Full Deployment Guide: Clone GitHub Project and Run on Raspberry Pi

Prerequisites

Make sure you have:

- Raspberry Pi OS installed (or another Debian-based Linux)

- Internet connection

- Your project uploaded to GitHub

- Access to the Raspberry Pi terminal

**1. Install Required Packages**

Open a terminal and run:

sudo apt update

sudo apt upgrade -y

Install Apache, PHP, MariaDB, and Git:

sudo apt install apache2 -y

sudo apt install php php-mysql -y

sudo apt install mariadb-server -y

sudo apt install git -y

**2. Clone Your GitHub Project**

Navigate to the Apache web root:

cd /var/www/html

sudo rm index.html # Remove default Apache welcome page

Clone your repository (replace with your actual URL):

sudo git clone https://github.com/your-username/your-repo.git

Move the project files into the web root:

sudo mv your-repo/\* .

sudo rm -r your-repo

**3. Set Up the Database**

Start MariaDB:

sudo service mysql start

Enter the MariaDB shell:

sudo mysql

Create a new database:

CREATE DATABASE your\_database\_name;

EXIT;

Import your SQL file:

sudo mysql your\_database\_name < /var/www/html/database.sql

**4. Update PHP Database Configuration**

Update your PHP config (e.g., config.php):

$host = 'localhost';

$dbname = 'your\_database\_name';

$user = 'root';

$pass = '';

**Fixing Access Denied Errors (if needed)**

If you get:

SQLSTATE[HY000] [1698] Access denied for user 'root'@'localhost'

Run:

sudo mysql

ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql\_native\_password BY '';

FLUSH PRIVILEGES;

EXIT;

**5. Access Your Web Application**

In browser, go to:

http://<your-raspberry-pi-ip>

Example:

http://192.168.1.100

To find IP:

hostname -I

Optional: Fix Permissions

sudo chown -R www-data:www-data /var/www/html

sudo chmod -R 755 /var/www/html

**Network Issue: Unable to Connect to TKU Wi-Fi**

We found our Raspberry Pi could not connect to TKU Wi-Fi. We can’t find out the reason.

Temporary Solution:

We used a private hotspot or home Wi-Fi to continue development.

To switch Wi-Fi:

sudo raspi-config

Go to: 1 System Options → S1 Wireless LAN

How to Connect Raspberry Pi to TKU Wi-Fi or Personal Hotspot

**Option 1: TKU Wi-Fi (WPA2 Enterprise)**

Edit the config file:

sudo nano /etc/wpa\_supplicant/wpa\_supplicant.conf

Add:

network={

ssid="tku\_wifi"

key\_mgmt=WPA-EAP

eap=PEAP

identity="your\_student\_id"

password="your\_password"

phase2="auth=MSCHAPV2"

}

Restart Wi-Fi:

sudo wpa\_cli -i wlan0 reconfigure

Check IP:

ifconfig wlan0

**Option 2: Personal Hotspot**

1. Turn on phone hotspot

2. Run: sudo raspi-config

3. Go to: 1 System Options → S1 Wireless LAN

4. Enter SSID and password

5. Test with: ping google.com