

Graduation Projects

Academic Year

2023–2024

College of Computer Science
and Information Systems



مشاريع التخرج

العام الجامعي

1445–1446 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 1445–1446 AH (2023–2024).

The graduation project is the capstone of the bachelor’s programs in Computer Science and Information Systems. 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 1445-1446 هـ (2023-2024م).

يمثل مشروع التخرج الخبرة الختامية في برنامجي البكالوريوس في علوم الحاسب ونظم المعلومات؛ 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

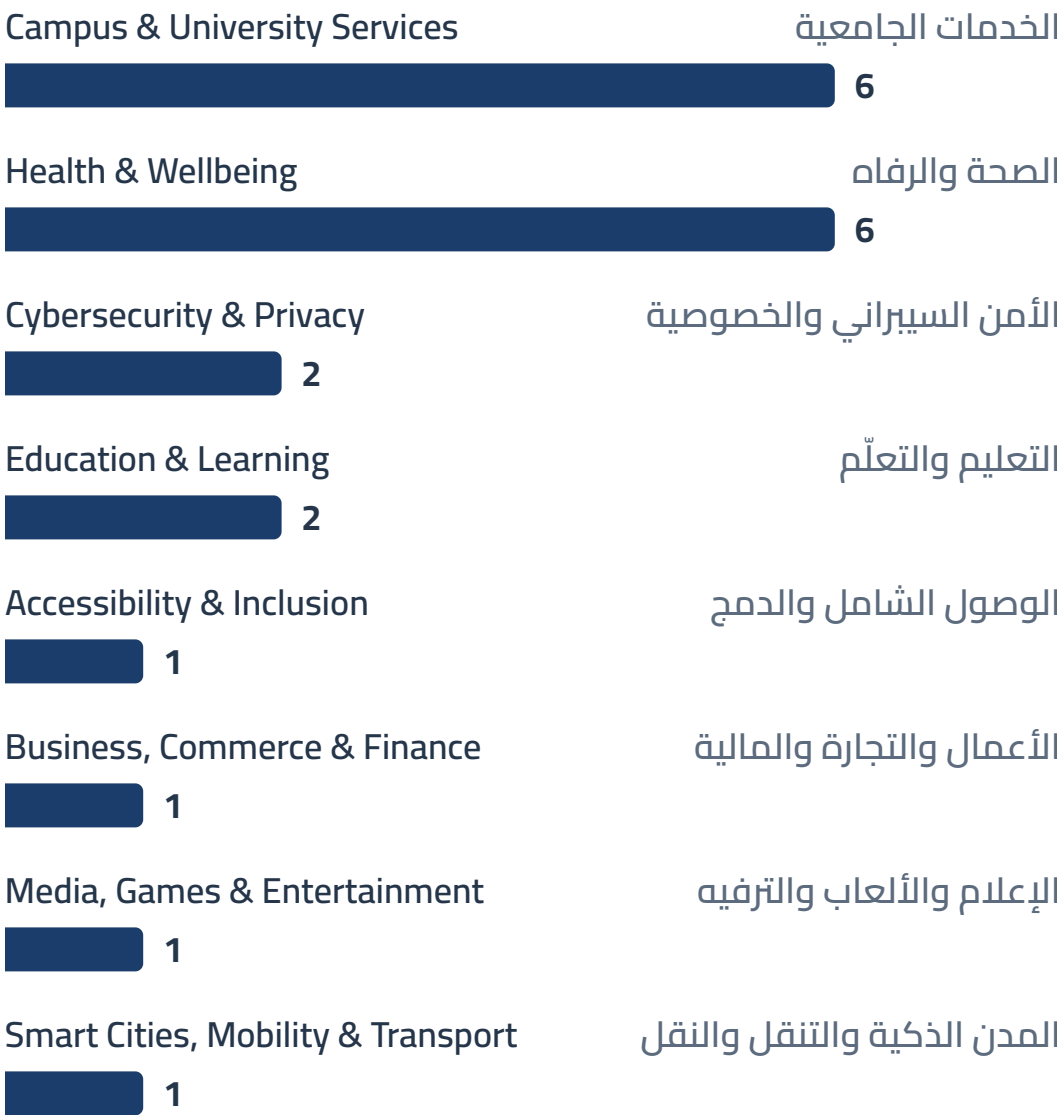
Computer Science	علوم الحاسب
Information Systems	نظم المعلومات
Network and Communications Engineering	هندسة الشبكات والاتصالات

The year at a glance

العام في سطور

Projects by domain

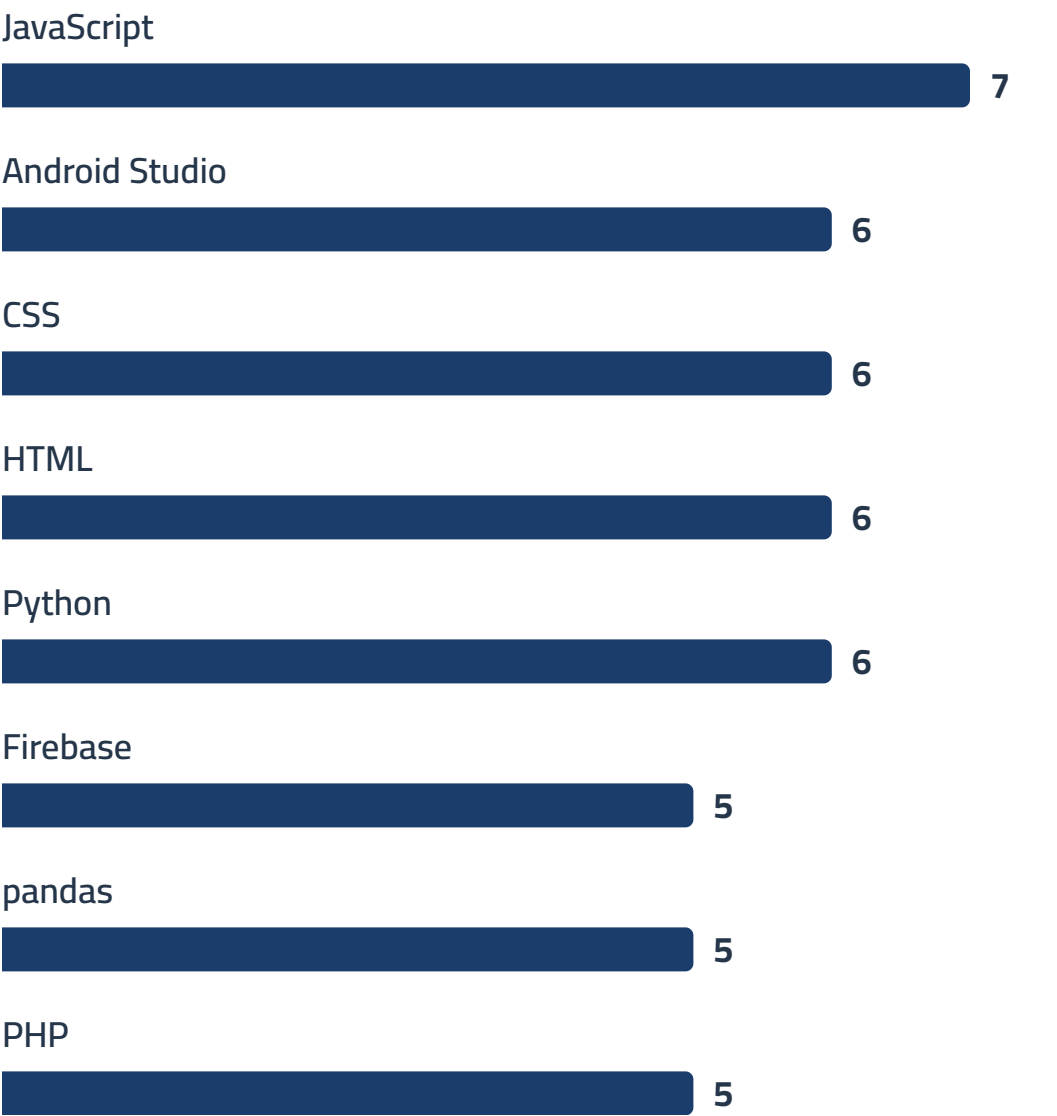
Number of projects in each domain



المشاريع حسب المجال

Most-used technologies

Number of projects for each technology used in 5 or more projects



التقنيات الأكثر استخدامًا

20

Projects

المشاريع

96

Students

الطلاب والطالبات

20

Supervisors

المشرفون

8

Application domains

مجالات التطبيق

Department and campus

Number of projects

القسم والشرط

DEPARTMENT	FEMALE	MALE	TOTAL
Computer Science علوم الحاسب	11	4	15
Information Systems نظم المعلومات	4	1	5
All projects جميع المشاريع	15	5	20

Computer Science		علوم الحاسب			
01	Aorta: Blood Donation Site	6	11	Smart Student	16
02	Appointment Reservation System	7	12	SQL Injection Detection Using Machine Learning	17
03	Aydi	8	13	Supervised Machine Learning Model for Cancer Classification	18
04	Electronic Gym & Fitness Trainer (EG&FT)	9	14	Tafshan	19
05	Emergency Ambulance Vehicle Prioritization System	10	15	The Alumni System	20
06	Exam Management System (EMS)	11	Information Systems نظم المعلومات		
07	Home Health Care Program (HHCP)	12	16	A Mobile Application for Managing a Stem Cell Bank (MAFMSCB)	22
08	HUDURK	13	17	Future Stock	23
09	Raseen	14	18	Istknan	24
10	SA_Keeper	15	19	Makkin for Field Training in Najran University	25
			20	Mobile Application for Alumni of CCSIS in Najran University	26

Computer Science

علوم الحاسب

15

Projects مشروعات

74

Students طالبًا وطالبة

Projects 01–15 · pages 6–20

المشاريع 01–15 · الصفحات 6–20

01

Aorta: Blood Donation Site

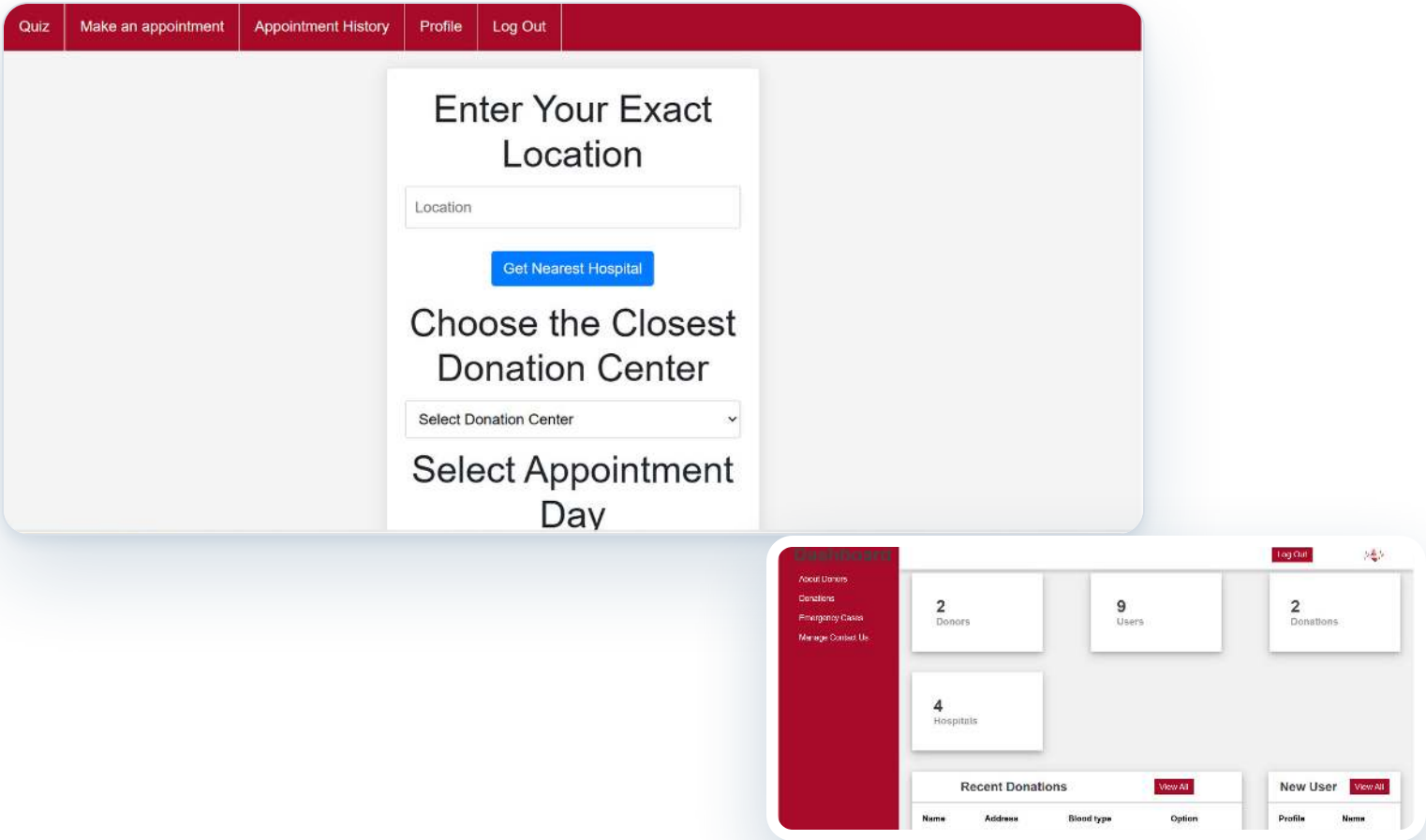
A website that helps donors in Najran check eligibility, find the nearest hospital, book appointments and receive emergency requests for blood.

Blood of every type is not always available in Najran city and its provinces, and donors often do not know when a critical case needs them or whether they qualify to give. The team collected 538 questionnaire responses on blood donation websites and reviewed existing services such as Wared and Wateen before designing a local alternative.

The team built Aorta as a website using HTML, CSS, JavaScript and PHP, with a MySQL database served through XAMPP. Donors register, take an eight-question eligibility quiz, enter their location to find the nearest hospital and book an appointment at a donation center. The site rejects a booking made within two months of a previous donation. An admin dashboard shows donor, user, donation and hospital counts and sends emergency messages by email to all users. The team ran 11 test cases, and the report marks every listed functional requirement as active.

BUILT WITH

- HTML
- CSS
- JavaScript
- PHP
- MySQL
- XAMPP
- phpMyAdmin



- 1 Appointment page: enter location, find nearest hospital, choose donation center
- 2 Admin dashboard with donor, user, donation and hospital counts

KEY FEATURES

- ◆ Eight-question blood donation eligibility quiz
- ◆ Nearest hospital lookup and appointment booking
- ◆ Emergency blood requests emailed to all users
- ◆ Admin dashboard for donors and donations

TEAM

Wsaif Saleh Alwadie
Nouf Hamad Almansour

Sarah Ali Alwadie
Reham Saleh Alyami

Maysam Ahmad Alwadie

SUPERVISOR

Dr. Hamad Abosaq

SERVES

Blood donors and
hospitals in Najran

6

Female Campus
First Semester

02

Appointment Reservation System

Booking appointments with Najran University officials

A web system design that lets visitors book appointments with Najran University officials, with roles for visitors, officials and administrators.

University officials receive visitors at inconvenient times, and visitors struggle to meet officials because they do not know their work schedules. Najran University has no single system that lets visitors book a slot with its leaders, such as the president, vice president and deans.

The team designed a web-based appointment reservation system after a requirements workshop with the university's Deanship of Information Technology. Visitors view an official's available times and book a slot; officials manage their schedule and confirm attendance; an administrator creates and manages accounts. The design sets booking limits, including reservations up to 48 hours ahead, cancellations up to 24 hours ahead and five cancellations a month. The team documented requirements, system structure, use case, data flow and sequence diagrams. It planned HTML, CSS, JavaScript, Bootstrap and SQL for implementation, which the documents list as future work.

BUILT WITH

HTML

CSS

JavaScript

Bootstrap

SQL

TEAM

Al-Batool Krhan

Shuaa Al-Hammami

Arwa Al-Hareth

Taibah Al-Musabi

Renad Al-Hawash

SUPERVISOR

Dr. Bakri Alawaji

SERVES

University officials and visitors

PARTNER

Deanship of Information
Technology, Najran University

7

Female Campus
First Semester

02

Campus & University Services

الخدمات الجامعية

KEY FEATURES

- ◆ Booking of slots with university officials
- ◆ Separate roles for visitors, officials and administrators
- ◆ Official schedules and attendance confirmation
- ◆ Booking and cancellation limits

03

Aydi

Saudi Sign Language learning app for children

A mobile app that teaches children the Saudi sign alphabet and numbers and checks their hand signs with a deep-learning model.

Children who are deaf or hard of hearing have few interactive resources for learning Saudi Sign Language, and traditional teaching methods give them little feedback on their progress. Because each country has its own sign language, early education in the national one supports the child's skills and integration into society.

The team built Aydi, an Arabic-language mobile app made with Flutter and Firebase. It teaches the sign alphabet and numbers, offers articles on sign language that a content writer manages, and includes a letter-wheel game. In the game the child spins a wheel, signs the chosen letter and photographs the hand; a convolutional neural network, trained on the Arabic Alphabets Sign Language dataset of 54,049 images with 28 letter classes, checks the sign and reports whether it is correct. The report documents the trained model's accuracy and loss curves and a validation confusion matrix.

BUILT WITH

Flutter

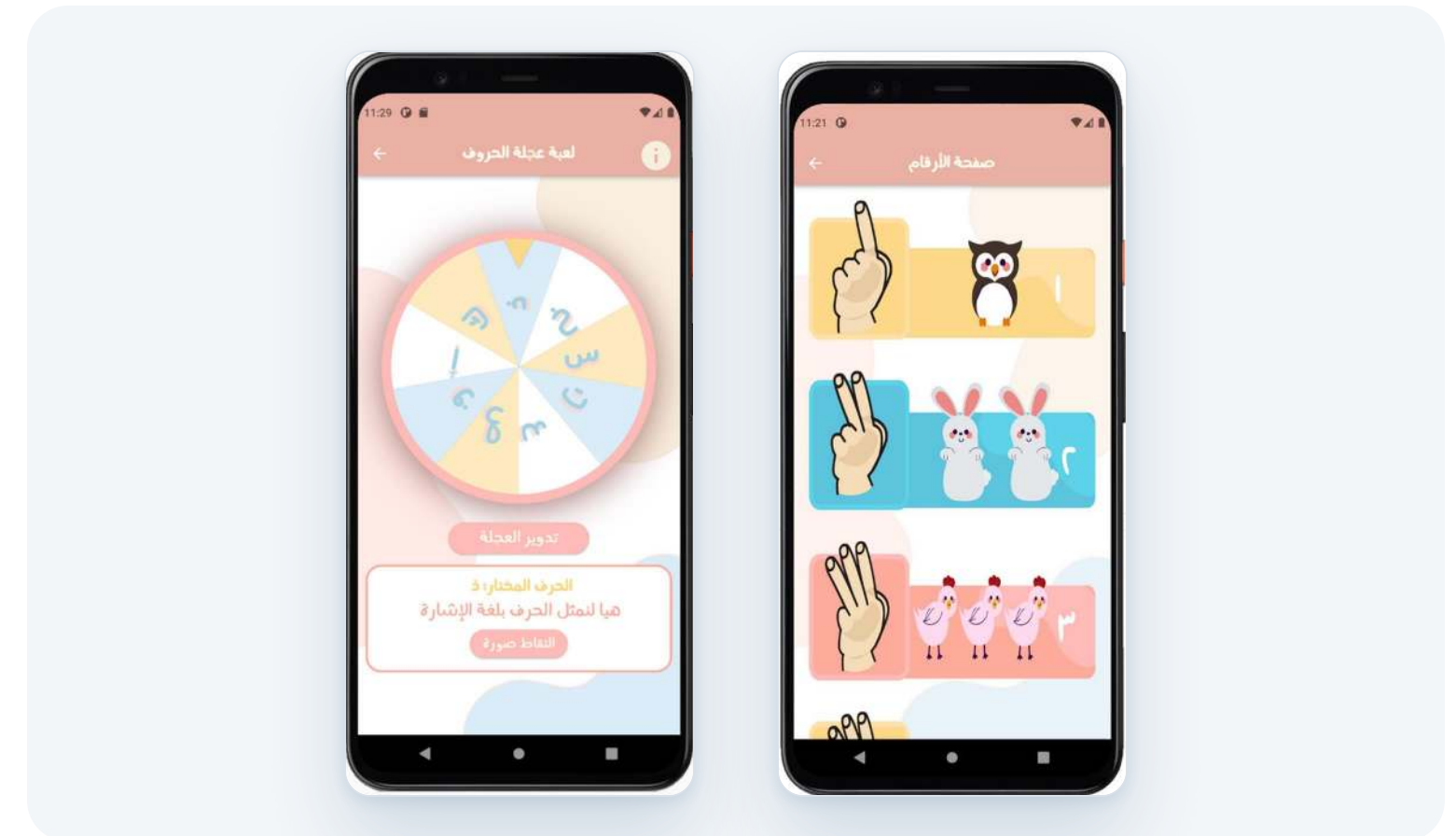
Dart

Firebase

Python

TensorFlow

Keras



- 1 Letter-wheel game screen of the Aydi app
- 2 Numbers page showing hand signs for one to three

KEY FEATURES

- ◆ Sign alphabet and number lessons
- ◆ Letter-wheel game with photo-based feedback
- ◆ Articles on sign language
- ◆ Content writer login to manage articles

TEAM

Sumayah Abdulaziz Alwadei
Shahad Ahmed Madkhli
Awsaf Mohammed Alharthi

Albatool Salah Al-Sama
Samyah Moaid Al-Qarni
Fatmah Abdalrahman Al-Khnjuf

SUPERVISOR

Ms. Muzun Alkulayb

SERVES

Deaf and hard-of-hearing
children and their families

8

Female Campus
First Semester

04

Electronic Gym & Fitness Trainer (EG&FT)

Gym and diet-plan website for Najran University trainees

A website that gives Najran University trainees coach-led fitness plans and a machine-learning diet-plan recommendation in one place.

Najran University trainees struggle to find fitness programs that fit their schedules and fitness levels, and the gym has limited capacity. They also lack information on which nutrition suits them, and no single platform combines fitness and nutrition guidance.

The team built EG&FT, an ASP.NET website written in C# on a Microsoft SQL Server database and hosted on SmarterASP. Users register as trainee, coach or nutritionist, and an administrator manages accounts. Trainees choose a coach, time and gym lessons and request fitness or diet plans. For diets, the team trained a classifier with ML.NET on a 78-entry dataset of gender, age, height, weight and diet plan, and it predicts a plan for a trainee’s data. The report states that development was completed and lists porting the system to another platform as future work.

BUILT WITH

ASP.NET

C#

Microsoft SQL Server

ML.NET

Visual Studio

IIS

SmarterASP



- 1 Trainee page of the EG&FT site, requesting fitness or diet plans
- 2 Arabic home page of the EG&FT site with login and registration

KEY FEATURES

- ◆ Roles for trainee, coach, nutritionist and administrator
- ◆ Coach-led fitness plans and gym lessons
- ◆ Diet-plan prediction with machine learning
- ◆ Training videos and nutrition content

TEAM

Nawaf Mohammed Madkhli
Saleh Ali Al Salah
Abdullah Mabark Al Harthi

Muhammad Al-Daoud
Eid Mahdy Lslom

SUPERVISOR

Dr. Ahmad Almasabi

SERVES

Najran University gym trainees

05

Emergency Ambulance Vehicle Prioritization System

AI traffic-light control that gives ambulances priority

An AI-based traffic management design that detects ambulances at a junction and clears their path, with a trained YOLOv8 detection model.

The team's report sets out to shorten ambulance response times at a busy junction without disrupting the normal flow of traffic. After reviewing work on smart traffic lights, visual sensing, vehicle-maker trials and siren detection, the team targeted an AI-controlled system for a single junction.

The team designed a system in which sensors and cameras watch the junction, an AI model recognizes an approaching ambulance and the traffic lights change to give it the right of way. The team trained a YOLOv8 model through Roboflow on 3,912 training, 507 validation and 505 test images, and built a web page where an uploaded image returns the detected class and a confidence value. The report gives a mAP of 93.2%, precision of 93.6% and recall of 84.4%, and states that on-site implementation is still required.

BUILT WITH

YOLOv8

Roboflow

JavaScript

Node.js

TEAM

Shatha Abdullah Al-Qahtani

Haya Ali Fahd Al-Sayari

Areej Ahmed Majrashi

Lina Muhammad Ali Al-Mofi

Fatima Ibrahim Al-Ghanimi

SUPERVISOR

Dr. Sultan Almakdi

SERVES

Ambulance crews
and urban road users

10

Female Campus
Second Semester



Web page returning an ambulance detection with a confidence value

KEY FEATURES

- ◆ Detects ambulances in camera images with YOLOv8
- ◆ Web page returns detected class and confidence
- ◆ Designed to switch traffic lights for ambulances
- ◆ Planned error detection and traffic data logging

06

Exam Management System (EMS)

Exam administration for the college

A Windows application that helps the college's exam control staff register users and print exam-day forms and reports.

Exam administration at the College of Computer Science and Information Systems at Najran University relied on manual methods such as Word reports. The team's documents state that this led to lost control papers and made exams hard to organize. A questionnaire that collected 90 responses, mostly from students, reported difficulties with the paper-based process.

The team built the Exam Management System (EMS), a Windows application written in C# with Visual Studio and a Microsoft SQL Server database. Users register and log in, and the main screen groups forms for students, exam days, services and facilities, and guidelines. From these menus users print exam-day outputs such as hall posters and daily invigilator sign-in sheets. The report documents two login tests, one for empty fields and one for invalid credentials.

BUILT WITH

C#

Windows Forms

Visual Studio

Microsoft SQL Server

TEAM

Ali Obyan

Muhammad Hamad

Essam Ali

SUPERVISOR

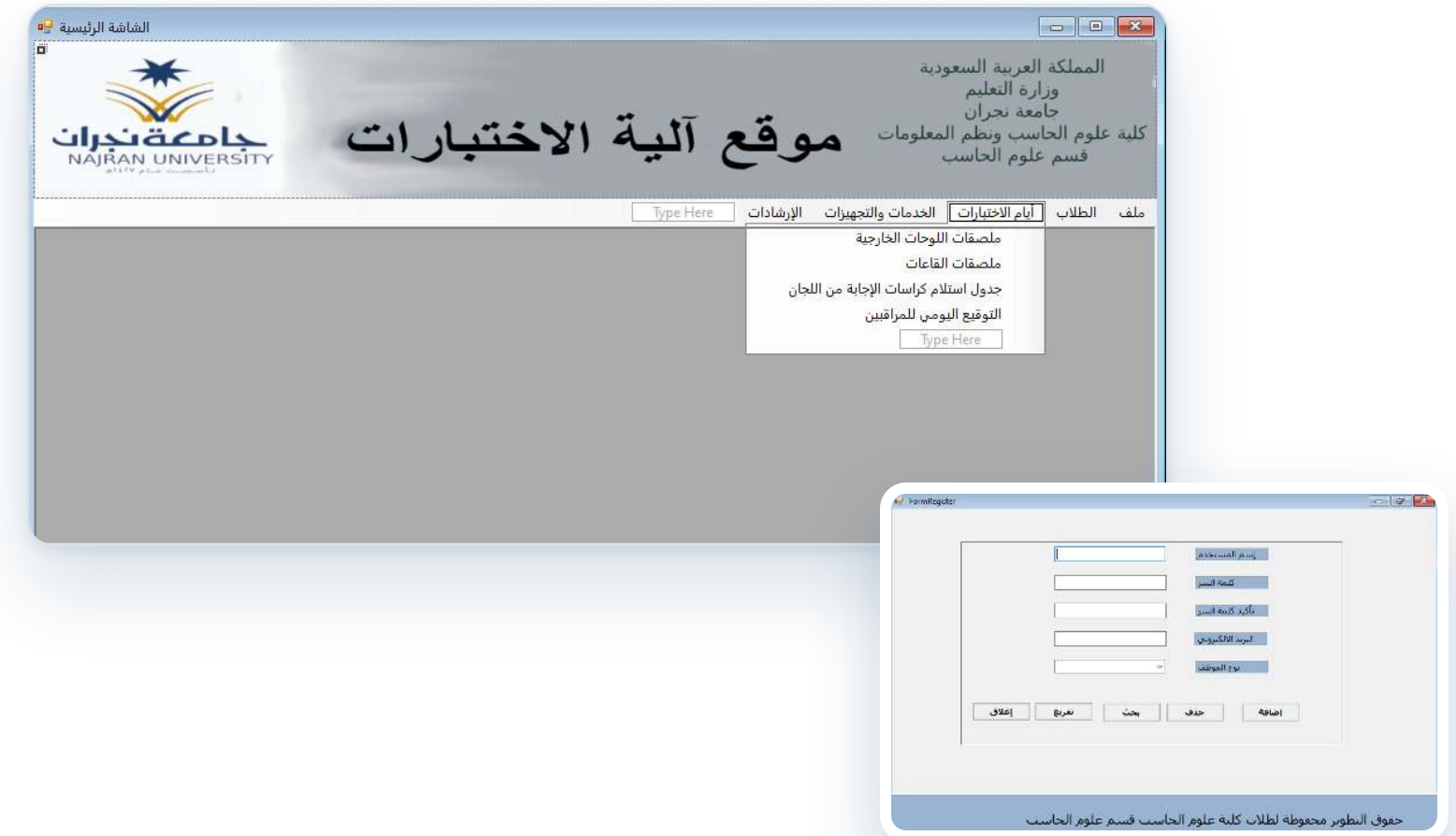
Dr. Naif Almudawi

SERVES

College exam control
staff and faculty

11

Male Campus
First Semester



- 1 EMS main screen with the exam-days menu open
- 2 EMS user registration form

KEY FEATURES

- ◆ User registration, login and password recovery
- ◆ Printable student, guideline and facility forms
- ◆ Exam-day hall posters and invigilator sign-in sheets
- ◆ Answer-booklet receipt schedule for exam committees

07

Home Health Care Program (HHCP)

Android app for home medical care in Najran

An Android app that connects home health care patients in Najran with doctors for appointments, medical files, chat and video calls.

Home health care brings doctors, nurses and specialists to patients' homes instead of requiring hospital visits. The team's report states that in Najran many patients find it difficult to locate a home health care program that fits their needs, and that no application existed to support one. The project aimed to reduce hospital and clinic visits and to involve the patient's family in the treatment plan.

The team built the Home Health Care Program (HHCP), an Android app written in Java with a Firebase back end. Patients register, keep a medical file, book appointments, and chat or video call with a doctor. Doctors manage their patients, appointment requests and prescriptions, and managers administer patient and doctor accounts and view statistics. The team ran a white-box test of saving data with AndroidJUnit4 and a black-box JUnit test of the login function, and the report records the white-box result as passed.

BUILT WITH

Java

Android Studio

Firebase

PHP

XAMPP

JUnit

TEAM

Manahil Rashid Al Munjim
Noura Salem Al Suleiman
Atheer Ahmed Al Kabir

Dalal Abdullah Al Zamanan
Noura Ahmed Al-Aleya

SUPERVISOR

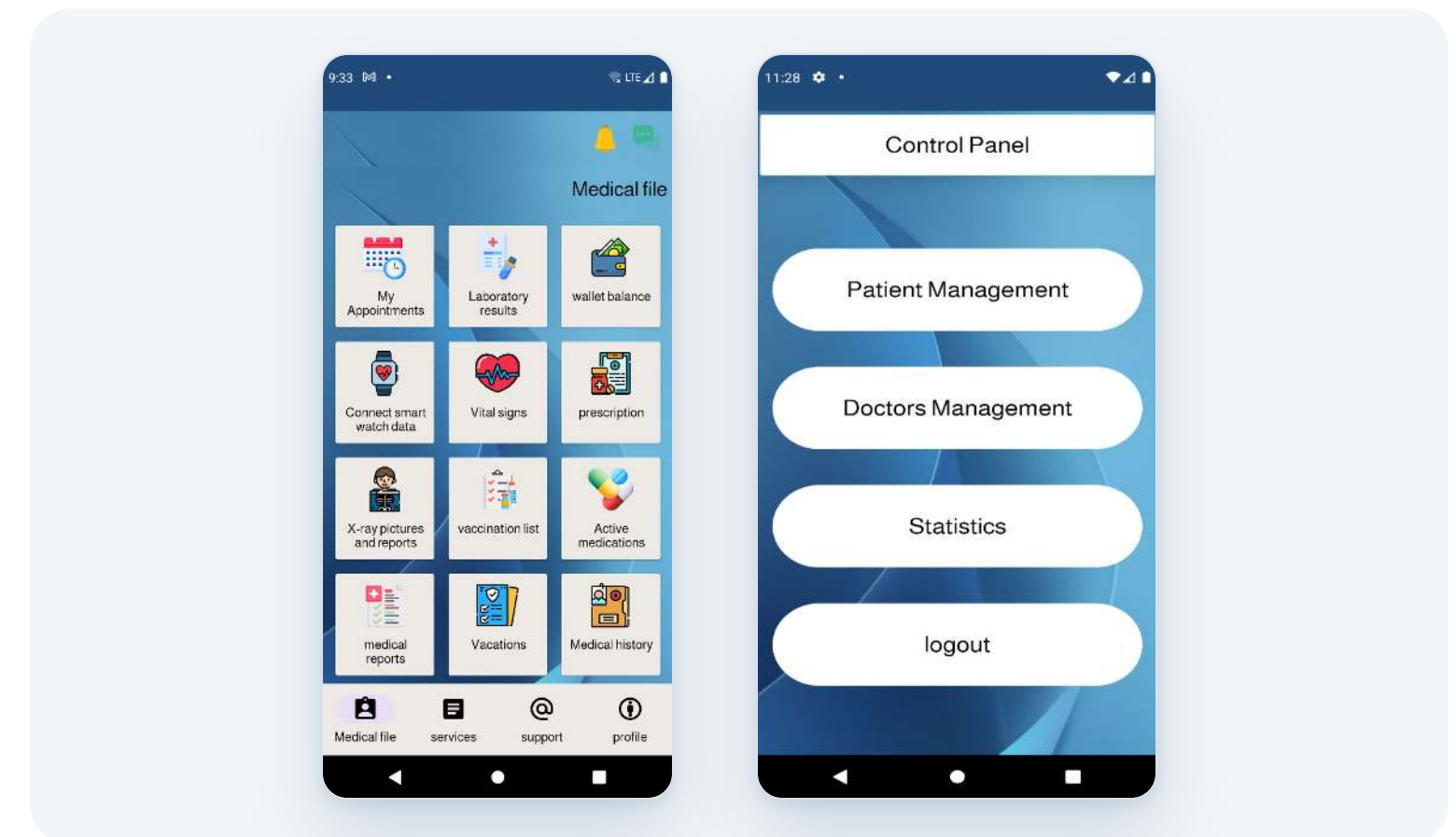
Dr. Adel Rajab

SERVES

Home health care patients
and doctors in Najran

12

Female Campus
Second Semester



- 1 Patient medical file screen of the HHCP Android app
- 2 Manager control panel with patient, doctor and statistics options

KEY FEATURES

- ◆ Patient medical file with reports and prescriptions
- ◆ Appointment booking with a chosen doctor
- ◆ Chat and video call between patient and doctor
- ◆ Manager panel with patient and doctor management

08

HUDURK

QR code attendance system for classrooms

A mobile app that lets teachers request a QR code for a class and students scan it to mark attendance.

Taking attendance on paper is slow and prone to errors, and paper records are hard to keep and manage. At the College of Computer Science and Information Systems at Najran University, teachers recorded attendance by hand. The team set out to replace the paper sheet with a mobile application that cuts paper use.

The team built HUDURK, a cross-platform mobile app written in Dart with Flutter, with its data stored in Firebase. A teacher requests a QR code for the current class, and each student scans it with the phone camera to mark attendance; the app asks the student to allow camera and location access. Administrators review teacher validation requests, manage courses and generate attendance reports, which faculty members use to follow attendance and absence. The final report states that the app achieved all the project aims set out in its first chapter.

BUILT WITH

Flutter

Dart

Firebase

Cloud Firestore

Android Studio

Visual Studio Code

08

Campus & University Services
الخدمات الجامعية

KEY FEATURES

- Teachers request a QR code for each class
- Students scan the code to mark attendance
- Camera and location permission checks
- Attendance reports and course management

TEAM

Aseel Salem Alyami

Maram Salman Al Habis

Norah Mohammad Alfahadi

Ibtehal Saleh Al Qahes

Taif Naseer Al Abyah

SUPERVISOR

Ms. Eman Abdelkareem

SERVES

Najran University faculty
members and students

13

Female Campus
Second Semester

09

Raseen

Dashboard for managing learning outcomes

A dashboard that links course learning outcomes to program learning outcomes for Najran University’s quality teams, faculty and administrators.

Najran University’s quality teams need to show how each course learning outcome (CLO) supports a program learning outcome (PLO). The team’s problem statement describes quality data scattered across several systems, no real-time analytics, and no simple interface for users with different technical skills. The team surveyed faculty and staff to establish requirements.

The team built Raseen, a dashboard that links CLOs to PLOs. Student marks were analyzed in Python with pandas and charted, then presented in Power BI dashboards for courses such as Artificial Intelligence, Cybersecurity and Machine Learning. A web interface adds sign-in, charts on a dashboard page, and management pages for students, programs, courses and learning outcomes. The report ends with four login test cases that show the expected error messages for invalid or missing credentials.

BUILT WITH

Python

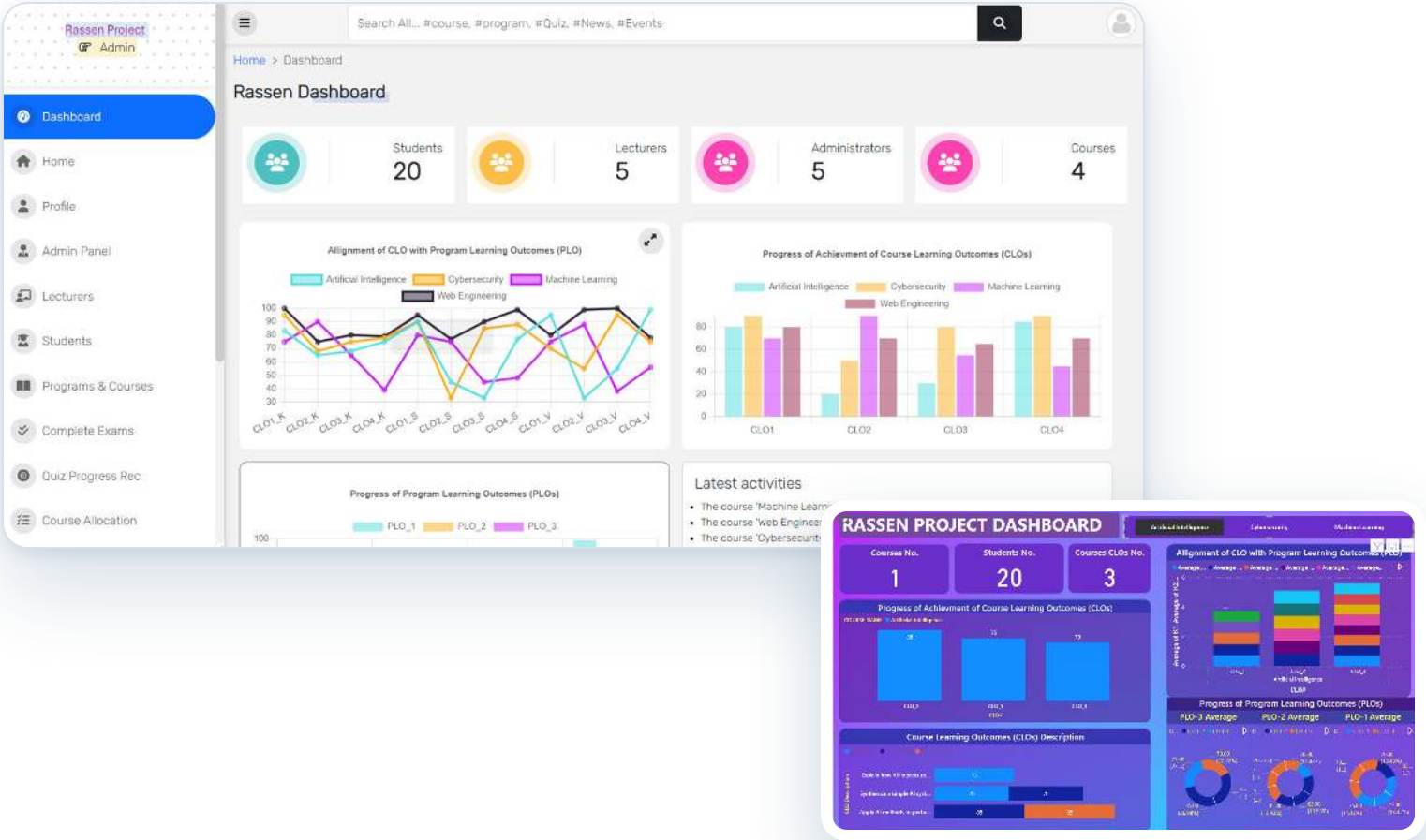
pandas

Matplotlib

Power BI

HTML/CSS

JavaScript



- 1 Raseen web dashboard with learning-outcome charts
- 2 Power BI dashboard of CLO and PLO progress

KEY FEATURES

- CLO-to-PLO alignment charts by course
- Power BI dashboards of outcome progress
- Management pages for students, programs and courses
- Sign-in with ID number and password

TEAM

Anwar Abdul Rahman Saeed Asiri
Razan Ali Ali Hakmi
Shouq Rashid AlNassib

Rehal Ali Mohammed Alsaloome
Dina Mohammed Abdullah

SUPERVISOR

Dr. Adel Alsulaiman

SERVES

Najran University quality teams,
faculty and administrators

14
Female Campus
Second Semester

10

SA_Keeper

Automated security compliance monitoring and threat detection

A machine-learning approach that detects network attacks on the NSL-KDD benchmark and is designed to feed an automated security monitoring system.

Traditional security measures struggle to keep pace with the changing techniques of cyber attackers, so networks need detection methods that learn from data. The team focused on network attacks and network security. It proposed a monitoring system that would collect network data, detect threats with machine learning and deep learning, raise alerts with suggested responses, and produce reports.

The team trained and compared machine-learning and deep-learning models on the NSL-KDD benchmark dataset in Google Colab, which labels network traffic as normal or attack. After reducing features with PCA, it tested logistic regression, KNN, naive Bayes, SVM, decision tree, random forest, XGBoost and a neural network. The report states that XGBoost reached 97% accuracy while the other algorithms reached 96%. The alerting, reporting and user interface components of the full monitoring system are described as a design rather than a finished product.

BUILT WITH

Python

TensorFlow

scikit-learn

pandas

XGBoost

Google Colab

TEAM

Wed Khalid Al-Bahri

Rawabi Mohammed Al-Hutilah

Raghad Ghazi Alasmri

Alhanoof Hadi Al Mahameed

Jehan Abdullah Alshehri

The diagram illustrates the architecture of a Machine Learning Threat Detection System, showing the flow from data collection to alerting and reporting.

Training phase: A **Machine Learning Module** processes a **dataset** using a **feature extractor** and a **classifier** to create a **Supervised machine learning** model. This model is stored on a **server** (database server).

Detection phase: The **Supervised machine learning** model is used to process new data (labeled "req") from the **database server**. The model outputs a **predict** result, which is then used by the **Alerting phase**.

Alerting phase: An **Alert Dispatcher** sends alerts based on the predicted results. The alerts are categorized by severity: P1 - critical, P2 - high, P3 - moderate, P4 - low, and P5 - informational. A note states: "alerts are generated based on the analysis done by the machine learning algorithms."

Reporting Module: A **Report Generator** and **Data Visualization** component generate reports based on the stored data and threat detection analysis. A note states: "It generates reports based on the stored data and threat detection analysis."

Client Interaction: A **Client** interacts with the system via a **user interface** (Dashboard and Notification panel) and an **api**. The client sends a **request** to the **api**, which returns a **response**. The **api** also receives a **register** request from the **user interface**.

Confusion Matrix: A confusion matrix is shown in the bottom right corner, illustrating the model's performance. The matrix compares the **True label** (normal, attack) against the **Predicted label** (normal, attack). The values are: True Normal = 13275 (normal), True Normal = 311 (attack), True Attack = 107 (normal), True Attack = 11452 (attack).

- 1 Planned architecture: training, detection, alerting, reporting and user interface
- 2 Confusion matrix of normal versus attack traffic classification

KEY FEATURES

- ◆ Classifies network traffic as normal or attack
- ◆ Compares eight machine- and deep-learning models
- ◆ Designed alerts, reports and monitoring dashboard

SUPERVISOR

Dr. Mohammed Alshehri

SERVES

System administrators
and security professionals

15

Female Campus
Second Semester

11

Smart Student

Academic assistance website for CS students

A website where Najran University computer science students find tutor-made explanation videos, subject overviews and announcements in one place.

Computer science students at Najran University often study on their own, but the number of online videos and sites makes it hard to tell which sources are reliable. The team reviewed sites such as Vision Academy, Stack Overflow and Tutorials Point and surveyed students with a questionnaire, which pointed to the need for one website with trusted subject explanations.

The team designed Smart Student as a website with three kinds of users. Students log in, browse subjects, watch the explanation videos that tutors upload, read announcements and rate tutors. Tutors manage their videos and announcements and view their ratings. Administrators manage subjects, announcements, videos, ratings and interview exams. Following the waterfall model, the team implemented the interface pages with HTML, CSS, JavaScript and PHP over a MySQL database. The final report presents these pages and leaves full implementation and testing of the system to future work.

BUILT WITH

PHP

MySQL

JavaScript

HTML

CSS

TEAM

Wasaif Nasser Alsaaed
Shahad Ali Hajer
Abeer Muhanna Almutairi

Hanna Abdulrhman Alghmadi
Razan Shaker Almrdomah
Atheer Hamad Al Yami

SUPERVISOR

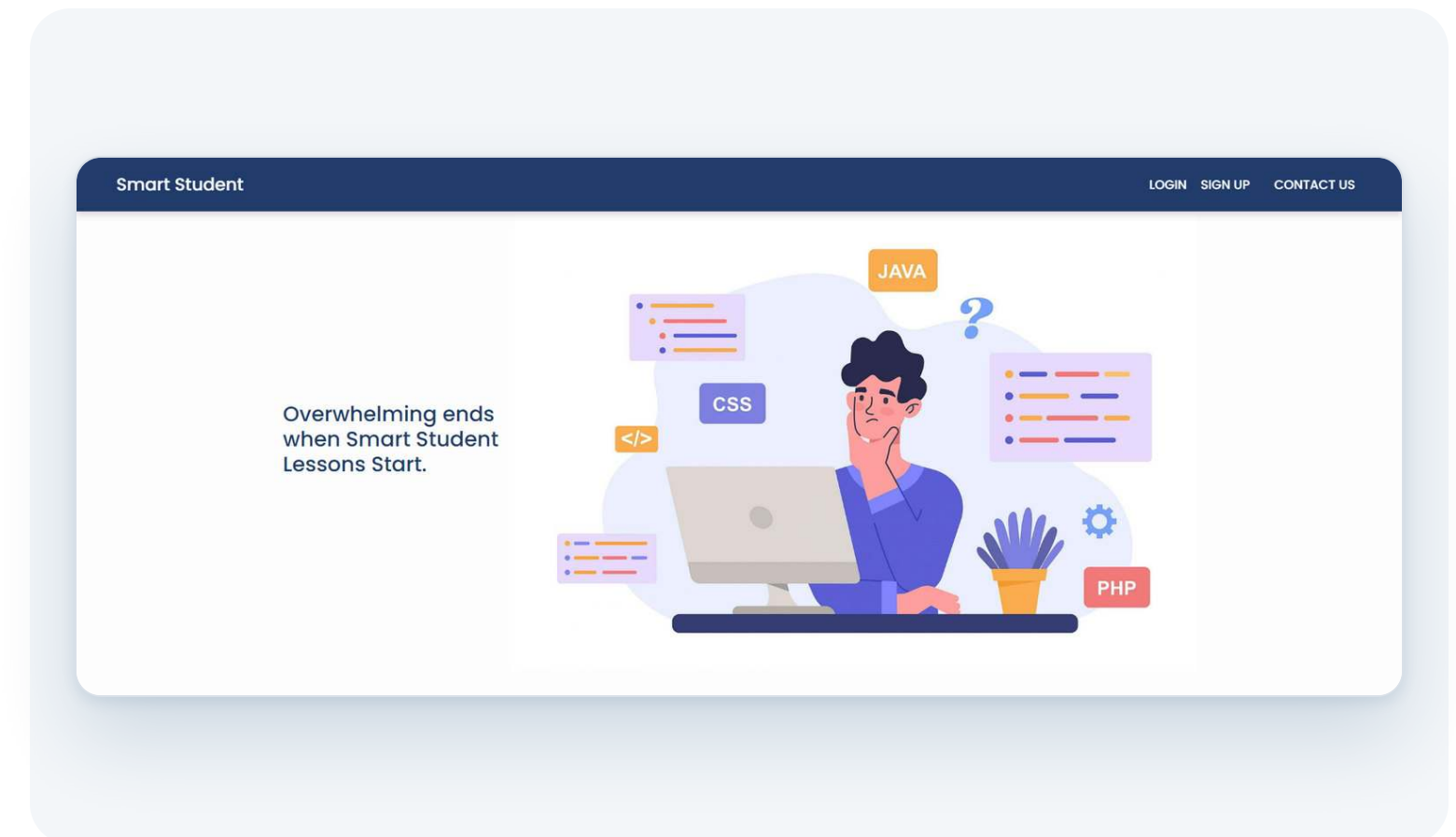
Dr. Hanan Halawani

SERVES

Najran University computer
science students and tutors

16

Female Campus
Second Semester



Smart Student home page with login, sign-up and contact links

KEY FEATURES

- ◆ Tutor-uploaded subject explanation videos
- ◆ Subject overviews and announcements
- ◆ Student ratings of tutors
- ◆ Admin management of subjects, videos and exams

12

SQL Injection Detection Using Machine Learning

A study comparing five machine-learning classifiers that separate malicious SQL injection queries from normal queries, for web application security.

SQL injection is one of the most common threats to web applications. It exploits improper handling of user input to run malicious queries, which can expose, alter or steal data. The team studied machine learning as a way to detect these attacks from the query text itself.

The team worked in Python with pandas, NumPy, scikit-learn, Matplotlib, Seaborn and Jupyter Notebook. They used a labeled dataset of 30,905 queries covering error, union and blind attacks, preprocessed the query text and trained five classifiers: decision tree, logistic regression, support vector machine, random forest and k-nearest neighbors. On the team's dataset, the final presentation reports accuracies of 99.35% for random forest, 99.25% for the support vector machine, 99.10% for logistic regression, 98.8% for the decision tree and 73% for k-nearest neighbors. The team recommends the support vector machine because it ran faster than random forest.

BUILT WITH

Python

scikit-learn

pandas

NumPy

Matplotlib

Seaborn

Jupyter Notebook

TEAM

Mohammed Saleh Alsallum

Mohammed Abbas Almakrami

Ali Nasser Alabbas

Salman Hussain Abu Saq

Mohammed Musaed Almasabi

KEY FEATURES

- ◆ Labeled dataset of benign and malicious SQL queries
- ◆ Preprocessing and feature engineering of query text
- ◆ Five classifiers trained and compared
- ◆ Accuracy and execution time used to pick a model

SUPERVISOR

Dr. Mohammad Alsulami

17

Male Campus
Second Semester

13

Supervised Machine Learning Model for Cancer Classification

A Python model that classifies tumors as benign or malignant from measured features, comparing four supervised learning algorithms.

Cancer is a leading cause of illness and death worldwide, and early, accurate diagnosis improves patient outcomes. Traditional classification by histopathological examination can be subjective and time-consuming, so the team explored whether supervised machine learning could support medical professionals in telling benign tumors from malignant ones.

The team built the classifier in Python in a Jupyter Notebook, using scikit-learn, pandas, Matplotlib and Seaborn. The dataset describes each tumor with mean, standard error and worst-value measurements such as radius, texture, perimeter, area and concavity, labeled benign or malignant. After holding out 20% of the data for testing, the team trained a linear SVM, an SVM with an RBF kernel, k-nearest neighbors and random forest. On that test split, the RBF-kernel SVM scored highest at 98.25% accuracy.

BUILT WITH

Python

Jupyter Notebook

scikit-learn

pandas

Matplotlib

Seaborn

Docker

TEAM

Mana Saleh Hadi Al Aqeel
Mohammed Madhi Al Zamanan

Salem Hussin Al Salem

SUPERVISOR

Dr. Sultan Alamer

SERVES

Medical professionals
diagnosing cancer

18

Male Campus
First Semester

13

Health & Wellbeing
الصحة والرفاه

KEY FEATURES

- ◆ Benign or malignant tumor classification
- ◆ Comparison of four supervised learning algorithms
- ◆ Precision, recall and F1-score reporting
- ◆ Confusion matrix and accuracy evaluation

14

Tafshan

Mobile app for choosing affordable outings

A mobile app that helps friends and families choose and plan budget-friendly outings, and lets businesses promote offers to them.

Friends and families often find it hard to agree on where to go, especially when budgets are limited, and many people struggle to find discounts for activities and places. Businesses, in turn, have few quick ways to present their offers to potential customers. The project proposed an application that eases that choice and lets businesses promote their services.

The team built Tafshan, a mobile app written in Dart with Flutter, with Firebase Authentication and Cloud Firestore handling accounts and data. Users browse events and offers from restaurants, cafes, landmarks and entertainment venues, add friends and invite them to an outing. On a page called Qataty, a user picks an event and friends, and the app splits the bill equally among them. Businesses publish promotions and discounts inside the app. The team implemented the interface screens and tested the login, sign-up, events, friends and Qataty pages for error handling.

BUILT WITH

Flutter

Dart

Firebase

Cloud Firestore

Android Studio

14

Media, Games & Entertainment

الإعلام والألعاب والترفيه

KEY FEATURES

- ◆ Browse restaurants, cafes, landmarks and entertainment events
- ◆ Add friends and invite them to outings
- ◆ Qataty group outings with equal bill splitting
- ◆ Offers and discounts published by businesses

TEAM

Hadeel Saleh
Nawal Mofarh

Amal Turki
Arwa Saeed

Fouz Mubarak
Fanar Falah

SUPERVISOR

Dr. Saeed Abo-oleet

SERVES

Friends, families
and local businesses

19

Female Campus
Second Semester

15

The Alumni System

Najran University graduate and student web platform

A web platform that connects Najran University students and graduates with courses, news, training and jobs.

Najran University had no website that kept its students and graduates informed, in contact with the university and connected to one another after graduation. The team worked with the university's information technology department and surveyed students of the College of Computer Science and Information Systems with an online questionnaire to shape the requirements.

Following the waterfall model, the team built an Arabic-language web platform with PHP and MySQL, using Bootstrap for the interface and XAMPP and phpMyAdmin for local development. Students and graduates keep a personal profile with skills and a CV, and browse courses, activities, news and training opportunities. Employers post jobs and review graduate resumes, and administrators add events and manage users. The report presents screenshots of the working interface and functional and non-functional test cases covering sign-in, personal information, CV upload, courses and training opportunities.

BUILT WITH

PHP

MySQL

HTML

CSS

JavaScript

Bootstrap

XAMPP

phpMyAdmin

TEAM

Samar Mohammed Sharahili
Ghadeer Mulfi Khadra
Reyoof Musaad

Hanan Mohammed Ali
Rawan Ali Ahmed

SUPERVISOR

Dr. Abdulwahab Alazeb

SERVES

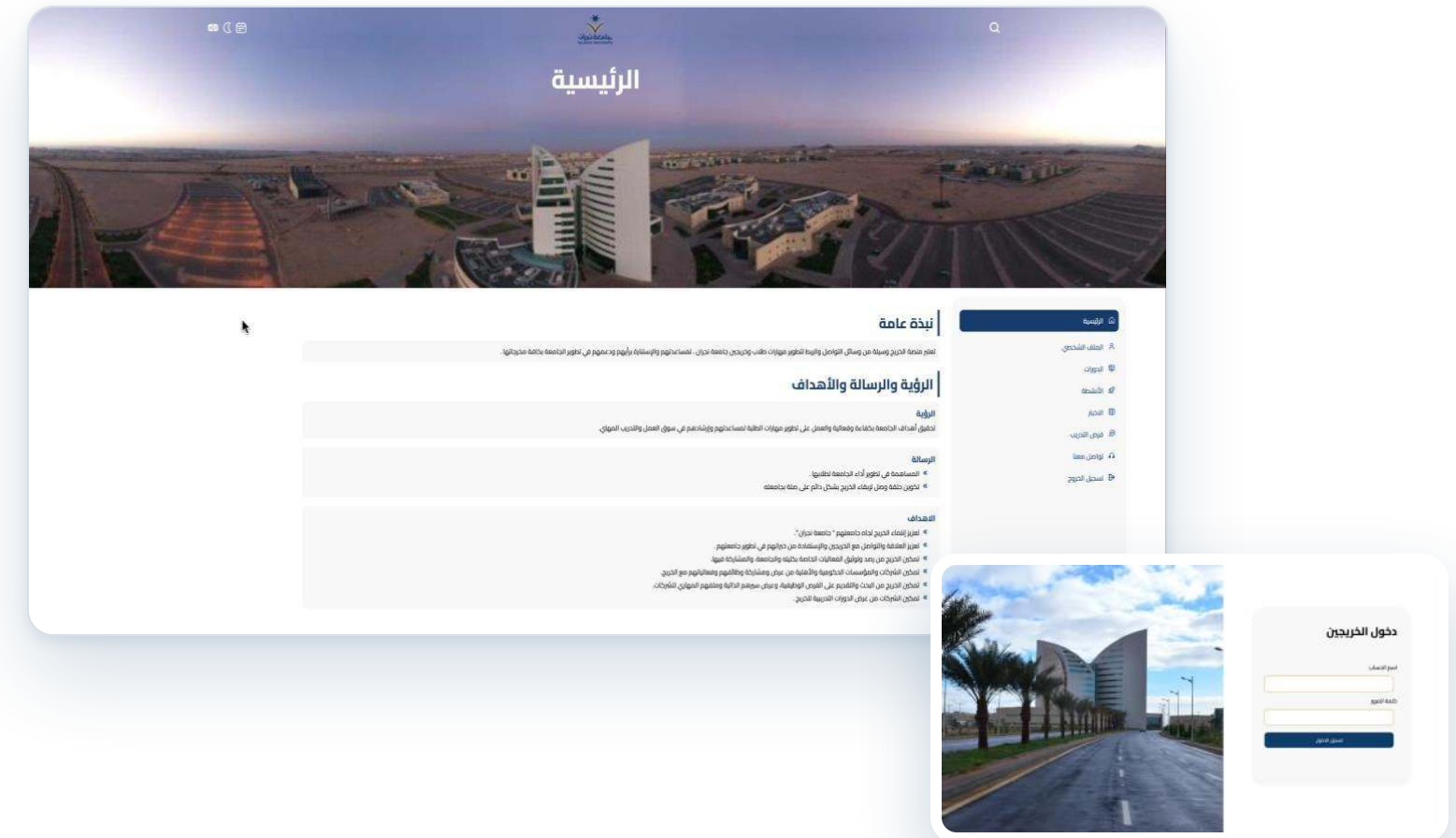
Graduates, students and employers

PARTNER

Information technology
department, Najran University

20

Female Campus
Second Semester



- 1 Platform home page with navigation menu and vision statement (Arabic interface)
- 2 Graduate sign-in page of the platform (Arabic interface)

KEY FEATURES

- ◆ Graduate profiles with skills and CV upload
- ◆ Courses, activities, news and training opportunities
- ◆ Employer job posting and resume review
- ◆ Administrator management of users and events

Information Systems

نظم المعلومات

5

Projects مشاريع

22

Students طالبًا وطالبة

Projects 16–20 · pages 22–26

المشاريع 16–20 · الصفحات 22–26

16

A Mobile Application for Managing a Stem Cell Bank (MAFMSCB)

An Android app design for managing a stem cell bank's inventory, users and requests for administrators, doctors, patients and benefactors.

Stem cell therapies are promising for degenerative disorders and demand for stem cell banks is growing, but the supply of stem cells is limited. The report states that current systems for managing these banks are inefficient, which makes managing and distributing the cells harder.

The team designed a mobile application for a stem cell bank with four user roles. Administrators monitor inventory and manage accounts; doctors access stem cell records and request samples for patients; patients view their records and book appointments; benefactors register and donate. The app is an Android client written in Java that talks to a Microsoft SQL Server database through a C# web service. The team produced UML and entity-relationship models, built registration, login and role screens, and tested input validation for login and registration. The report describes the work as a design-level framework and names full implementation as future work.

BUILT WITH

Android Studio

Java

C#

SOAP web service

Microsoft SQL Server

Visual Studio

16

Health & Wellbeing

الصحة والرفاه

KEY FEATURES

- ◆ Stem cell inventory and status tracking
- ◆ Four roles: administrator, doctor, patient, benefactor
- ◆ Doctor requests for stem cell samples
- ◆ Patient records and appointment booking

TEAM

Mufarreh Salem Alshehri
Hamad Mohammed Sablan
Hussien Mohammed Al Salem

Yousef Ghonaim Aldosari
Nawaf Yahya Alwadey

SUPERVISOR

Dr. Fekry Olayah

SERVES

Stem cell bank staff,
doctors, patients and donors

22

Male Campus
First Semester

17

Future Stock

Stock price prediction web application

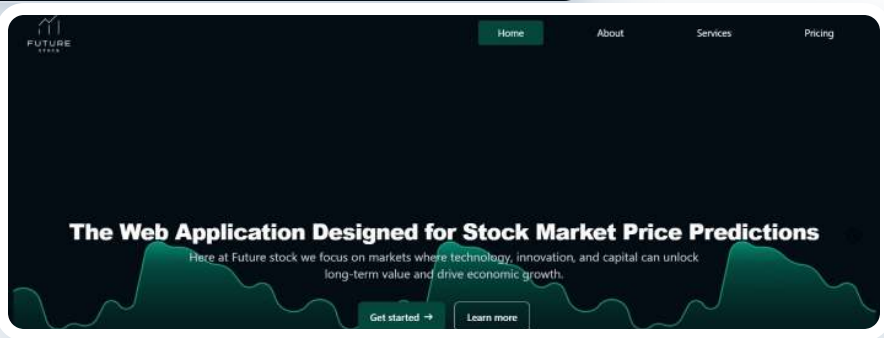
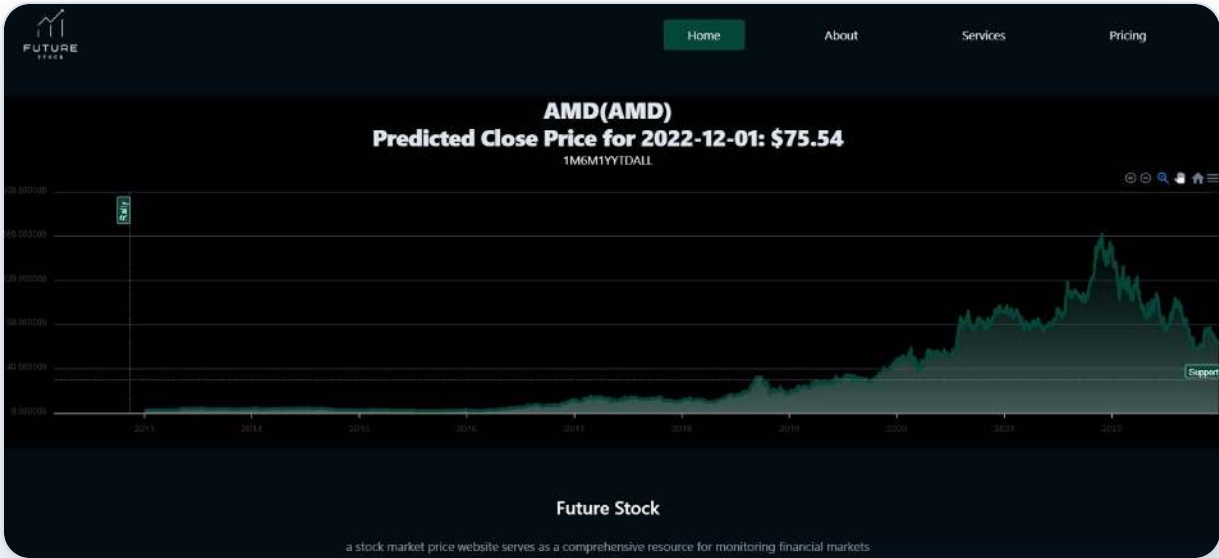
A web application that predicts a company’s stock closing price with an LSTM model, for individual investors, analysts and traders.

Stock prices are volatile and hard to forecast, and the team’s problem statement argues that traditional technical and fundamental analysis cannot capture the complex patterns in price movements. The team surveyed the public about their knowledge of the stock market and their use of prediction tools, and the responses showed strong agreement that such a tool would help.

The team built Future Stock, a web application for stock price prediction. After creating an account, a user selects a company and a date, or uploads a dataset, and the system returns a predicted closing price with a price-history chart. The model is a Long Short-Term Memory (LSTM) network trained on historical prices, written in Python. An AI chat page answers stock-related questions. The report documents test cases for the model, sign-up and password change, and concludes that the LSTM approach looks promising while noting that no model guarantees accurate predictions.

BUILT WITH

- Python
- LSTM
- pandas
- scikit-learn
- Jupyter



- 1 Predicted closing price and price-history chart for one company
- 2 Future Stock landing page

KEY FEATURES

- ◆ Price prediction by company and date
- ◆ Upload of the user’s own dataset
- ◆ Predicted price shown with a history chart
- ◆ AI chat page for stock questions

TEAM

Reem Hamad Sarrar Al-Ghubari
Modhi Fawaz Al-Munajem
Sarah Ali Al-Qahtani

Fatimah Rashed Al-Munajem
Zainab Nasser Al-Harathi

SUPERVISOR

Dr. Mimonah Alqathradly

SERVES

Individual investors, financial analysts and traders

23

Female Campus
Second Semester

18

Istknan

استكنان

Yoga and mandala wellness mobile app

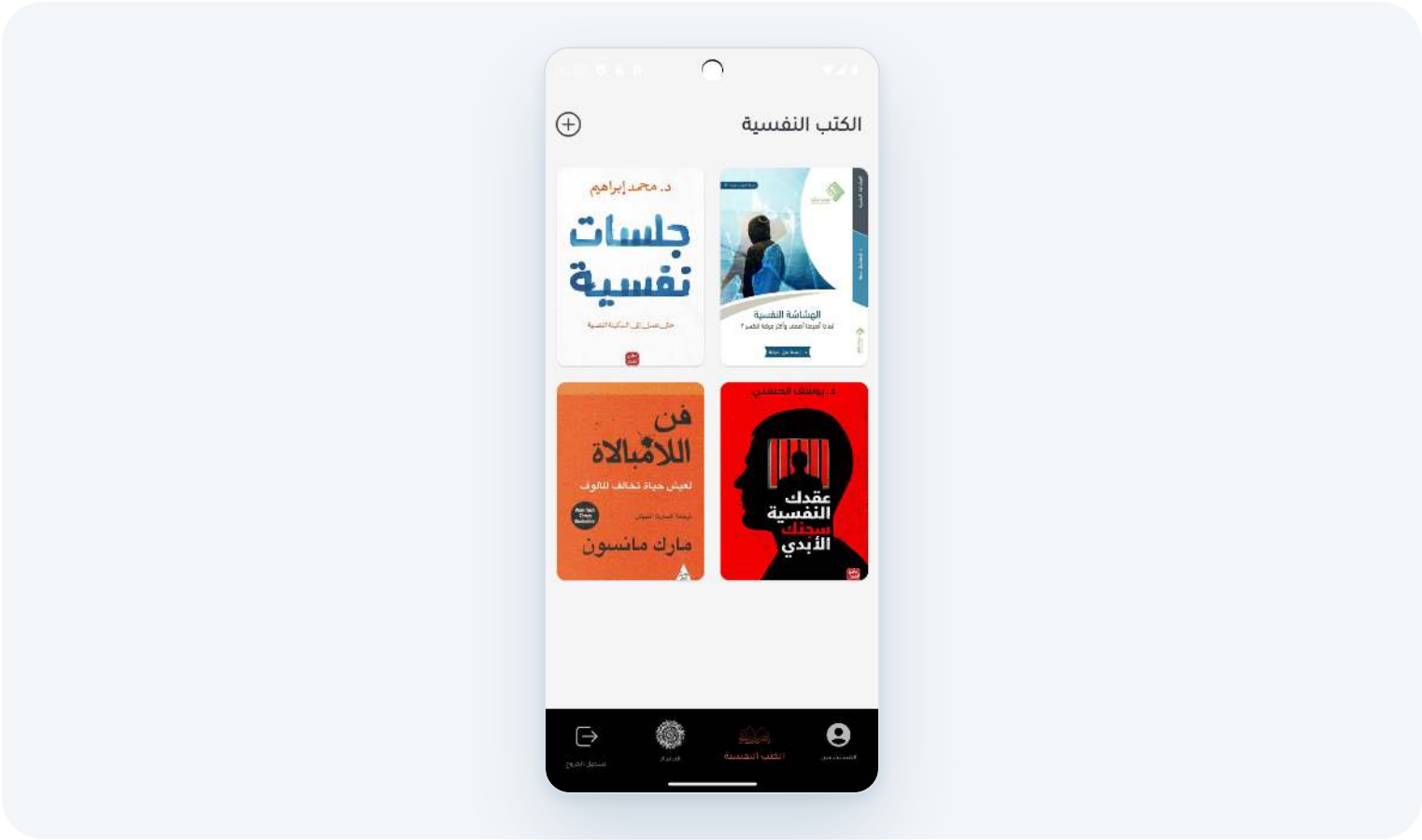
A bilingual mobile app that combines yoga sessions, mandala coloring and mental-health books to help users manage stress.

Stress and limited awareness of mental health affect many people, and few apps bring calming practices together in one place. The team aimed to serve yoga teachers, female users, children and any user who wants to learn about mental health. A survey that drew about 243 responses asked about yoga, the mandala technique and activities that ease anxiety.

The team built Istknan as a Flutter mobile app in Arabic and English. Users reach yoga sessions, mandala drawings to color, a timer and a library of mental-health books. Teachers and administrators log in to add, edit and delete sessions, books and mandala drawings, which are stored in Firebase. The team first built the database in SQL and replaced it with Firebase after testing both. The report presents the implemented screens and white-box test cases for sign-up, login and book management.

BUILT WITH

- Flutter
- Dart
- Firebase
- Android Studio
- Visual Studio Code



Book library screen listing mental-health titles, with add button

KEY FEATURES

- ◆ Yoga sessions created and managed by teachers
- ◆ Mandala drawings for coloring, grouped in sections
- ◆ Mental-health book library
- ◆ Arabic and English interface

TEAM

Nawal Hussain Abu Saq
Maryam Salem Al Dawais

Ala Hussain Alsagoor
Reyana Mahdi Al Munjam

Hanadi AbdualI Alyami
Beshayer Saud Mohammed

SUPERVISOR

Dr. Samar Alqhtani

SERVES

Yoga teachers, trainees
and general users

24

Female Campus
Second Semester

19

Makkin for Field Training in Najran University

مَكِّن للتدريب الميداني بجامعة نجران

A bilingual website that helps Najran University students near graduation find field training providers and take professional courses.

Before graduating, Najran University students must find a training provider, obtain university approval on paper and take it to the provider. The team found this paperwork slow and not covered by the university's existing services, and surveyed students on the idea.

The team built Makkin, a website with three roles: students, training providers and an administrator. Providers post opportunities that the administrator approves, and students browse providers and their requirements, apply for opportunities and courses, and share previous experience for their resumes. Users can message each other and the administrator. The site was written in HTML, CSS, JavaScript and PHP on XAMPP, and the report documents white-box tests of sign-up, login, messaging and applications.

BUILT WITH

HTML

CSS

JavaScript

PHP

XAMPP

phpMyAdmin

TEAM

Sarah Nasser Lesloom

Ghada Mohammed Alsharf

Weam Ali Blharith

SUPERVISOR

Dr. Samar Alqhtani

SERVES

Najran University students
and training providers

25

Female Campus
First Semester

19

Campus & University Services**الخدمات الجامعية**

KEY FEATURES

- ◆ Training providers and opportunities with requirements
- ◆ Student applications for opportunities and courses
- ◆ Messaging between students, providers and administrator
- ◆ Arabic and English interface

20

Mobile Application for Alumni of CCSIS in Najran University

An Android app that connects the college alumni unit with its graduates through news, jobs, training programs, chat and inquiries.

The College of Computer Science and Information Systems at Najran University has an alumni unit that needs a simple way to stay in touch with graduates. The team's stated aim was to create a mobile application that keeps alumni informed of the unit's latest updates and lets them send inquiries to the unit easily.

The team built an Android application in Android Studio with Java, backed by a Microsoft SQL Server database with tables for alumni, alumni units, administrators, news, jobs, training programs, inquiries and chat messages. An administrator accepts or deletes alumni units, and each unit publishes news, jobs and training programs and replies to inquiries. Alumni register, keep a profile, search for friends, join a chat and send inquiries. The team tested the app in an Android emulator and reports that it checks user input to prevent incorrect entries.

BUILT WITH

Android Studio

Java

Android

Microsoft SQL Server

20

Campus & University Services

الخدمات الجامعية

KEY FEATURES

- ◆ News, jobs and training programs for alumni
- ◆ Inquiries from alumni answered by the alumni unit
- ◆ Alumni chat and friend search
- ◆ Administrator approval of alumni units

TEAM

Samira Alawi Al-Masabi

Fatimah Mohammed Al-Yami

Yousra Mohammed Al-Soma

SUPERVISORS

Ms. Saira Banu

Prof. Khairan Rajab

SERVES

College alumni unit
and its graduates

26

Female Campus
First Semester

Project supervisorsالمشرفون على المشاريع

SUPERVISORالمشرف	PROJECTSالمشاريع	SUPERVISORالمشرف	PROJECTSالمشاريع	SUPERVISORالمشرف	PROJECTSالمشاريع
Dr. Abdulwahab Alazeb	15	Dr. Hamad Abosaq	01	Dr. Naif Almudawi	06
Dr. Adel Alsulaiman	09	Dr. Hanan Halawani	11	Dr. Saeed Abo-oleet	14
Dr. Adel Rajab	07	Prof. Khairan Rajab	20	Ms. Saira Banu	20
Dr. Ahmad Almasabi	04	Dr. Mimonah Alqathrad	17	Dr. Samar Alqhtani	18, 19
Dr. Bakri Alawaji	02	Dr. Mohammad Alsulami	12	Dr. Sultan Alamer	13
Ms. Eman Abdelkareem	08	Dr. Mohammed Alshehri	10	Dr. Sultan Almakdi	05
Dr. Fekry Olayah	16	Ms. Muzun Alkulayb	03		



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.