



# International Journal of Innovative Research in Computer and Communication Engineering

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## Android App for Temperature Count with Raspberry

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**ABSTRACT:** This paper describes the development of a wired Android application for temperature count system based on a microprocessor at a reasonable cost with great effect. Most temperature count systems that are in use in today's world works in offline mode but it is of great need that a system must be designed so that user can be count remotely in real time. The paper consists of sensors which measures temperature of a surrounded area which is controlled by the microprocessor. The readings are displayed in LCD monitor. Wired system is used to transmit the measured data to raspberry microprocessor. The temperature count sensor counts the temperature continually .the temperature sensor measures the temperature and stored the data into database with time and date are sent to the processor for transmission to receiving end. Finally, the data are displayed in the LCD at the receiving end.

**KEYWORDS:** algorithm; pseudo code; Liquid crystal display; Android Temperature count (ATC); analog digital

### I. INTRODUCTION

In today's world, the maximum use of resource is always complimented. So, the use of wired technology is enhanced to meet the need of remote control and count. (ATC) is a technology that enables us to use anywhere without having to visit any weather report channel. It may increase access to weather count and benefits to the user. Remote user can count weather saves time and money both, hence increasing efficiency and reliability of health services.

Temperature are the major signs that are routinely measured by weather counter after the arrival of a calamitously. Like count, normal temperature also varies from Mints to mints and changes throughout the day. The temperature is lowest in the early morning and highest in the early evening. The average temperature is 55.7°F **Annual high temperature: 64.8°F**. Annual low temperature: 46.6°F Average annual precipitation - rainfall: 40.78 inch Days per year with precipitation – rainfall 115 days

Thus, the normal range for temperature is 55 to 55.5 degrees Fahrenheit Temperature can be measured by using different types of sensors. These sensors come in different forms such as thermometer, anemometer and hygrometer. The temperature sensor requires analog to digital (A/D) converter so that the analog output voltage can be converted to digital form. The output of the temperature sensor is connected to the microprocessor raspberry pie 3. The microprocessor processes this data and displays it in LCD as well as sends it to the receiving end for displaying at the remote place. This paper describes the design of a very low-cost remote Temperature countsystem which measures temperature of a weather and sends the data to a Remote end where the data will be displayed user can know the actual reading. This device will be much needed during emergency period or for saving form natural calamities.



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**Stepwise procedure for project development:**

## 1. Flashing the Android Things image

Steps to flash the Android Things image onto the microSD card:

1. Download the Android Things Setup Utility from the Android Things Console. You will need to sign in to your Google account and accept the licensing agreement and terms of service.
2. Unzip the downloaded archive.
3. Start the setup utility.
4. Select the option to install Android Things
5. Insert the microSD card into the microSD slot on the underside of the Raspberry Pi.

## 1) 2. Connect the Hardware components.

## 2) 3. Preparing android Things development environment

1. Install android SDK on system
2. Set added libraries and home activities for android thing

## 3) 4. Burn the desired code on hardware kit.

## 5. Build and install

On Android Studio, click on the "Run" button. If you prefer to run on the command line, type

If you have everything set up correctly:

- The segment display will show the current temperature.
- If the button is pressed, the display will show the current pressure.
- If a Piezo Buzzer is connected, it will plays a funny sound on start-up.
- If a APA102 RGB Led strip is connected, it will display a rainbow of 7 pixels indicating the current pressure.
- If a Google Cloud Platform project is configured (see instruction below), it will publish the sensor data to Google CloudPub Sub.

### PSEUDO CODE

STEP 1.ADD DEFAULT JVMOPTIONS.

STEP 2. ATTEMPT TO SET APP\_HOME

STEP3.SET LOCAL SCOPE FOR THE VARIABLES.

STEP4.READ FROMSENSOR TEMPERATURE VALUE ARGUMENTS,

STEP 5.IF(READ SUCCESS)

{

//PROCESS DATA AND SEND RESULT TO STEP 5;



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STEP 6.ELSE

{

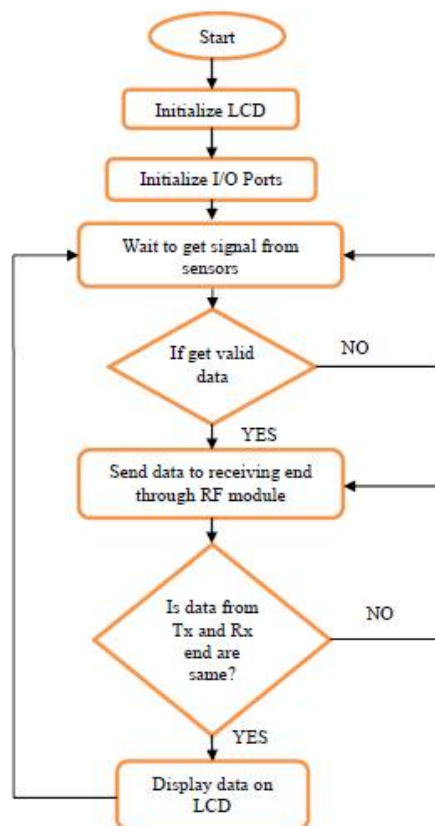
STEP 7.ACTIVATE BUZZER; SEND ERROR TO STEP 5;

}

STEP 8. READ DATA FROM STEP 4 AND SEND IT TO LCD DISPLAY

STEP 9. DISPLAY MESSAGE ON LCD DISPLAY

### 3. SYSTEM FLOW CHART



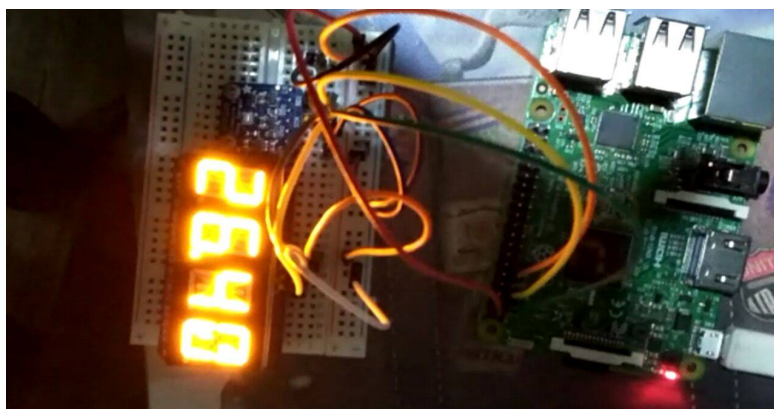
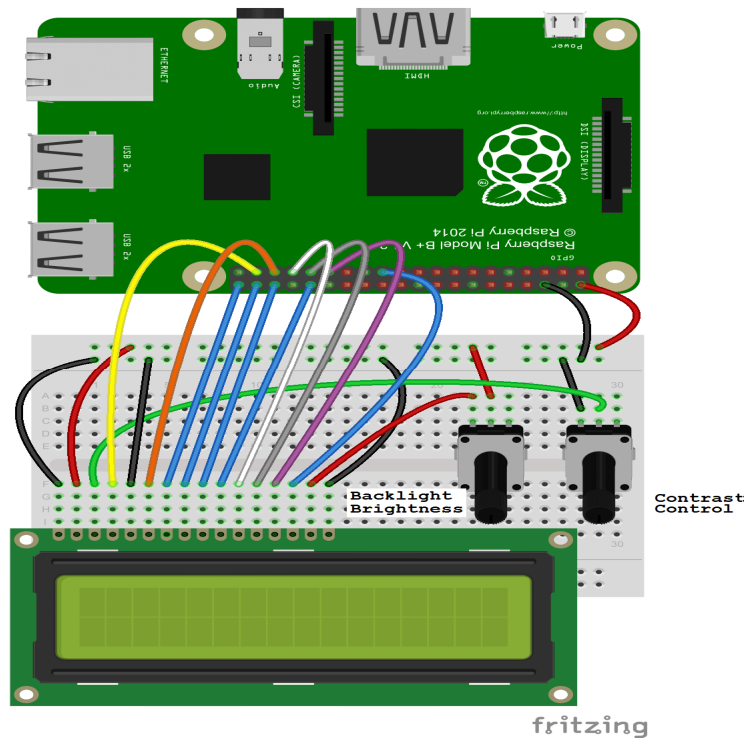
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## II. CIRCUIT IMPLEMENTATION



## III. CONCLUSION AND FUTURE WORK

The android thing enable to build next generation and embedded system it reduces the large upfront development costs and the risk inherent in getting your idea off the ground .in our project we use 1 bmp280 temperature sensor as a data collection device for android thing embedded board. The 1 bmp280 temperature sensor capture temperature value from atmosphere and send it to android thing board for data processing .for displaying result we uses 1 segment display with i2c backpack. This circuit continuously capture and process temperature data and gave simultaneously changing value of temperature on segment display with i2c backpack. This system is applied in applications where we need to



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keep track of temperature value over mil seconds such as enterprise data storage system. This system helps to protect form hazards that may occur due to irregular temperature in system.

In future we can develop this system using cloud or IOT platforms. Cloud or IOT platform enables user remote monitoring of temperature.to achieve remote monitoring system we use to achieve cloud storage to stored continuously changing temperature values from android thing. the latest additions of android things are come with built in support for google cloud.in future using combination of “**android app for temperature count with raspberry** “and cloud storage we can apply this system in over heated place or work condition where human can’t work directly such as underground temperature monitoring system.in such case we can apply android app for temperature count with raspberry.

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