UMPSA

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REPORT

BVI 3124

APPLICATION SYSTEM DEVELOPMENT II

Assignment 2: Wireframing and Input Handling with Validation & Data Storage

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1. INTRODUCTION

This project is a simple web application called Event Registration System developed using Streamlit and Python. The event chosen is an Appreciation Ceremony. The system allows users to register by filling in a form with their personal details.

The main purpose of this project is to learn how to:

- Design a user interface using wireframes
- Handle form input with validation
- Store data in a CSV file and a SQLite database

The system has three pages: Home, Registration, and Confirmation. It helps manage event registration easily and ensures the data is saved correctly. This project also helps improve problem-solving skills in application development.

2. USER FLOW DIAGRAM

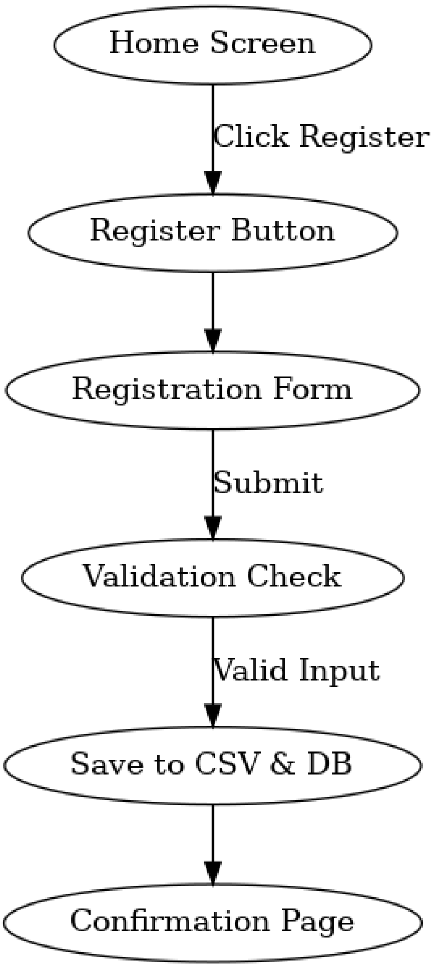
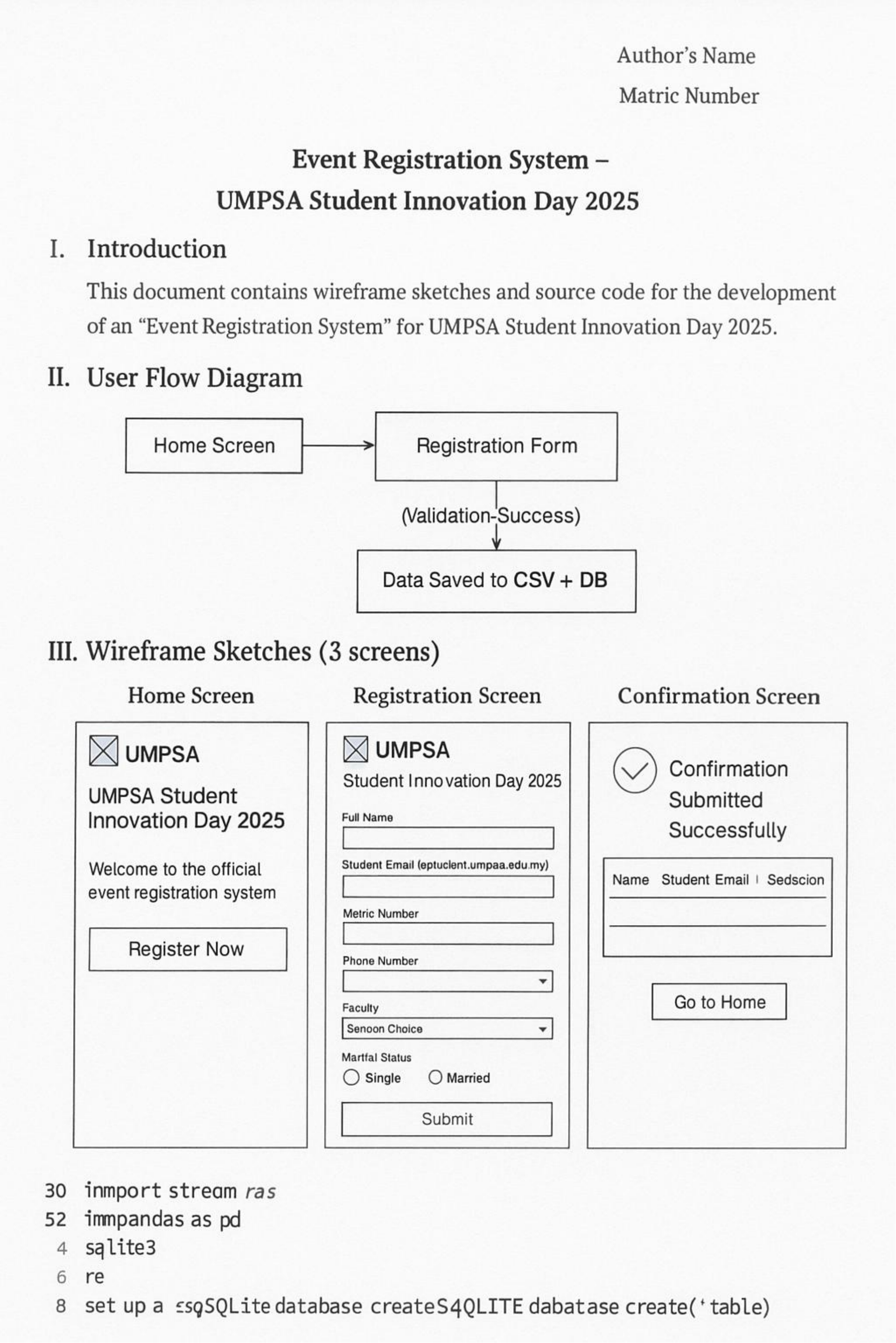


Figure 1: User Flow Diagram ofUMPSA Student Innovation Day 2025

3. WIREFRAMES



Author’s Name

Matric Number

Event Registration System –
UMPSA Student Innovation Day 2025

I. Introduction

This document contains wireframe sketches and source code for the development of an “Event Registration System” for UMPSA Student Innovation Day 2025.

II. User Flow Diagram

Home Screen
Registration Form
(Validation-Success)
Data Saved to CSV + DB

III. Wireframe Sketches (3 screens)

Home Screen
UMPSA
UMPSA Student Innovation Day 2025
Welcome to the official event registration system
Register Now
Registration Screen
UMPSA
Student Innovation Day 2025
Full Name
Student Email (eptuclent.umpaa.edu.my)
Metric Number
Phone Number
Faculty
Senoon Choice
Martfal Status
○ Single
○ Married
Submit
Confirmation Screen
Confirmation Submitted Successfully
Name
Student Email
Sedscion
Go to Home

```
inmport stream ras
immpandas as pd
sqlite3
re
set up a ≤sqSQLite database createS4QLITE dabatase create('table)
```

Figure 2: Wireframes Sketches of the App Interface

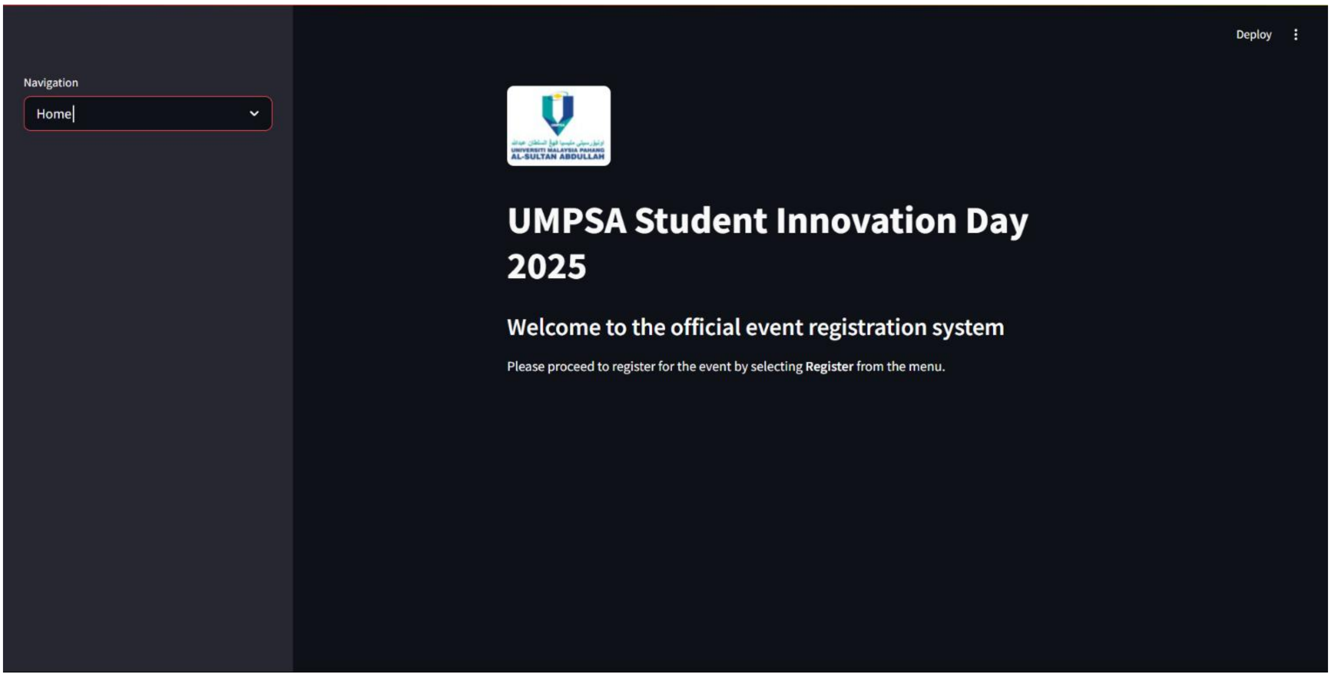
4. SOURCE CODE

Table 1: UMPSA Student Innovation Day 2025 App – Full Source Code

```
import streamlit as st
import pandas as pd
import sqlite3
import re

# Database setup
conn = sqlite3.connect('umpsa_registration.db')
cursor = conn.cursor()
cursor.execute('''CREATE TABLE IF NOT EXISTS registrations (
    name TEXT, email TEXT, matric TEXT, phone TEXT,
    faculty TEXT, session TEXT, marital_status TEXT)''')
conn.commit()

# Save to CSV
def save_to_csv(data):
    df = pd.DataFrame([data])
    df.to_csv('umpsa_registrations.csv', mode='a', header=False, index=False)

# Save to DB
def save_to_db(data):
    cursor.execute("INSERT INTO registrations VALUES (?, ?, ?, ?, ?, ?, ?)", tuple(data.values()))
    conn.commit()

# Validators
def is_valid_email(email):
    return re.match(r"[^@]+@student\.umpsa\.edu\.my", email)

def is_valid_phone(phone):
    return phone.isdigit() and len(phone) >= 10

# UI
st.set_page_config(page_title="UMPSA Event Registration", layout="centered")
```

```
page = st.sidebar.selectbox("Navigation", ["Home", "Register", "Confirmation"])

if page == "Home":
    st.image("UMPSAlogo.jpg", width=120)
    st.title("UMPSA Student Innovation Day 2025")
    st.subheader("Welcome to the official event registration system")
    st.write("Please proceed to register for the event by selecting **Register** from the menu.")

elif page == "Register":
    st.header("Registration Form - UMPSA Student Innovation Day 2025")
    with st.form("reg_form"):
        name = st.text_input("Full Name")
        email = st.text_input("Student Email (@student.umpsa.edu.my)")
        matric = st.text_input("Matric Number")
        phone = st.text_input("Phone Number")
        faculty = st.selectbox("Faculty", ["FTKEE", "FTKMA", "FKEKK", "FTKA", "FIM", "Other"])
        session = st.selectbox("Session", ["Morning", "Afternoon"])
        marital_status = st.radio("Marital Status", ["Single", "Married"])
        submit = st.form_submit_button("Submit")

        if submit:
            if not all([name, email, matric, phone]):
                st.error("Please fill in all required fields.")
            elif not is_valid_email(email):
                st.error("Email must be a valid UMPSA student email.")
            elif not is_valid_phone(phone):
                st.error("Invalid phone number.")
            else:
                data = {
                    "name": name,
                    "email": email,
                    "matric": matric,
                    "phone": phone,
                    "faculty": faculty,
                    "session": session,
                    "marital_status": marital_status
                }
                save_to_csv(data)
                save_to_db(data)
                st.success("Registration submitted successfully!")
                st.info("Please proceed to the Confirmation tab to view your submission.")

elif page == "Confirmation":
    st.header("Confirmation")
    try:
        df = pd.read_csv("umpsa_registrations.csv", header=None,
                         names=["Name", "Email", "Matric", "Phone", "Faculty", "Session", "Marital Status"])
        st.success("Here is your submitted information:")
        st.dataframe(df.tail(1))
    except FileNotFoundError:
        st.warning("No registration data found.")
```

5. SCREENSHOTS

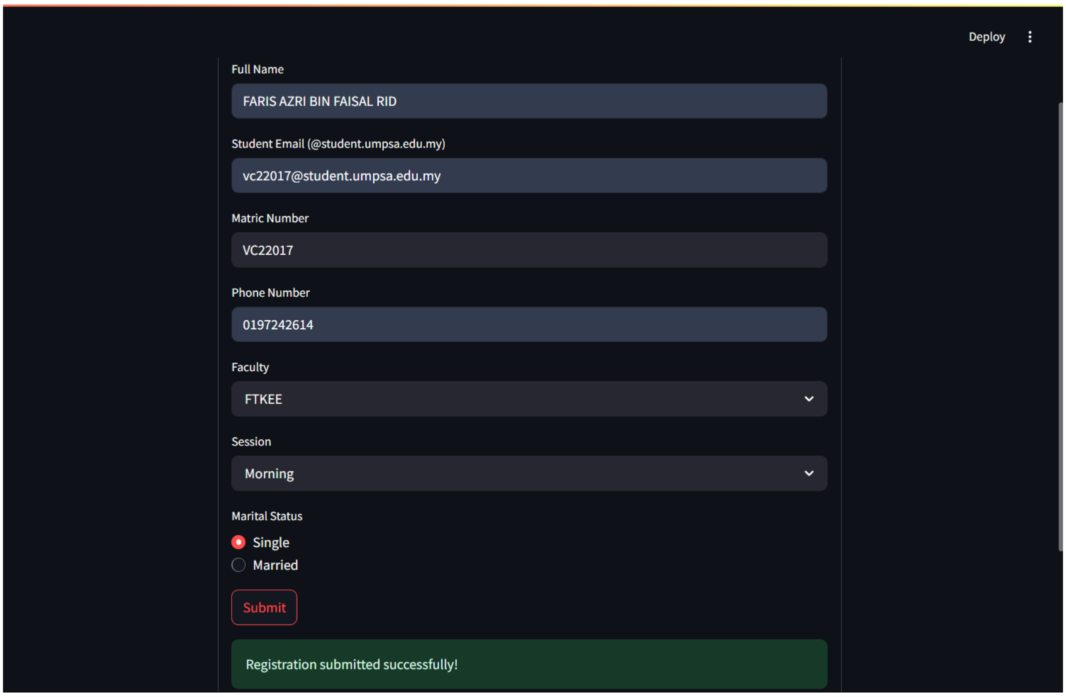


UMPSA Student Innovation Day 2025

Welcome to the official event registration system

Please proceed to register for the event by selecting **Register** from the menu.

Figure 3: Screenshot of The Home Page



Full Name: FARIS AZRI BIN FAISAL RID

Student Email (@student.umpsa.edu.my): vc22017@student.umpsa.edu.my

Matric Number: VC22017

Phone Number: 0197242614

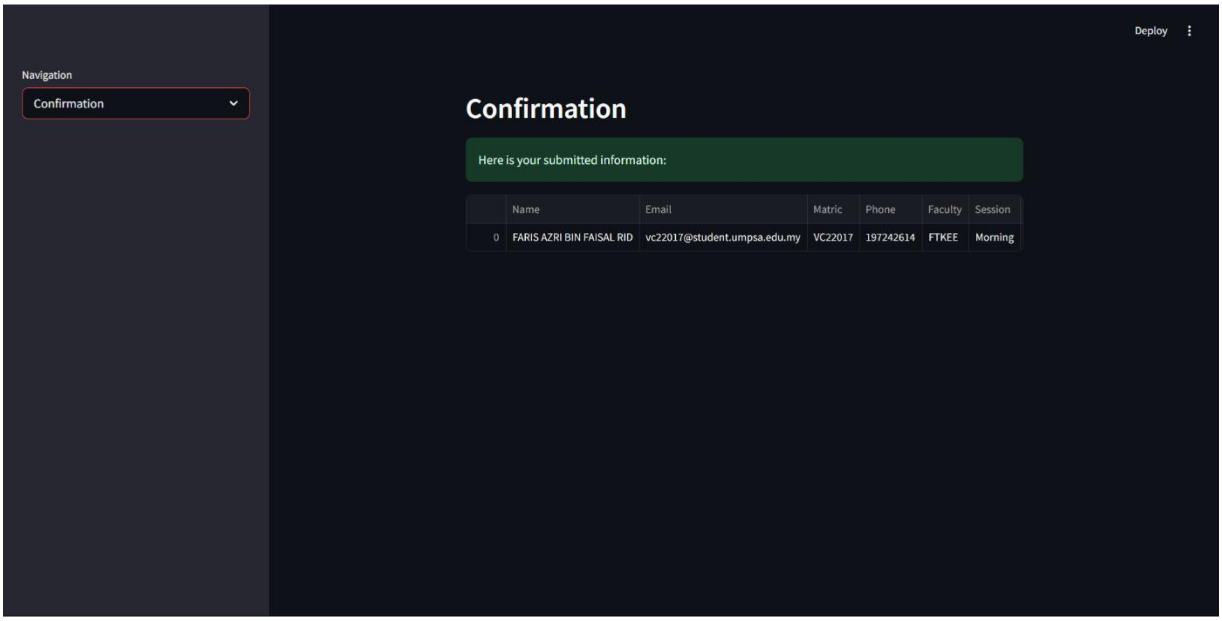
Faculty: FTKEE

Session: Morning

Marital Status
● Single
○ Married

Registration submitted successfully!

Figure 4: Screenshot of The Running Application and Confirmation of Saved Data 1

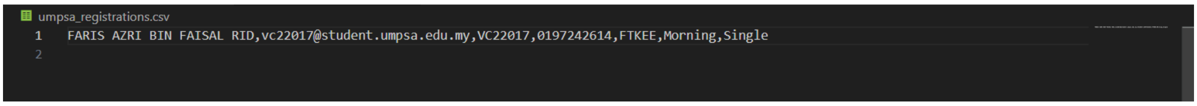


Confirmation

Here is your submitted information:

	Name	Email	Matric	Phone	Faculty	Session
0	FARIS AZRI BIN FAISAL RID	vc22017@student.umpsa.edu.my	VC22017	197242614	FTKEE	Morning

Figure 5: Screenshot of The Running Application and Confirmation of Saved Data 2



```
FARIS AZRI BIN FAISAL RID,vc22017@student.umpsa.edu.my,VC22017,0197242614,FTKEE,Morning,Single
```

Figure 6: Screenshot of CSV Table

6. CONCLUSION

This project allowed me to create a functional and interactive **Event Registration System** tailored for the *UMPSA Student Innovation Day 2025*. Developed using Streamlit and Python, the system enables students to sign up efficiently through a structured online form. To ensure data integrity, all inputs undergo validation before being saved.

The application successfully stores participant data in both a **CSV file** and a **SQLite database**, enabling reliable data tracking for future reference. Through this development process, I enhanced my technical skills in web interface design, data validation logic, and backend storage integration.

Overall, this assignment deepened my understanding of how user input systems are structured in real-world applications. It also helped me appreciate the importance of ensuring user-friendly interaction while maintaining data consistency — all of which are essential for building practical systems within an academic environment like UMPSA.