CMPE-277: Smartphone Application

HW 3 - Farm IoT App (Broadcast Receiver)

Submitted To

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Submitted By

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Learning Objective:

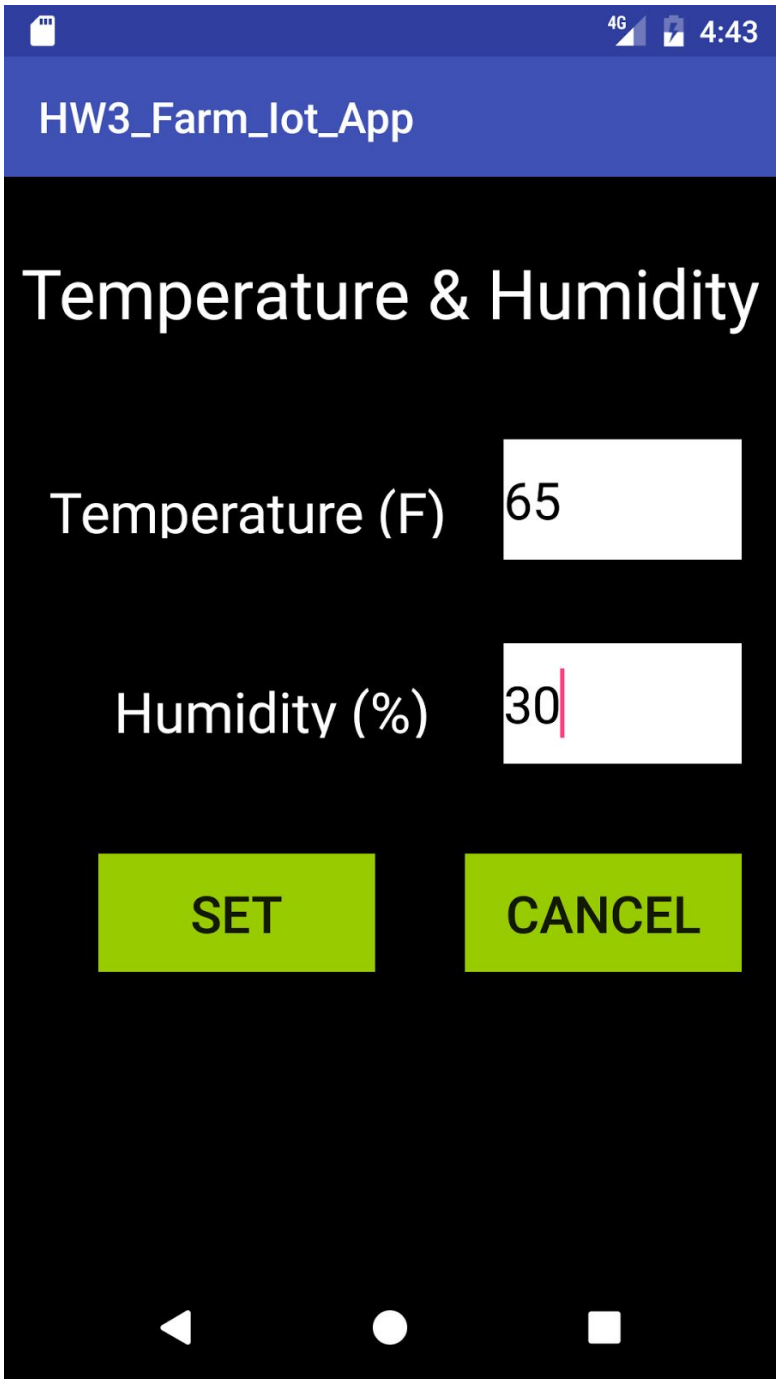
Learning Objective: the goal of the assignment is to apply broadcast receiver to send and receive data between activities.

GitHub:

1. Temperature & Humidity App: https://github.com/stephen-sh-chen/CMPE277_Smartphone_App/tree/master/HW3_Farm_Iot_App
2. Farm Manager App: https://github.com/stephen-sh-chen/CMPE277_Smartphone_App/tree/master/HW3_Farm_Iot_Manager
3. Farm Maintenance App: https://github.com/stephen-sh-chen/CMPE277_Smartphone_App/tree/master/HW3_Farm_Iot_Automate

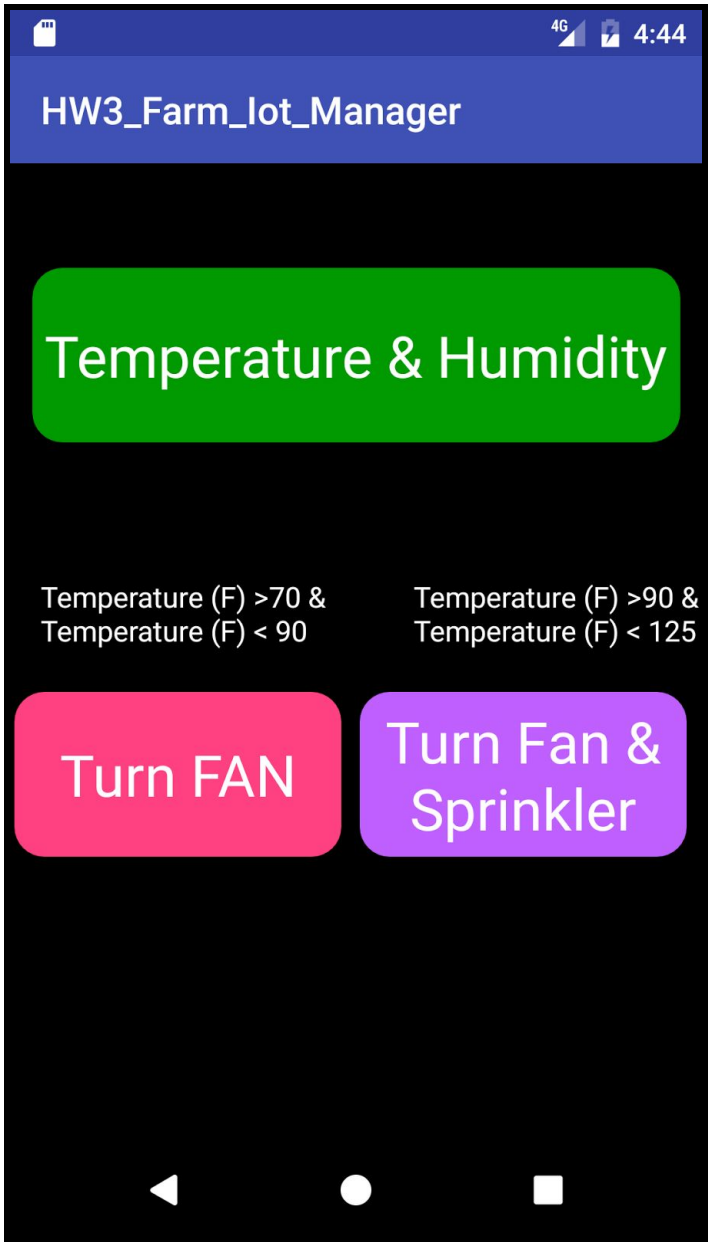
1. Temperature & Humidity App

In the first App, Temperature & Humidity App, users can simulate the temperature and humidity by just entering the both value in the text field. Once the “Set” button click, the both values will be packed into an “Intent” then broadcast out by the signature I pre-defined “com.sjsu.cmpe277.intent.TempHumidity”.



2. Farm Manager App

In the second APP, Farm Manager App, there is the main place to put the logic which determine when turn ON/OFF the fan and sprinkler. In more detail, this app will receive the temperature and humidity created from the first “Temperature & Humidity App”, then according the received values to control the fan and sprinkler states. If the temperature < 70, both fan and sprinkler will be disable. If the temperature > 70 but < 90, only fan will be enable. If the temperature > 90, both fan and sprinkler will be activated. Besides, user also can click the two buttons “Turn Fan” and “Turn Fan and Sprinkler” to disable them manually.



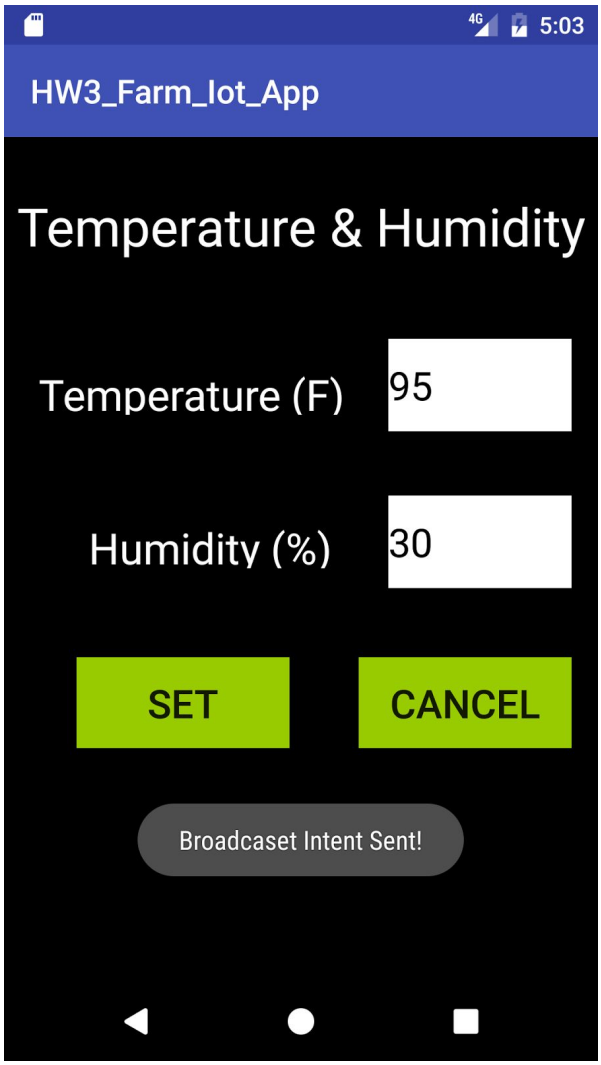
3. Farm Maintenance App

In the third App, Farm Maintenance App, the main responsibility is to physically control the Fan and Sprinkler then show the current real time status of Fan and Sprinkler. In the code, there are 4 intent receiver will be filtered.

Intent Filter Event	Action
“com.sjsu.cmpe277.intent.FANON”	Turn on the fan
“com.sjsu.cmpe277.intent.FANSPRINKLERON”	Turn on both the fan and sprinkler
“com.sjsu.cmpe277.intent.FANOFF”	Turn off the fan
“com.sjsu.cmpe277.intent.FANSPRINKLEROFF”	TUrn off both the fan and sprinkler

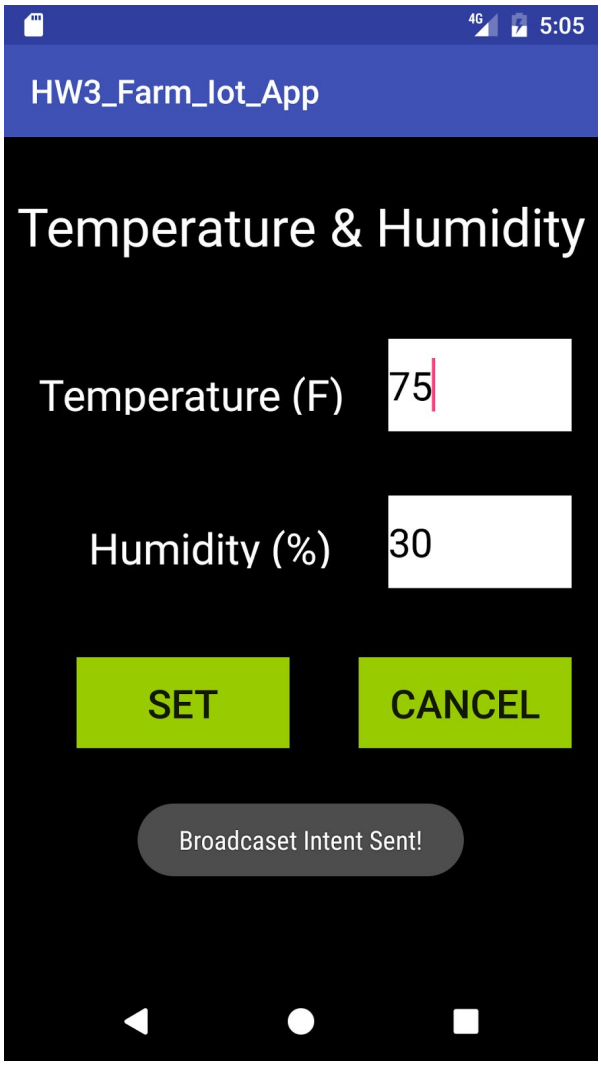
4. Scenario 1: Temperature greater than 90.

When user input the temperature which is greater than 90, both the fan and sprinkler will be turned on automatically.



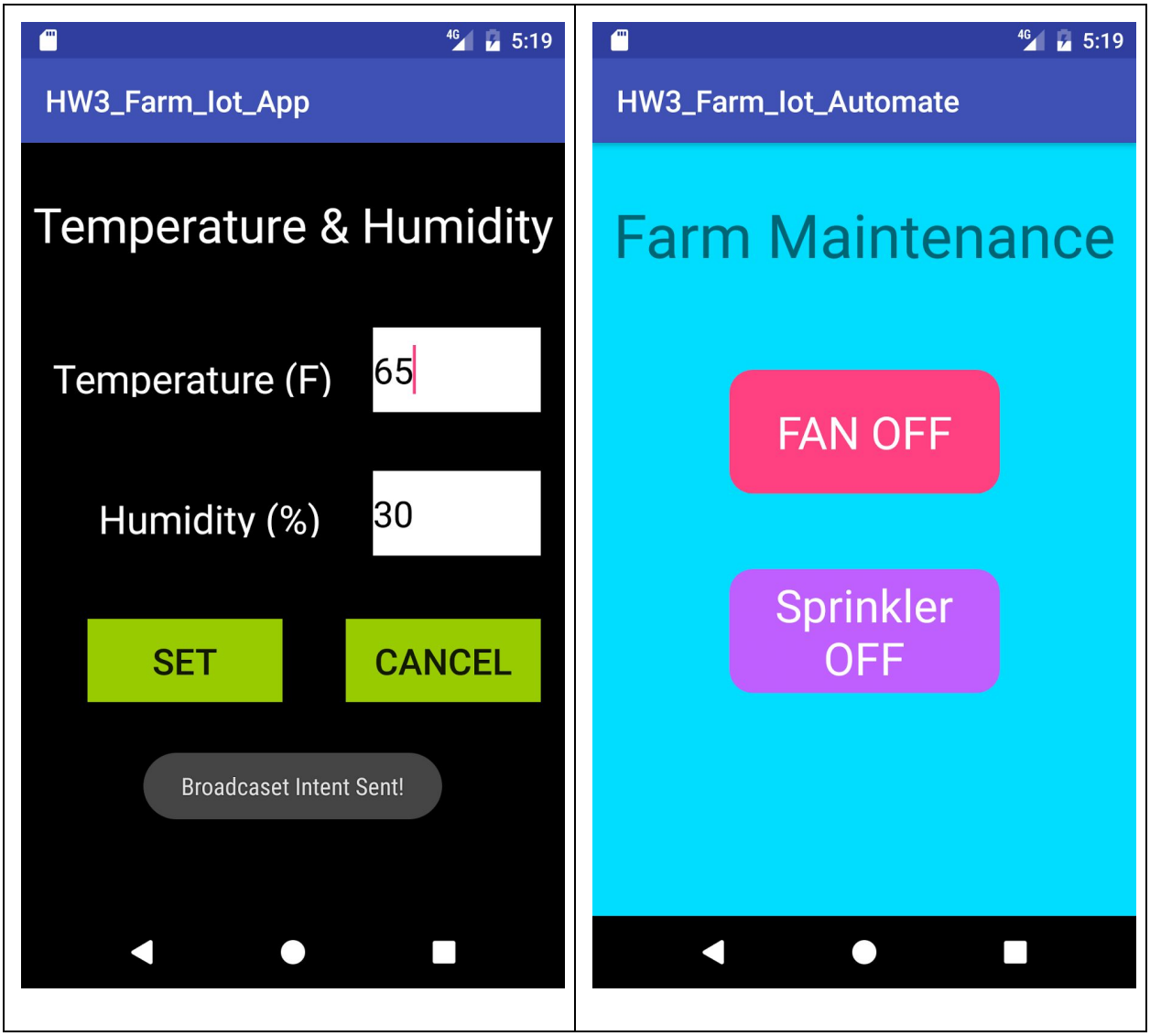
5. Scenario 2: Temperature between 70 to 90

When user input the temperature which is in the range 70 to 90, only the fan will be turned on automatically.



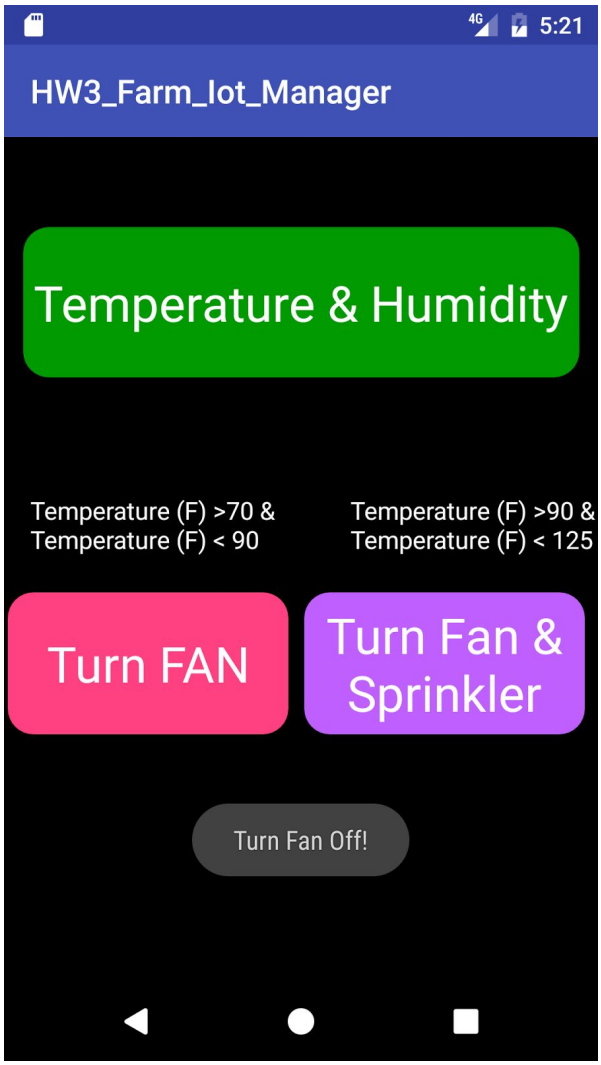
5. Scenario 3: Temperature lower than 70

When user input the temperature which is lower than 70, both the fan and sprinkler will be turned off automatically.



6. Scenario 4: Disable Fan Manually

User can click the “Turn FAN” button to disable manually.



7. Scenario 5: Disable Fan and Sprinkler Manually

User can click the “Turn FAN & Sprinkler” button to disable the Fan and the Sprinkler manually.