami

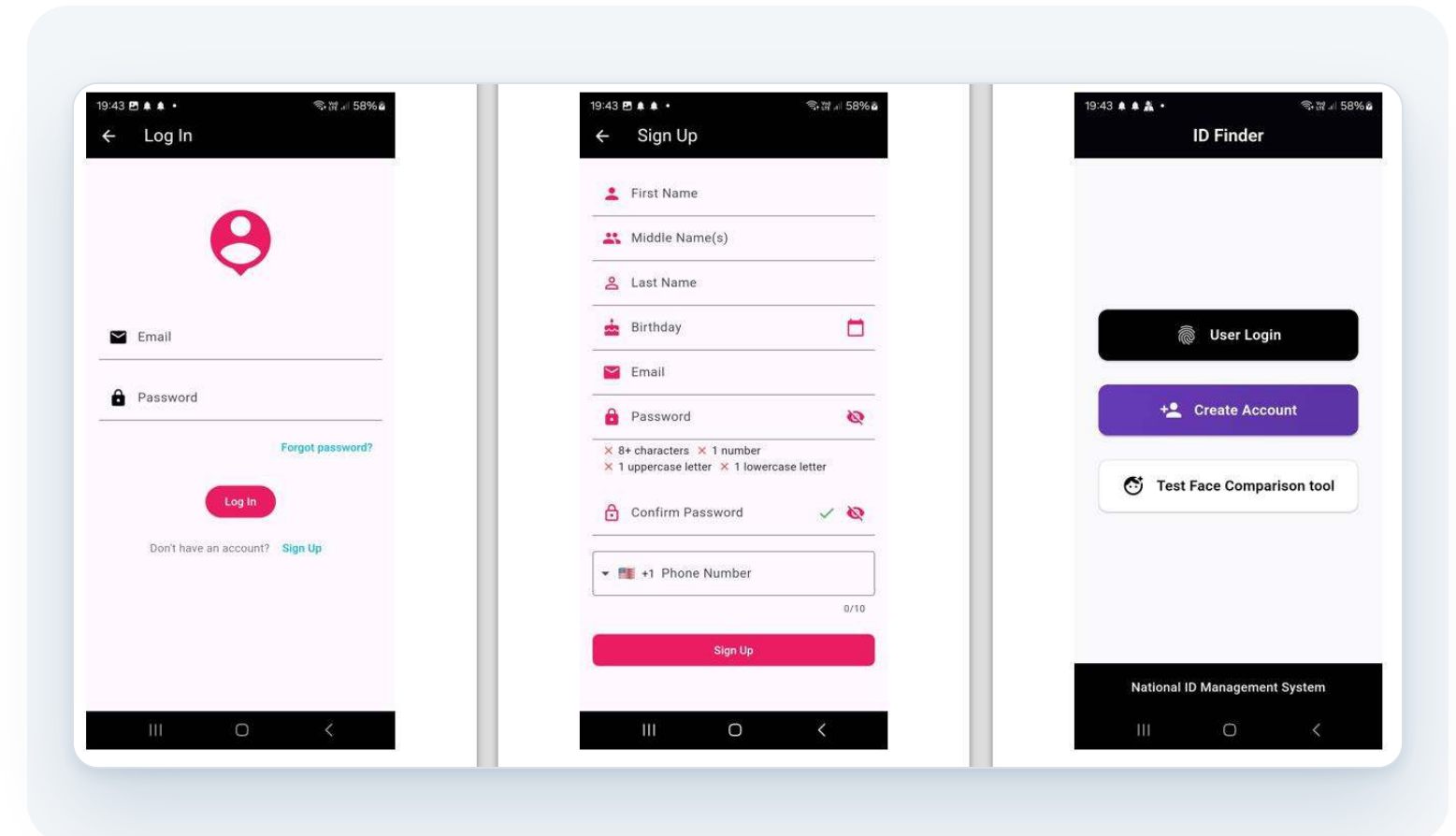
SUPERVISOR

Dr. Mohammed Alshehri

SERVES

Saudi citizens who
lose or find ID cards

19

Female Campus
First Semester

Login, sign-up and home screens of the mobile app

KEY FEATURES

- ◆ Lost and found ID card reports
- ◆ On-device OCR reads the ID number
- ◆ Two-step matching by ID number and face
- ◆ Match notifications and in-app chat

15

News Classification Using Machine Learning (ML)

A machine-learning classifier that assigns English and Arabic news texts to topics, for readers looking for news they care about.

With so many news articles online, readers find it hard to locate stories on topics that interest them. The team's problem statement says current news providers classify and customize news poorly, and the project set out to assign articles to topics automatically in two languages.

The team built a supervised text classifier in Python. English articles come from a BBC dataset of 2,225 documents in five topics, and Arabic headlines come from the ANAD news dataset, 57,788 titles in seven categories. After preprocessing, Bag-of-Words and TF-IDF features were used to train SVM, naive Bayes, random forest and logistic regression models. On the team's 20% test split, SVM scored best, with 97% accuracy for English and 91% for Arabic. Separate tkinter windows let a user type a text and see its predicted topic.

BUILT WITH

Python

scikit-learn

NLTK

pandas

tkinter

Anaconda

TEAM

Deema Mohammed Alghamdi
Najd Mahdi Al-Sari
Walaa Mohammed Alzhrani

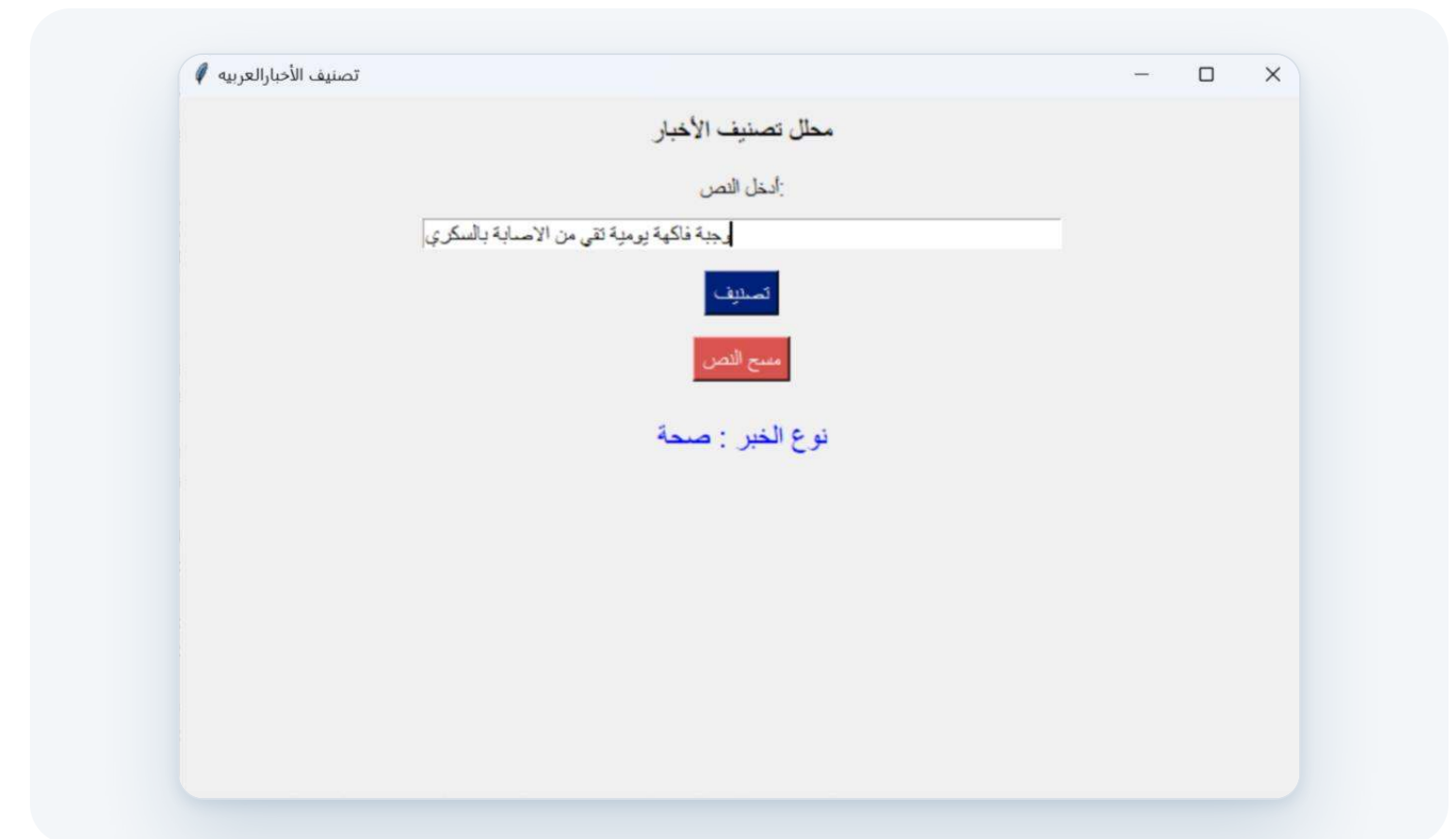
Hamdah Aziz Al Farhan
Mashael Hassan Almalki
Sahar Abdullah Al-Wadai

SUPERVISOR

Dr. Aisha Mashraqi

SERVES

Readers looking for news by topic



Arabic news classifier window showing a predicted topic

KEY FEATURES

- ◆ Topic classification of English and Arabic news
- ◆ Comparison of SVM, naive Bayes and random forest
- ◆ Text preprocessing with TF-IDF features
- ◆ Desktop window that predicts a typed text's topic

20

Female Campus
First Semester

16

NU.MAHARAH

Professional certifications platform

A web platform where Najran University students prepare for professional certifications and upload them for review toward course exemptions.

Students at Najran University find it hard to choose and prepare for professional certifications because learning resources are fragmented and outdated. They also often do not know where to submit an external certification for a course exemption. The project aimed to give them one place to prepare and to submit.

The team built NU.MAHARAH, a web platform for three kinds of users. Trainees register for courses, track their progress and upload external certifications for review. Trainers upload and manage courses and view statistics. Administrators manage trainers and trainees and approve requests. The pages use HTML and CSS, and the back end runs on PHP with Laravel and a MySQL database. The platform was designed to share the Edugate login and update academic records after an approval. The report concludes that the platform provides a centralized e-learning environment for certification preparation and that scalability needs more testing.

BUILT WITH

HTML

CSS

PHP

Laravel

MySQL

XAMPP

Navicat

16

Education & Learning

التعليم والتعلم

KEY FEATURES

- ◆ Trainees upload certifications for approval
- ◆ Trainers publish and manage courses
- ◆ Administrator approvals and user management
- ◆ Course progress tracking and statistics

TEAM

Muhannad Mahmoud
Manea Alqahtani

Muhammad Belharith
Qassem Alshereef

Fahad Alasheer

SUPERVISOR

Dr. Yousef Asiri

SERVES

Najran University students,
trainers and administrators

21

Male Campus
First Semester

17

Predictive Modeling of Tyrosine Kinase Activity

Machine-learning classifier for drug-candidate activity

A Python pipeline that classifies compounds as active, intermediate or inactive against tyrosine kinases.

Tyrosine kinases help regulate cell growth, differentiation and survival, and uncontrolled kinase activity is a hallmark of many cancers. The team used curated ChEMBL compounds, each with its SMILES structure, IC50 potency, physicochemical properties and an activity class.

The team built a classification pipeline in Python: exploratory analysis and label encoding, a 70/30 split, standardized features and seven principal components from PCA. SVM with four kernels, k-nearest neighbors, logistic regression, a decision tree and a random forest were compared by accuracy and classification reports and checked with several cross-validation schemes. The report finds that logistic regression and the linear-kernel SVM perform best and stay consistent across cross-validation.

BUILT WITH

Python

pandas

NumPy

scikit-learn

Matplotlib

Seaborn

Jupyter

TEAM

Mohammed Hamad Almas
Mohammed Hussain Alyami
Ahmed Abdullah Al Shabami

Ali Mohammed Alyami
Nasser Mohammed Alyami

SUPERVISOR

Dr. Sultan Alamer

SERVES

Medicinal chemistry and cancer
drug-discovery researchers

22

Male Campus
First Semester

17

Health & Wellbeing

الصحة والرفاه

KEY FEATURES

- ◆ Active, intermediate or inactive compound classification
- ◆ PCA reduction to seven components
- ◆ Comparison of five classifier families
- ◆ Three cross-validation schemes to check robustness

18

Safe Prescription Website (Ma'een)

A web platform where doctors, pharmacists and patients check drug names and interactions to reduce medication errors.

Medication errors remain a problem whether prescriptions are handwritten or electronic. Look-alike drug names, hard-to-read handwriting, wrong doses and missed drug interactions can lead to mis-dispensing, and patients often find it hard to get prompt advice about their medicines.

The team built Ma'een, a Laravel and PHP web system with a MySQL database and Arabic and English interfaces. Doctors, pharmacists, patients and administrators register and use role-specific pages. Doctors create prescriptions with automatic correction of drug names, pharmacists search drugs and analyze interactions, and a chat feature supports consultations between the three groups. The site also offers barcode-based medication checks. A survey of 195 respondents supported the need for such a platform. The team unit-tested registration and login for doctors, pharmacists, patients and administrators before deployment.

BUILT WITH

Laravel

PHP

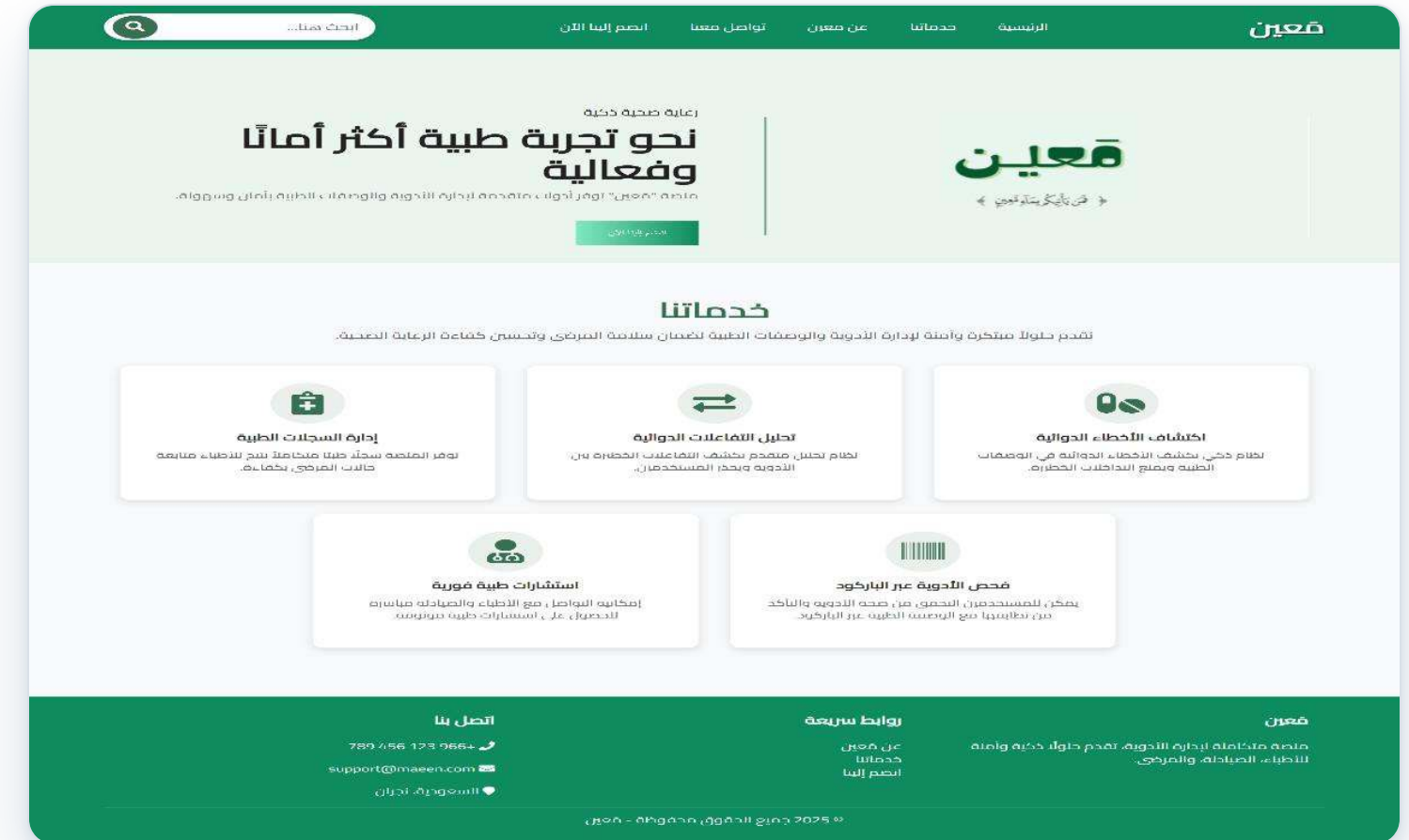
MySQL

JavaScript

HTML

CSS

Laragon



Arabic home page of the Ma'een website listing its services

KEY FEATURES

- ◆ Automatic correction of drug names
- ◆ Drug interaction checks
- ◆ Chat consultations between doctors, pharmacists and patients
- ◆ Role-based pages for four user types

TEAM

Ebtihal Ali Alajabi

Hawazin Mohammed Alajabi

Huda Masoud Al-Saad

Sarah Safar Al-Yami

Maraheb Ahmad Aljabari

Taqwa Mohammed Al-Yami

SUPERVISOR

Dr. Sultan Alyami

SERVES

Doctors, pharmacists and patients

23

Female Campus
Second Semester

19

SciDashboard

Interactive dashboard for scientific research

A web dashboard that organizes Najran University research data and answers questions about it through an AI chatbot.

When Najran University research data is retrieved from the Web of Science website, it does not show the college and department of each researcher, which makes classifying research output difficult. Research data is also spread across several sources in inconsistent formats, and there are few tools for analyzing it.

The team built SciDashboard, a web platform with accounts for researchers, general users and administrators. The interfaces use HTML, JavaScript and PHP, with research and researcher records stored in MySQL. The site offers research search, a statistics dashboard of annual publications and research areas, and personal pages where users and researchers track their activity. The team also built Power BI dashboards with filters by field and document type, and an AI chatbot on OpenAI technologies connected to the Web of Science data. The final report states that the Power BI dashboards are not yet connected to the website.

BUILT WITH

PHP

MySQL

HTML

JavaScript

Power BI

OpenAI

Laragon

GitHub

TEAM

Maha Abdullah Lajam
Sahar Ahmad Madkhli

Norah Musaaed Al-Harthy
Raidah Saleh Al-Yami

SUPERVISOR

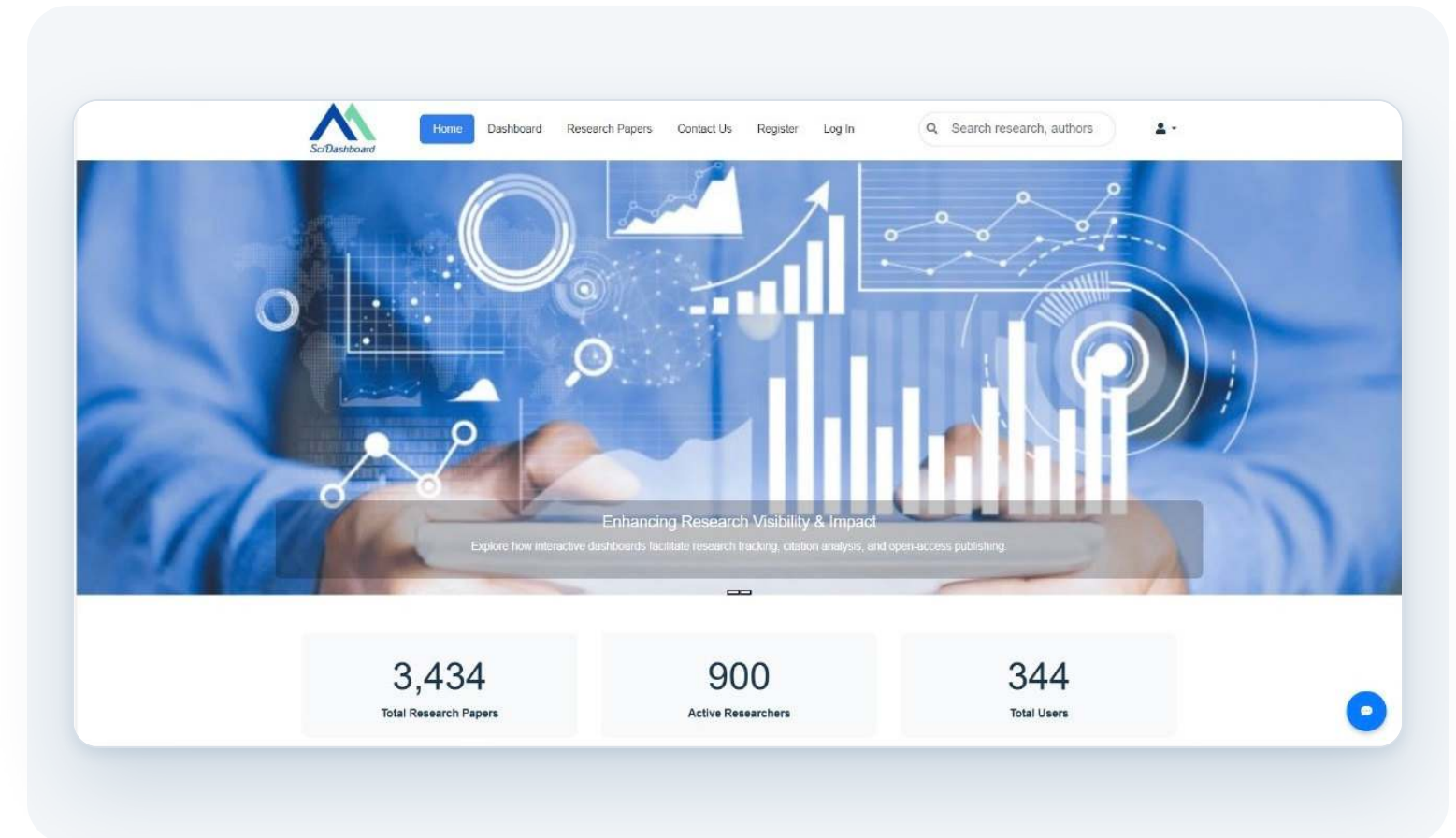
Dr. Adel Alsulaiman

SERVES

Najran University researchers
and general users

24

Female Campus
Second Semester



SciDashboard home page with research and user counters

KEY FEATURES

- ◆ Research search with a publication statistics dashboard
- ◆ Interactive Power BI charts with field filters
- ◆ Activity pages for users and researchers
- ◆ AI chatbot answering research questions

20

Simulator for CPU Scheduling Algorithms

Bilingual web tool for teaching operating systems

A web simulator in English and Arabic that lets operating systems students and instructors run and compare CPU scheduling algorithms.

CPU scheduling decides which process runs next on the processor, and operating systems students often find the algorithms hard to follow from theory alone. The team wanted a tool that shows how each algorithm builds its Gantt chart and compares the algorithms by waiting time and turnaround time.

The team built the simulator with HTML, CSS, JavaScript and PHP, a MySQL database on a local XAMPP server and Firebase for sign-up and login. Users enter process data, choose First-Come First-Served, Shortest Job First, priority or Round Robin scheduling, and step through an animated Gantt chart with a table of waiting and turnaround times. A comparison page shows two algorithms side by side, and users can save simulations. The team reports that the simulator produces the expected results.

BUILT WITH

HTML

CSS

JavaScript

PHP

MySQL

Firebase

XAMPP

SELECT COMPARISON ALGORITHM

Algorithm:

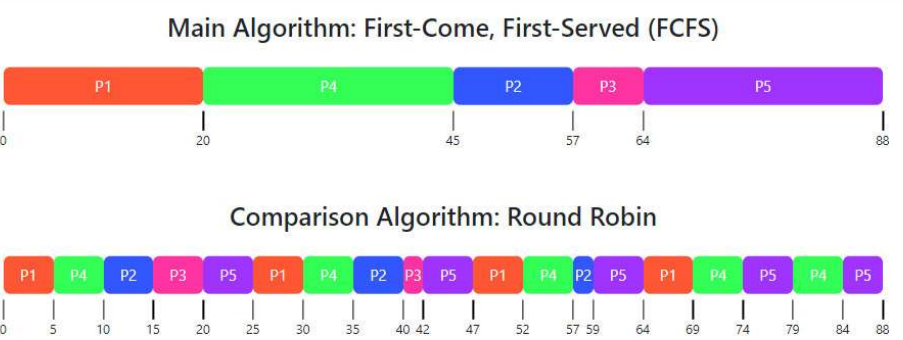
Round Robin

Run Comparison

Comparison Results

Process ID	Waiting Time	Turnaround Time
1	49	69
4	59	84
2	44	56
3	31	38
5	59	83

GANTT CHARTS AND METRICS COMPARISON



Metrics Comparison

Metric	First-Come, First-Served (FCFS)	Round Robin
Average Waiting Time	34.80	48.40
Average Turnaround Time	52.40	66.00

Comparison page: FCFS and Round Robin Gantt charts with average times

KEY FEATURES

- ◆ FCFS, SJF, priority and Round Robin scheduling
- ◆ Animated Gantt chart with step controls
- ◆ Side-by-side comparison of waiting and turnaround times
- ◆ Saved simulations and English/Arabic interface

TEAM

Wajd Tariq Alghamdi
Rawan Ali Balhareth

Rehad Abdullah Aljohani
Maha Saleh Aldghari

SUPERVISOR

Dr. Muhammad Akram Alam

SERVES

Operating systems
instructors and students

25

Female Campus
First Semester

21

Smart Transportation on Najran University Campus (STUN)

A web application that manages campus buses through admin, driver and student interfaces for Najran University students and staff.

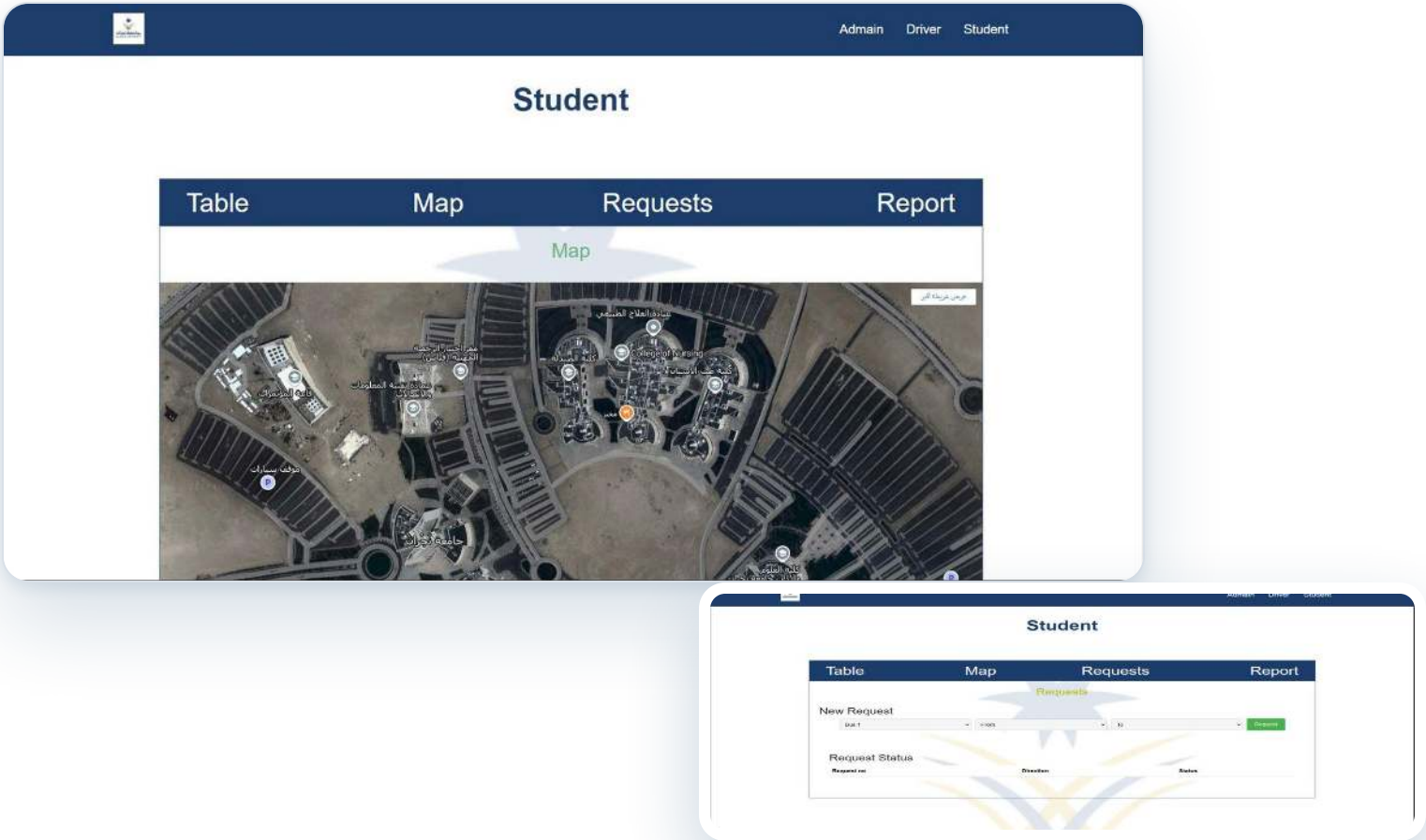
Najran University’s campus covers a very large area, so students and employees must travel long distances between buildings and colleges. The team’s documents state that campus transportation lacks a proper management system. In a questionnaire for students, faculty and staff, most respondents reported problems with the current transportation, including its unavailability, the time needed to cross the campus and difficult scheduling.

The team built STUN, a web application with three interfaces. Administrators manage drivers, vehicles, a blacklist and students. Drivers view the bus schedule, a campus map and request status, and can submit reports. Students register, view schedules and the map, and submit transport requests by choosing a bus, a starting point and a destination. The team developed it in Visual Studio and describes it as an initial-stage project, with server hosting and links to university databases left as future work.

BUILT WITH

Visual Studio

SQL



- 1 Student page of the STUN web app showing the campus map
- 2 Student page for submitting a bus request

KEY FEATURES

- ◆ Admin management of drivers, vehicles and students
- ◆ Bus schedule tables for drivers and students
- ◆ Campus map for students
- ◆ Student transport requests and driver reports

TEAM

Abdullah Mansour Al-Haider
Nawaf Al-Qarni
Turki Makram Al-Makrami

Hussein Mouhammad Nasser Al-Karim
Ali Hassan Bin Mouhammad Al-Yami

SUPERVISOR

Dr. Naif Almudawi

SERVES

Najran University students and staff

26

Male Campus
First Semester

22

Stay Fresh

Laundry ordering, pickup and delivery platform

A Flutter app that lets laundry customers in Najran place and track orders, with pickup and delivery handled by drivers.

Traditional laundry and dry cleaning services require customers to visit a shop to drop off and collect their clothes, keep limited hours, and often offer no order tracking or digital options. The team surveyed 125 people and reviewed existing laundry apps such as Clean Line and DARI before defining a service for residents of Najran.

The team built Stay Fresh with Flutter and Firebase Cloud Firestore. Customers register, choose laundry services, place orders paid in cash on delivery, track order status and message the staff. Admins and laundry workers approve orders and assign them to drivers, who pick up and deliver the clothes, while administrators manage services, users and staff. The team tested five scenarios from placing an order to delivery and ran user acceptance testing, and the report concludes that the system is stable.

BUILT WITH

Flutter

Dart

Firebase Cloud Firestore

GetX

TEAM

Wafgah Ali Al-Swidan
Shahad Abdullah

Waad Ali Al-Eshaq
Lujain Al-Shehri

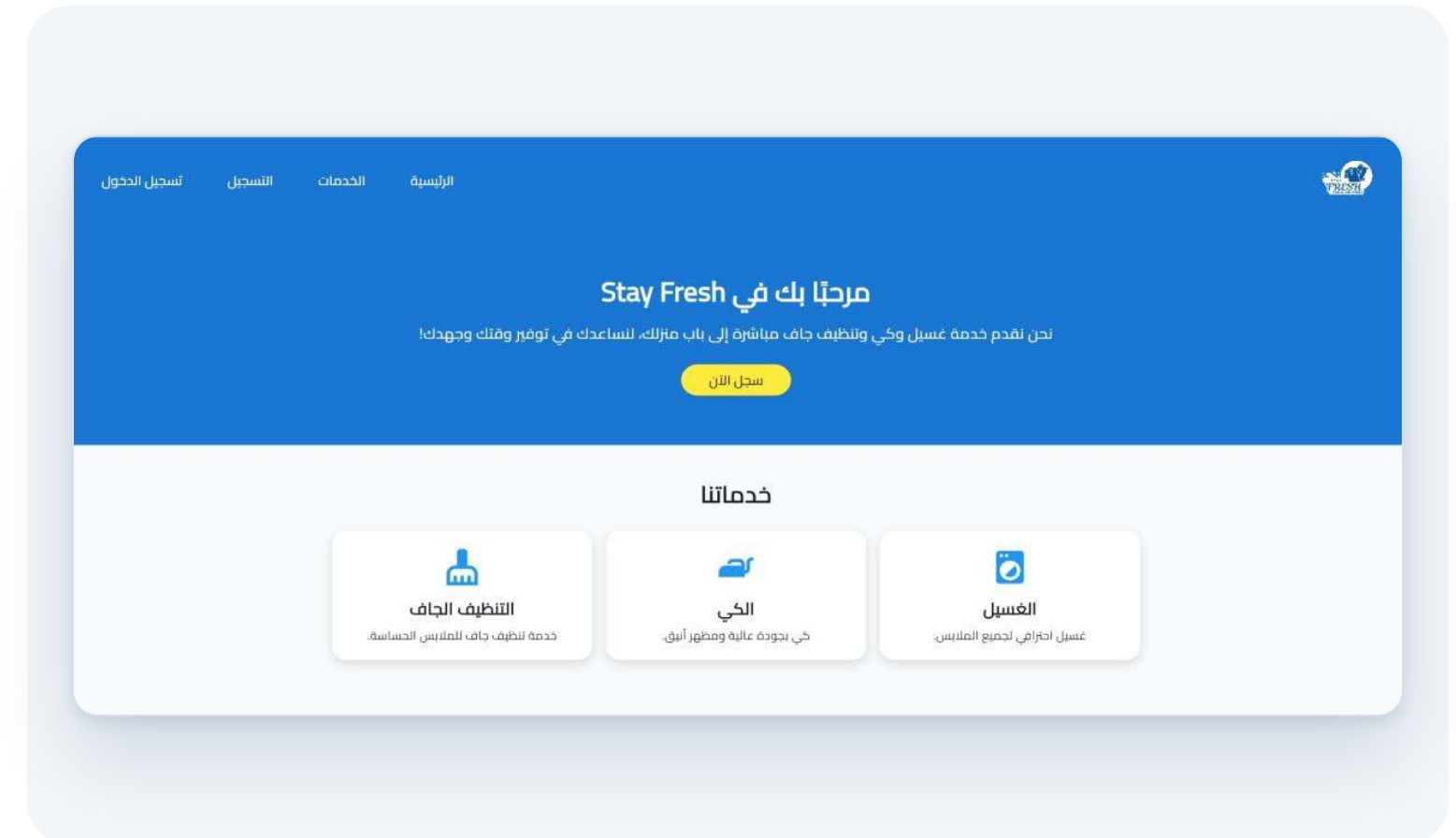
SERVES

Laundry customers, staff
and drivers in Najran

Arabic home page listing the washing, ironing and dry cleaning services

KEY FEATURES

- ◆ Customer ordering with live order status tracking
- ◆ Driver assignment for pickup and delivery
- ◆ Messaging between customers and staff
- ◆ Admin management of services, users and staff



23

Student-Faculty Appointment Scheduler System

Office hours booking website for Najran University

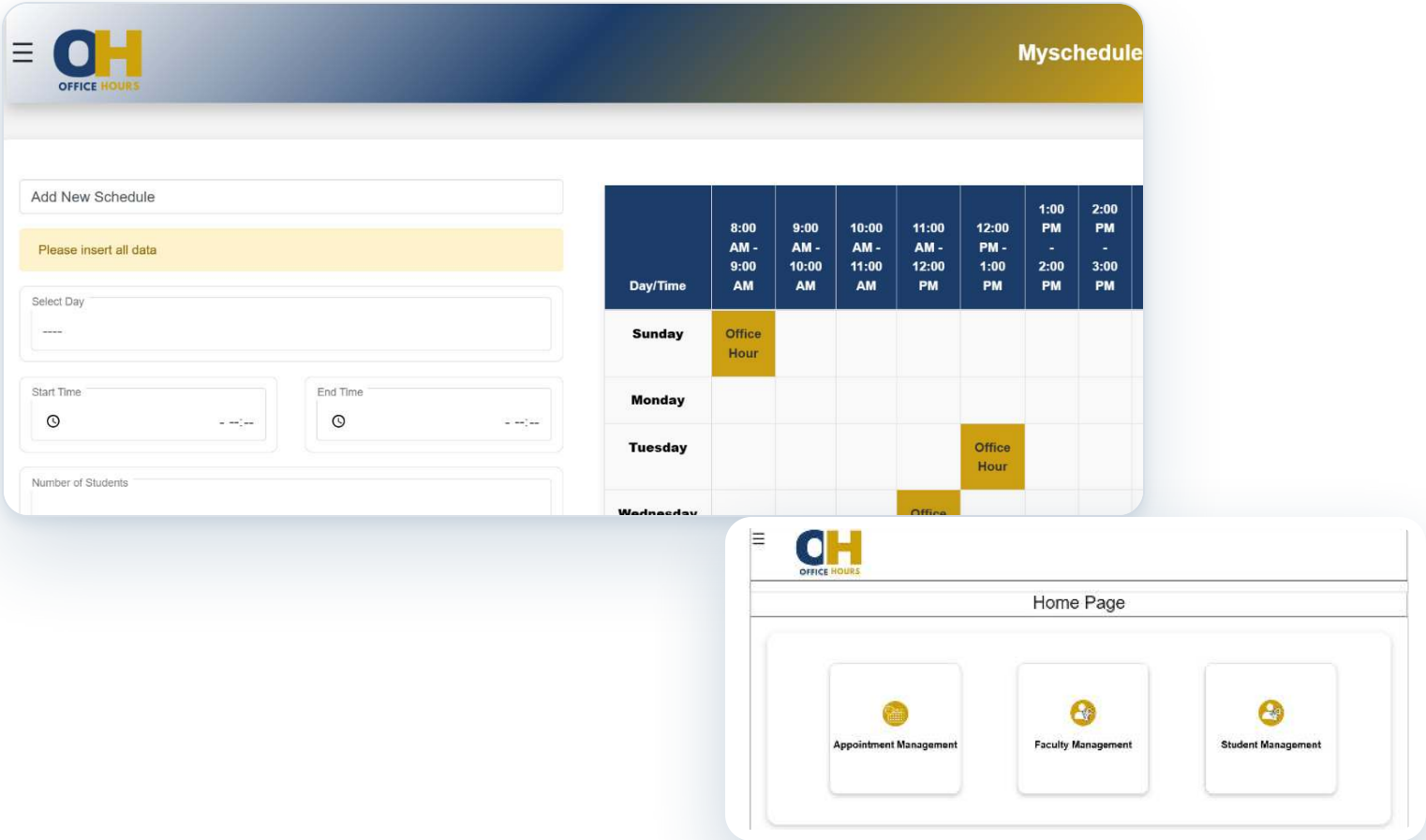
A web application where Najran University students book faculty office hours and academic staff manage their schedules and reservations.

The team’s report states that Najran University students find it difficult to schedule appointments with faculty members. It proposed a dedicated office-hours booking system that would let students choose an available time at any hour and reduce the paperwork and administrative handling that appointment bookings need.

The team followed an Agile process and built a PHP and MySQL web application branded Office Hours, with separate roles for students, academic staff and administrators. Staff publish weekly office-hour slots with a set duration and number of students, and students pick a day from a calendar to book one. Sign-up and login include a verification code step, and administrators create and manage staff and student accounts. The report documents the interfaces, database design and test cases for the main functions.

BUILT WITH

- PHP
- MySQL
- phpMyAdmin
- JavaScript
- HTML/CSS
- Bootstrap



- 1 Academic staff weekly schedule page of the Office Hours web app
- 2 Administrator home page with appointment, faculty and student management

KEY FEATURES

- Calendar booking of faculty office-hour slots
- Weekly schedule management for academic staff
- Verification code step at sign-up and login
- Admin management of staff, students and appointments

TEAM

- Ebtsam Mohammed Al Almay
Jana Mohammed Hussain Al-Atwah
Wardah Bhkeet Rehan Almhari
- Rana Ahmed Alabbas
Rajwa Hamed Mohammed Al Sheban

SUPERVISOR

Dr. Bakri Alawaji

SERVES

Najran University students
and academic staff

24

Traffic Eye

Drone system that detects vehicle accidents

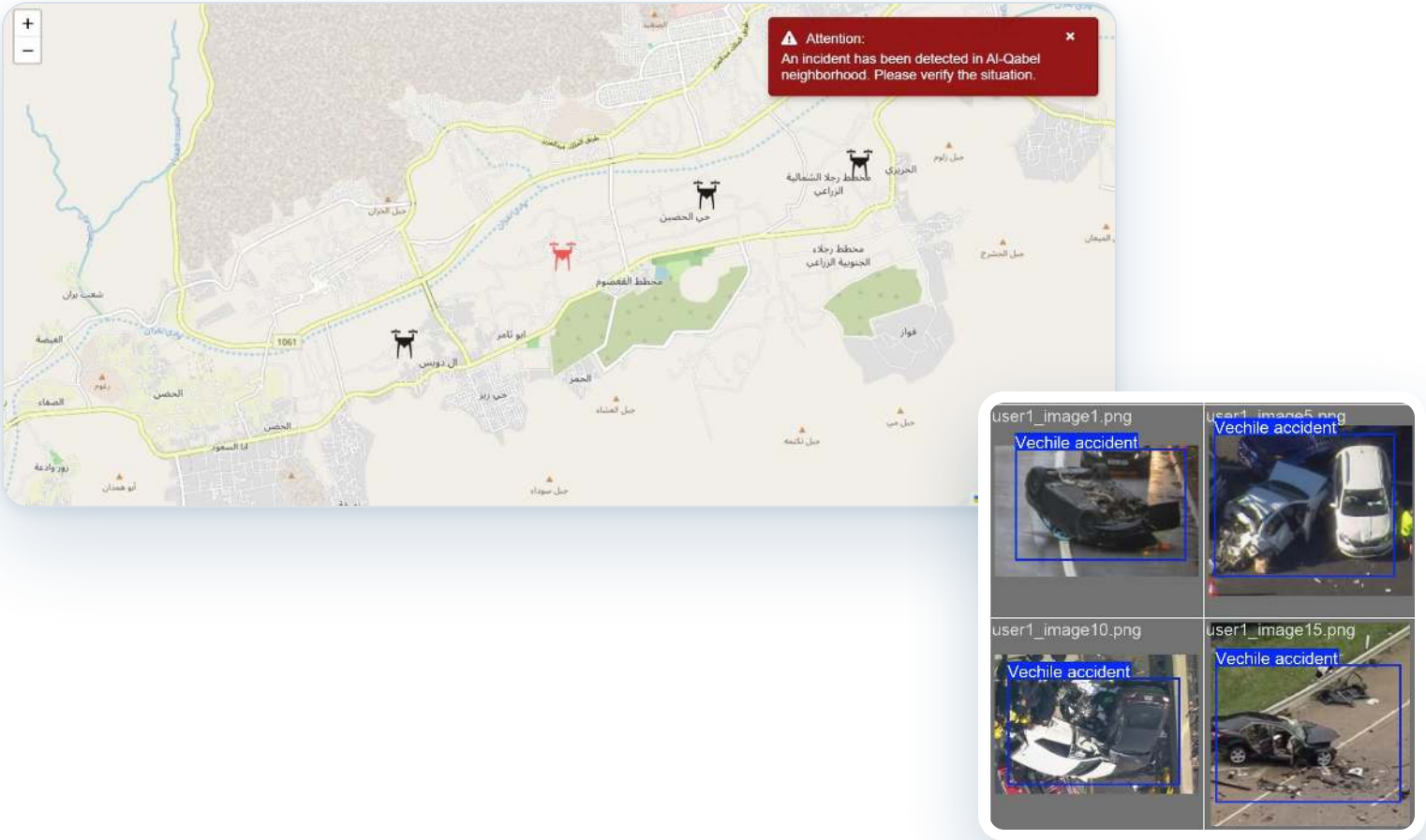
A drone-based prototype that detects traffic accidents in camera images and sends photos and location to an emergency center website.

Traffic accidents claim many lives, and the time between a crash and the arrival of help matters. Reporting usually depends on a witness, who may delay the call or may be absent when an accident happens in a remote area. Traditional reports also tell authorities little about the damage. The project aimed to speed up response by removing the need for a human reporter.

The team designed and prototyped Traffic Eye around a DJI Tello drone. They annotated accident and non-accident images with Labellmg and trained a YOLOv8 model in Python to recognize vehicle accidents. In the design, the drone photographs a detected accident and sends the images and location to the Traffic Eye website, built with Laravel, where emergency staff see alerts, a drone map and accident reports. The report states that the trained model recognized many accident types in varied scenarios.

BUILT WITH

- YOLOv8
- Python
- OpenCV
- Labellmg
- Laravel
- DJI Tello



- 1 Website map showing drones and an accident alert
- 2 YOLOv8 detection output labeling vehicle accidents

KEY FEATURES

- ◆ YOLOv8 detection of vehicle accidents
- ◆ Drone photos and location sent automatically
- ◆ Emergency center map with accident alerts
- ◆ Accident reports for responders

TEAM

Atheer Abdulhakim Aldwais
Fatima Saleh Al-Hammam
Asma Mohammed Alwadai

Sarah Fahad Al-Sulaiman
Arwa Ahmed Al-Salem

SUPERVISOR

Dr. Abdullah Khanfor

SERVES

Police, rescue and ambulance
teams, and drivers

29

Female Campus
First Semester

25

Trip Go

Tourist guide app for Abha

An Android tourist guide for Abha that lists attractions on a map, with favorites, feedback, notifications and a currency converter.

Tourists need reliable, organized information about the places they can visit, and visitors unfamiliar with local prices find it hard to budget. The project chose Abha, the capital of the Asir region, because of its natural beauty and historical sites, and set out to build a guide in Arabic and English for both visitors and residents.

The team built Trip Go, an Android app written in Flutter and Dart, with a Django REST Framework back end, a MySQL database and token authentication, hosted on PythonAnywhere. Users browse attractions with photos, prices and ratings, filter them by category, find them on an interactive map, search, save favorites and leave feedback. A converter turns other currencies into Saudi riyals, and administrators send notifications. The report concludes that the Flutter front end and the Django back end exchange data through REST services and that the listed features were developed.

BUILT WITH

Flutter

Dart

Django

Django REST Framework

MySQL

PythonAnywhere

GitHub Actions

TEAM

Bashyer Mohammed
Wejdan Hussain Al Saad

Somaya Mohammed
Afrah Abdullah

Mozon Yahya

SUPERVISOR

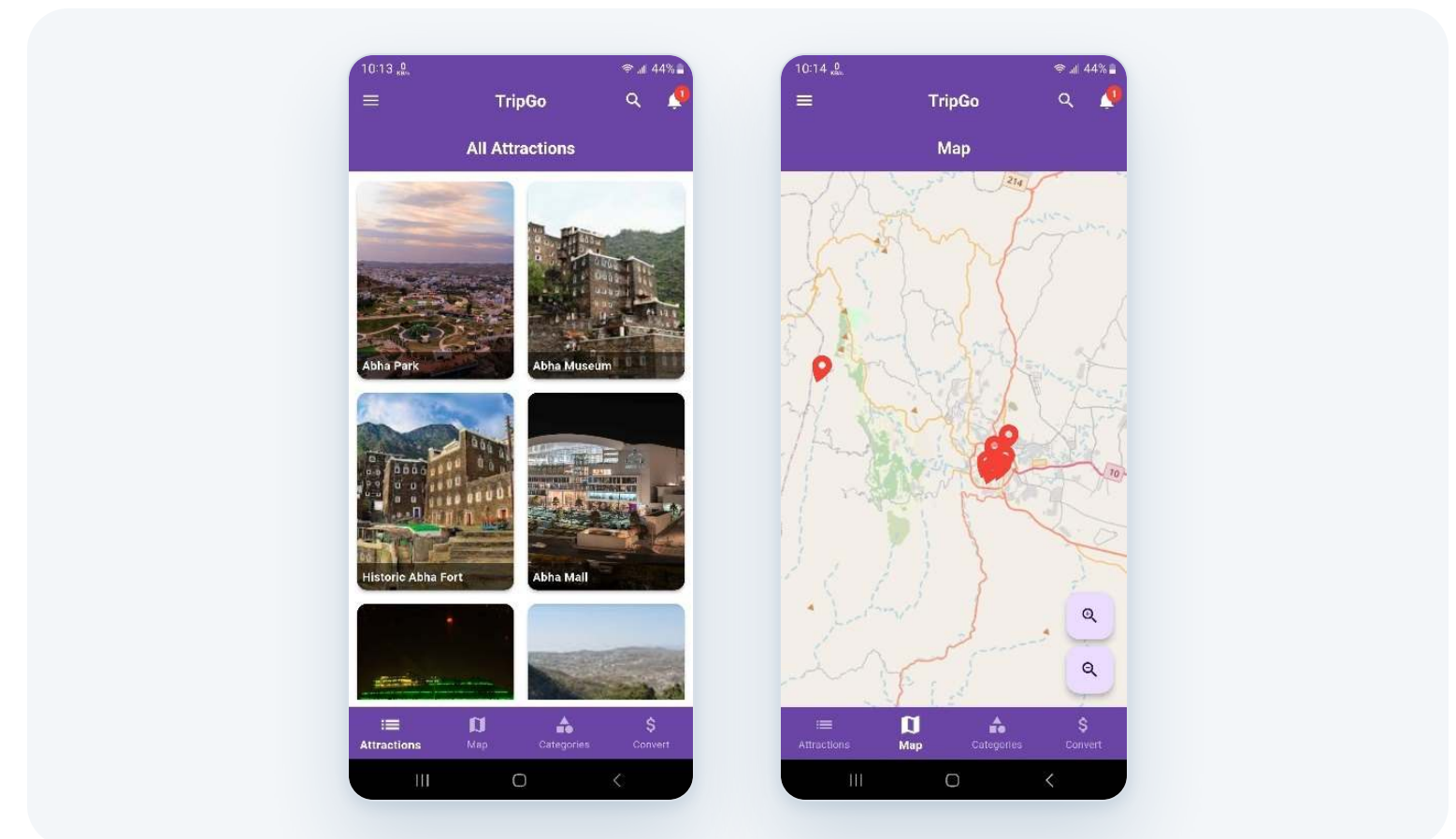
Dr. Saeed Abo-oleet

SERVES

Tourists and residents of Abha

30

Female Campus
Second Semester



- 1 All Attractions screen listing Abha sites with photos
- 2 Map screen with attraction markers around Abha

KEY FEATURES

- ◆ Attractions with photos, prices and ratings
- ◆ Interactive map and category filters
- ◆ Favorites, search and visitor feedback
- ◆ Currency converter and administrator notifications

Project supervisors

المشرفون على المشاريع

SUPERVISOR المشرف	PROJECTS المشاريع
Dr. Abdullah Khanfor	24
Dr. Abdulwahab Alazeb	02, 09
Dr. Adel Alsulaiman	19
Dr. Aisha Mashraqi	15
Dr. Bakri Alawaji	01, 23
Dr. Hamad Abosaq	03
Dr. Hanan Halawani	05

SUPERVISOR المشرف	PROJECTS المشاريع
Dr. Hani Alshahrani	12
Dr. Jarallah Alqahtani	04
Dr. Mohammed Alshehri	14
Dr. Mohammed Hamdi	07
Dr. Muhammad Akram Alam	20
Dr. Naif Almudawi	08, 13, 21
Dr. Saeed Abo-oleet	25

SUPERVISOR المشرف	PROJECTS المشاريع
Dr. Saeed Alahmari	11
Ms. Soad Mohammed	06
Dr. Sultan Alamer	17
Dr. Sultan Alyami	18
Dr. Yahya Ali	10
Dr. Yousef Asiri	16



تعليمنا يُحقق الرؤية

College of Computer Science and Information Systems
كلية علوم الحاسب ونظم المعلومات

portal.nu.edu.sa/en/web/computer-science-college/graduation-projects-unit

Prepared by the Graduation Projects Unit, College of Computer Science and Information Systems, Najran University.