



CMPE-277: Smartphone Application

HW 4 - TH Sensor Driver Using Async Task

Submitted To

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Learning Objective:

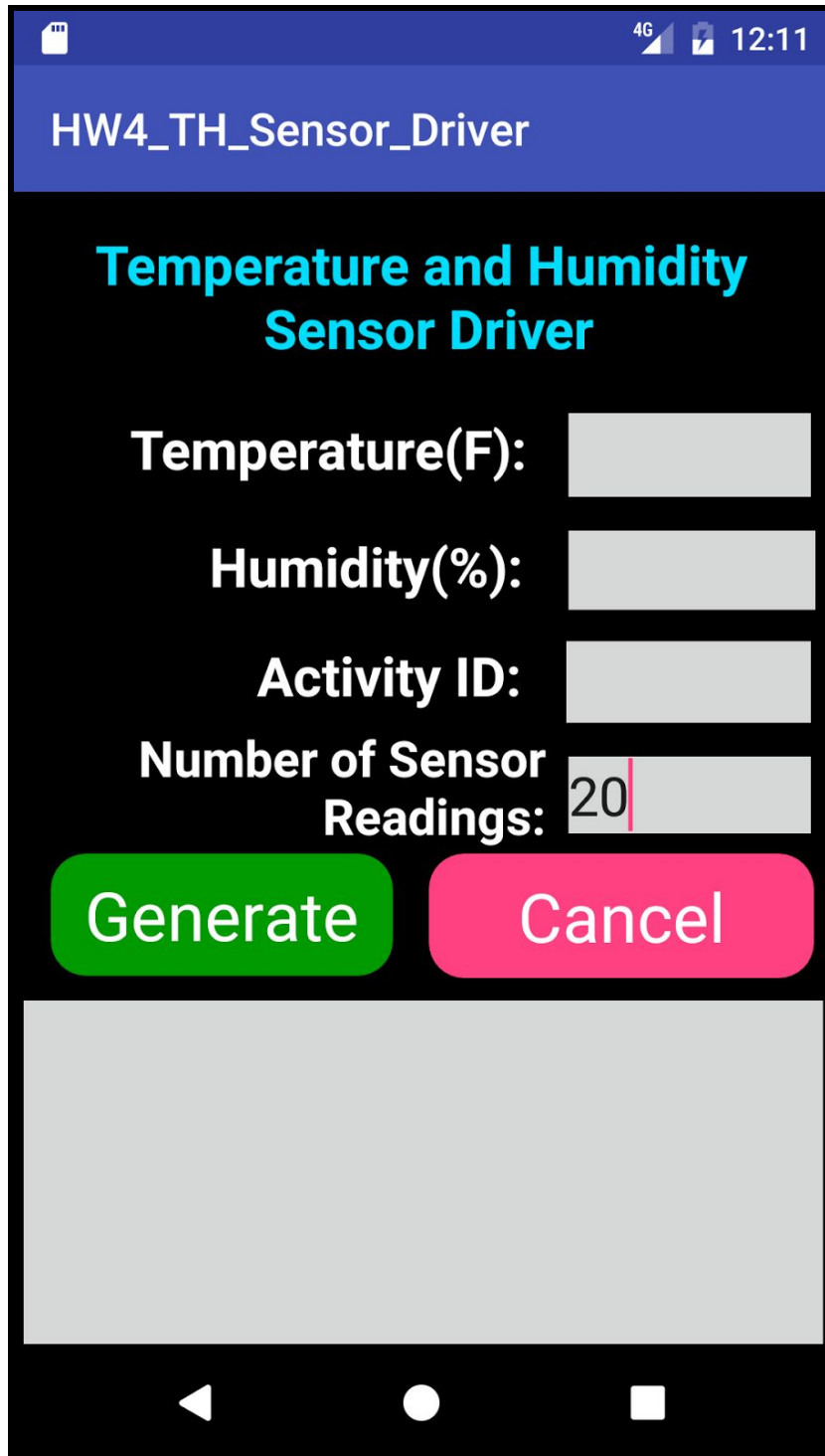
Using Async Task one can run tasks that take longer than five seconds in the context of UI. The objective of the assignment is to generate sensor readings in the UI Thread context and update UI for each reading.

GitHub:

https://github.com/stephen-sh-chen/CMPE277_Smartphone_App/tree/master/HW4_TH_Sensor_Driver

1. Temperature & Humidity Sensor Layout

Once user launch the APP, the first thing is to enter a number in the “Number of Sensor Reading” field to indicate this APP how many simulation result to be generated.



The screenshot shows a mobile application interface for "HW4_TH_Sensor_Driver". The title bar is blue with the text "HW4_TH_Sensor_Driver". Below the title bar, the main content area has a black background with cyan text "Temperature and Humidity Sensor Driver". There are four input fields: "Temperature(F):", "Humidity(%)", "Activity ID:", and "Number of Sensor Readings:". The "Number of Sensor Readings:" field contains the value "20". Below the input fields are two buttons: a green "Generate" button and a pink "Cancel" button. At the bottom of the screen is a large gray rectangular area, likely a placeholder for sensor data or a graph. The Android navigation bar is visible at the very bottom.

HW4_TH_Sensor_Driver

Temperature and Humidity
Sensor Driver

Temperature(F):

Humidity(%):

Activity ID:

Number of Sensor
Readings: 20

Generate Cancel

2. Generate Data

For example, if we want this to generate 20 results, we enter 20 in the “Number of Sensor Reading” field and click enter the “Generate” button.

The image displays two side-by-side screenshots of a mobile application titled "HW4_TH_Sensor_Driver".

Left Screenshot (12:11): The app is in the input phase. It features a title bar "HW4_TH_Sensor_Driver" and a subtitle "Temperature and Humidity Sensor Driver". Below the subtitle are four input fields: "Temperature(F):", "Humidity(%)", "Activity ID:", and "Number of Sensor Readings:". The "Number of Sensor Readings:" field contains the value "20". At the bottom are two buttons: "Generate" (green) and "Cancel" (pink).

Right Screenshot (12:17): The app is in the output phase. The input fields now contain generated values: "Temperature(F): 46", "Humidity(%) 12", and "Activity ID: 356". The "Number of Sensor Readings:" field contains "19". Below the input fields are the same "Generate" and "Cancel" buttons. At the bottom, there is a text area displaying "Output 1: Temperature: 46 F Humidity: 12 % Activity: 356" and a "Got Output 1" message in a grey bubble.

HW4_TH_Sensor_Driver

Temperature and Humidity
Sensor Driver

Temperature(F):

35

Humidity(%):

99

Activity ID:

901

Number of Sensor
Readings:

18

Generate

Cancel

Output 2:
Temperature: 35
Humidity: 99 %
Activity: 901

Got Output 2

HW4_TH_Sensor_Driver

Temperature and Humidity
Sensor Driver

Temperature(F):

3

Humidity(%):

5

Activity ID:

641

Number of Sensor
Readings:

17

Generate

Cancel

Output 3:
Temperature: 3
Humidity: 5 %
Activity: 641

Got Output 3

3. Cancel the Running Async Task

We can click the “Cancel” button to cancel the running task immediately before its completion.

