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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEER



Application Based Internet of Things Report - LAB 2B

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HỒ CHÍ MINH CITY

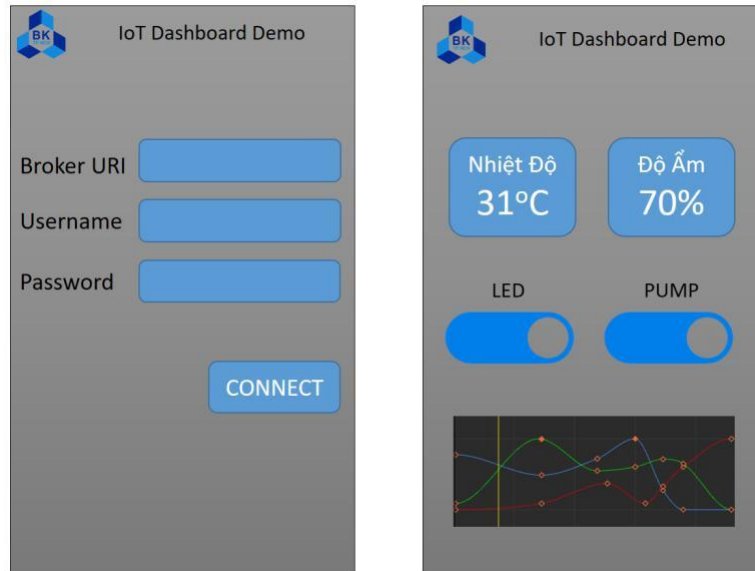


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1 Introduction

In this second LAB, students are proposed to create a simple dashboard using Unity 3D editor. Basically, the dashboard has 2 screens (GUIs), as depicted following:



Hình 1: Software mockup GUI

The source code of the second LAB is also required to publish in your Github. The details are described in the next section of this report.

2 Requirements

2.1 Screen 1

There are 3 input fields, including the broker of the server, username and password. Using Thingsboard server, the broker should be demo.thingsboard.io, the username is your access to-ken and the password is empty.

The values of these fields can be set by default (in the design phase, by setting the text property of the input component).

When the CONNECT button is pressed, the app will connect to the server. If there is an error, a simple textview can be used to display this error. Otherwise, the second UI is launched.

The testing account for this app bkiot and 12345678 for the username and password. The broker URI is mqttserver.tk. The default port is 1883.

2.2 Screen 2

The app needs to subscribe to the following topic

`/bkiot/STUDENT_ID/status`

in order to receive the current values of sensors (e.g. temperature and humidity) and update these values on textviews. Students can change the information according to their use cases. However, at least 2 different information of the sensors are required.

Two toggle buttons are required to controll two different devices (e.g. a simple LED or a PUMP). When the button is clicked, the data is published to

`/bkiot/STUDENT_ID/led`

for the LED and

`/bkiot/STUDENT_ID/pump`

for the PUMP.

The data for each button is a json string, described as follow:

- {"device":"LED","status":"ON"}
- {"device":"PUMP","status":"OFF"}

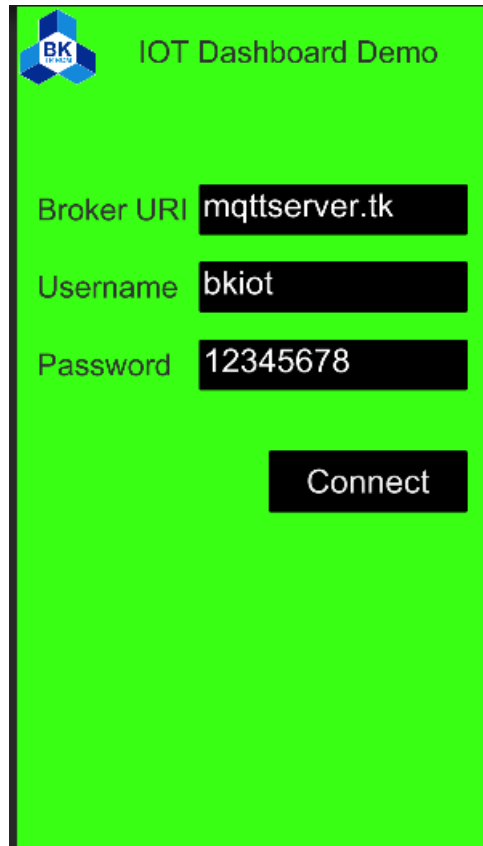
2.3 Advance UI elements

The end of the second is an example of an advance eleement in Unity3D. It can be a graph, a gauge or a map. This part is the extra point in this lab.

3 Report

3.1 Screen 1

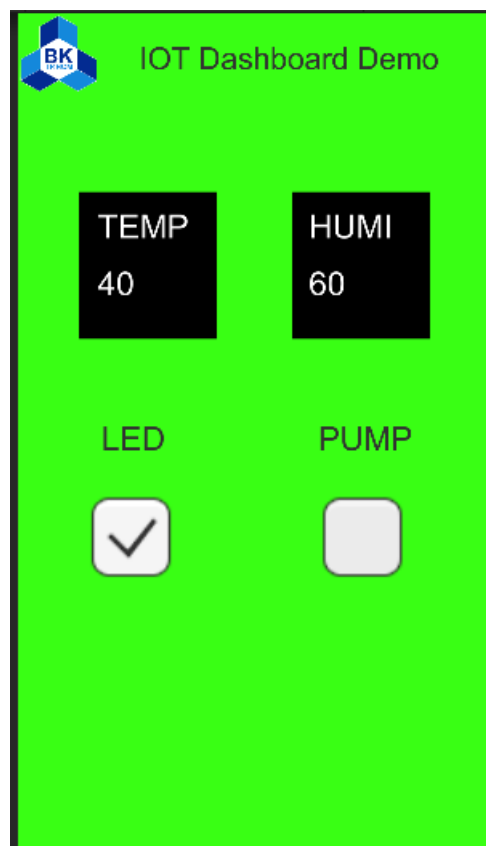
Students are proposed to capture the first screen and place it in this report.



The image shows a login screen for an 'IOT Dashboard Demo'. At the top left is a logo with the letters 'BK' inside a blue hexagon. To the right of the logo, the text 'IOT Dashboard Demo' is displayed. Below this, there are three input fields: 'Broker URI' with the value 'mqttserver.tk', 'Username' with the value 'bkiot', and 'Password' with the value '12345678'. A blue 'Connect' button is located at the bottom right of the form area.

3.2 Screen 2

Students are proposed to capture the second screen and place it in this report.



The image shows the main screen of the 'IOT Dashboard Demo'. At the top left is the same 'BK' logo. To the right, the text 'IOT Dashboard Demo' is displayed. The screen features four data cards arranged in a 2x2 grid. The top-left card is labeled 'TEMP' and shows a value of '40'. The top-right card is labeled 'HUMI' and shows a value of '60'. The bottom-left card is labeled 'LED' and contains a green square button with a white checkmark. The bottom-right card is labeled 'PUMP' and contains a grey square button.



3.3 Github link

<https://github.com/anhductran9/CO3037-CC01-1852330.git>

4 Demo point

There is a session for live demo. A short meeting for each student will be taken place at google meet. The schedule for this meeting will be available soon.