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## Temperature Humidity (TH) Sensor Driver Using Async Task

### 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.

### Solution:

I have created the below application. It takes number of readings from user and spawns the thread that number of times and display temperature, humidity and activity values in the text boxes.
I have kept sleep time of each thread as 2 seconds. Therefore task will take longer time in the context of UI. Hence, I have async task and created one thread from the main thread. Async task uses the below methods to perform various operations.

1. **OnPreExecute()** - This method is invoked on the UI thread and we can set any task in this method. I have started progress bar in this method. The progress bar will show task progress. Initially I have kept it 0.

2. **doInBarckgroung(Params…)** - This method is invoked on the background thread after onPreExecute() method. We are using this method for background computation. This method takes no of readings as parameter and random values of temperature , humidity and activity are generated. These values are generated based on the number of readings. After each set of reading this method invokes publishProgress() to publish the readings to the UI and update the progress bar with % of values generated.

3. **onProgressUpdate():** This method is invoked on the UI thread after call to publishProgress() method. This method will display all the values on the UI.

4. **onPostExecute(Result)**: This method will be invoked after the computation is completed.

## Screen 1

**AsyncTask**

**Temperature:**

**Humidity:**

**Activity:**

**No of senor readings:**

GENERATE    CANCEL

**Output:**

## Screen 2

**AsyncTask**

**Temperature:**

**Humidity:**

**Activity:**

**No of senor readings:**

GENERATE    CANCEL

**Output:**

| 1 | 2 | 3 | – |
| 4 | 5 | 6 | ␣ |
| 7 | 8 | 9 | ⌫ |
| , | 0 | . | ✓ |

## Screen 3

**AsyncTask**

**Temperature:**        94F

**Humidity:**        80%

**Activity:**        214

**No of senor readings:**        6

GENERATE    CANCEL

**Output:**

Output 1:
Temperature: 94F
Humidity :80%
Activity: 214

## Screen 4

**AsyncTask**

**Temperature:**        27F

**Humidity:**        48%

**Activity:**        194

**No of senor readings:**        6

GENERATE    CANCEL

**Output:**

Activity: 223

Output 3:
Temperature: 82F
Humidity :61%
Activity: 477

Output 4:
Temperature: 44F
Humidity :98%
Activity: 201