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Lab 2

Internet of Things

Application Based Internet of Things Report

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1 Introduction

1.1 About the application

The assigment asked to build a simple Android application using Unity. The application will

- Display data collected from sensors and sent to an IoT broker.
- Control various physical devices by sending messages to the IoT broker.

The messages are exchanged between the Android application and the broker via the MQTT protocol.

1.2 Useful links

Source code online repository (Github):

https://github.com/thanhtoan1742/Coneveth

Android application package (APK):

https://github.com/thanhtoan1742/Coneveth/tree/main/moblile/Out

Video demo:

videolinkhere

Video demo on real Android device:

videolinkhere

2 Application

2.1 Login

When user first open the application, they will be greeted with a login screen. There are 3 input box for user to input their broker URI, username and password. After inputing the information and press the connect button, if the application can connect to the broker, the application will switch to its dashboad otherwise it will switch to its error screen.

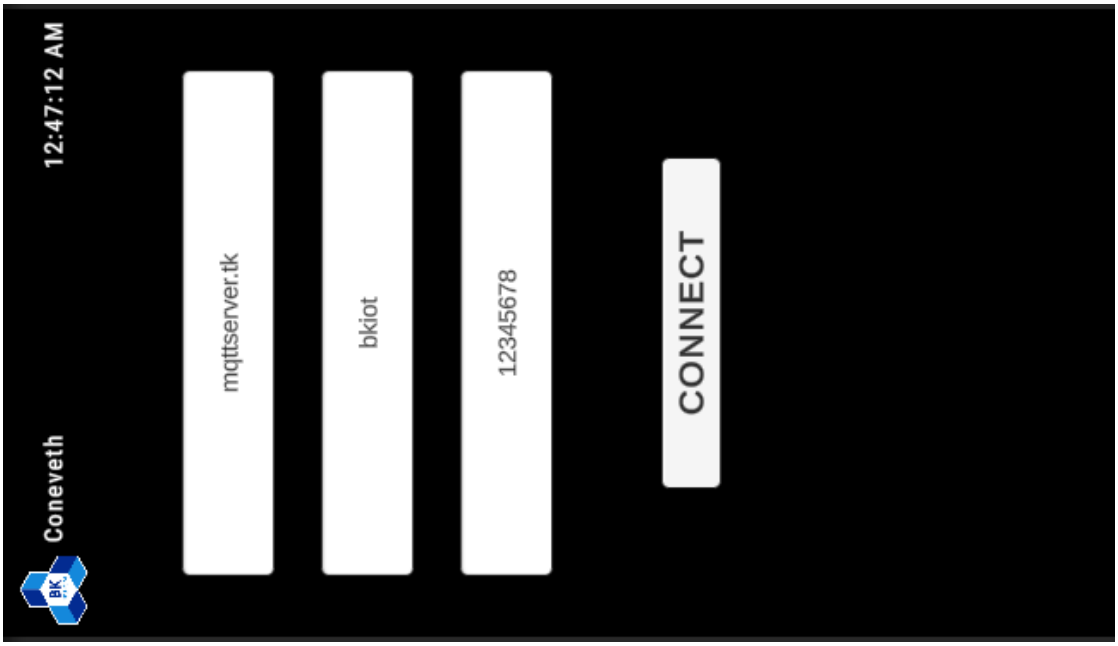

Figure 1: Login screen

2.2 Login Error

This screen let you know that there is something wrong with your input. Press back button to go back to login screen.

Figure 2: Login error screen

2.3 Dashboard

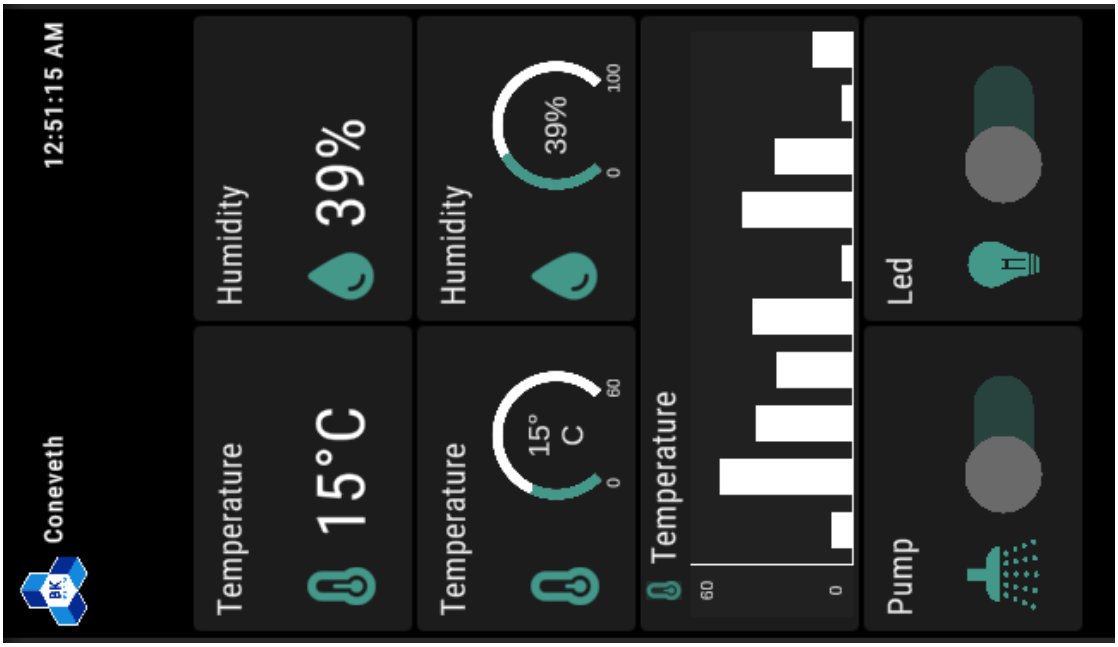

Figure 3: Dashboard screen

The dashboard screen offers information that sensors collected and control over physical devices. In this particular case, the dashboard has:

- Temperature card: simple card the shows the exact value of temperature.
- Humidity card: simple card the shows the exact value of humidity.
- Temperature gauge: a gauge show temperature value and how the temperature is compared to the minimum and maximum value.
- Humidity gauge: a gauge show humidity value and how the humidity is compared to the minimum and maximum value.
- Temperature bar chart: a bar chart that show 10 most recent collected temperature values.
- Pump switch: a simple toggle switch to show the status of the pump and toggle the pump.
- Led switch: a simple toggle switch to show the status of the led and toggle the led.

References