



SMART WATCH

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Introduction

Problem Our project is a simple Smart Watch which will show time, date, day and can connect to your Android Smartphone through Bluetooth and will show your phone's notifications in two different modes which are normal notifications(e.g. turning Wi-Fi on or off) and emergency mode(e.g. low battery). There are total of 4 modes – Idle mode, Clock display mode, Normal notifications mode, Emergency notification mode. Clock will come to Idle mode after some time of inactivity. There is a button which will be used to switch between different modes.

System Overview

A block diagram of the system is given in Fig. 1.

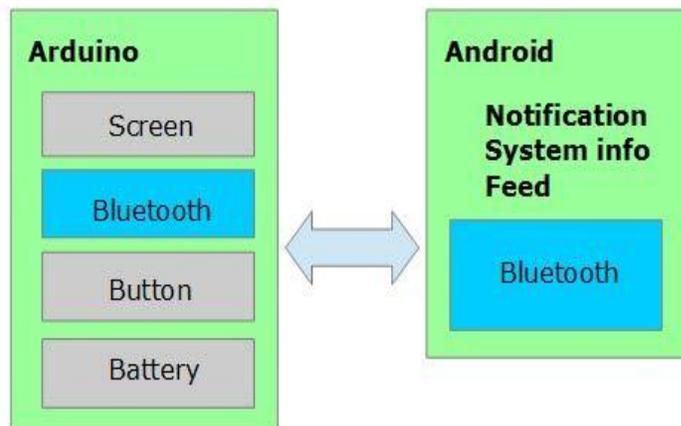
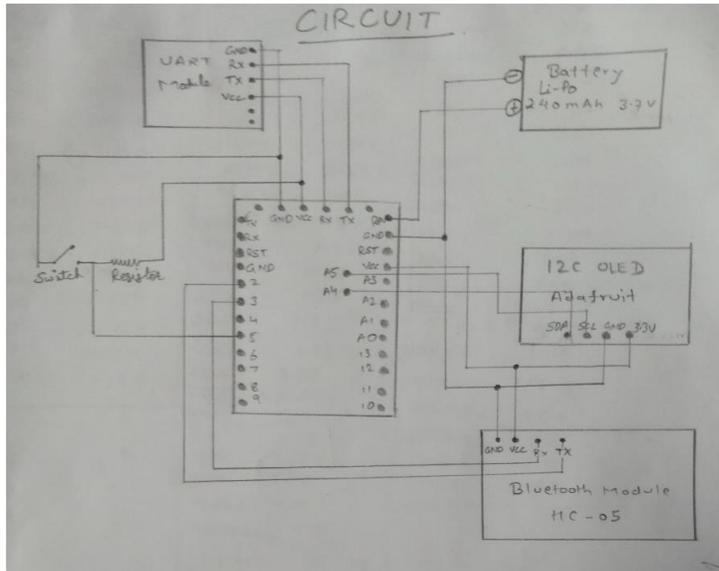


Fig. 1: Block Diagram of Project.

Our project has two main components – the circuit part and android app. The circuit part mainly consists of a mini Arduino, a HC-05 Bluetooth module, a 3.7V battery and an OLED display. We are using Arduino Pro Mini as it is small in size which is ideal for our watch. We are using a UART module for USB to Serial connection. The Bluetooth module is used for connection between Arduino and the phone. The function of button is switching between different modes which are described above. We are using a 3.7V Li-Po battery to power our Arduino as we are using Mini Arduino so it needs external power source and is has a small size. Screen we selected is a 0.96” OLED Display which works on lower power and it supports I2C and SPI which makes it easier to connect with the Arduino. All components chosen can work at an operating voltage of 3-5V.

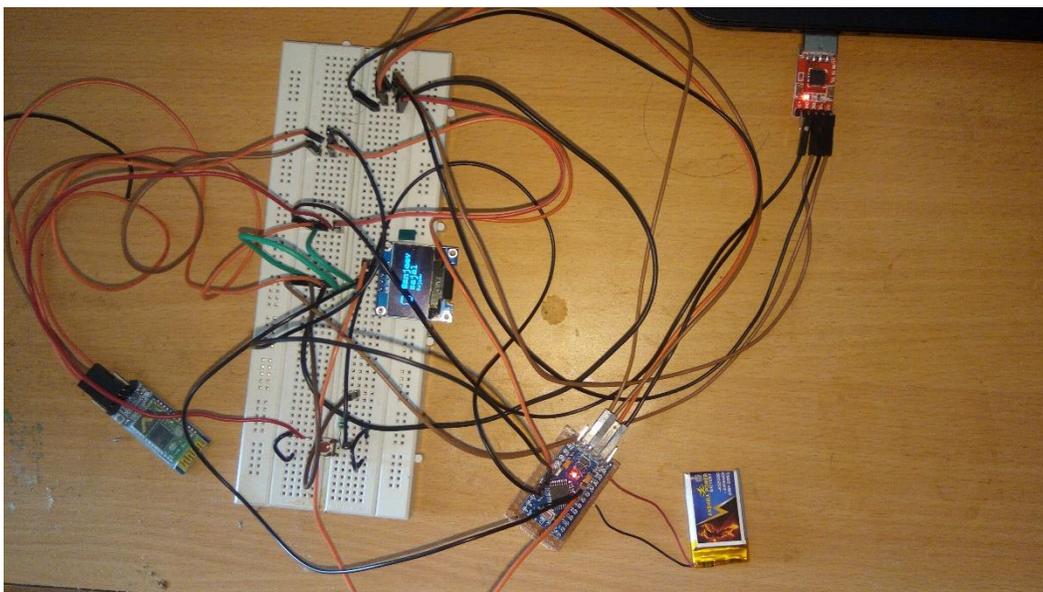
Implementation Details



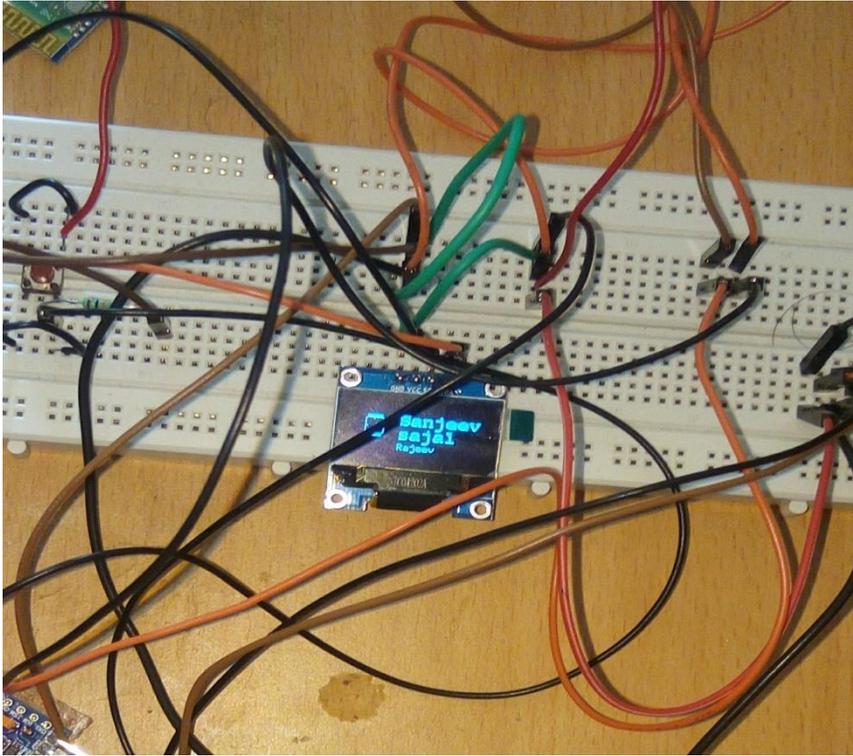
We have used a UART module to transfer our code to Arduino Pro Mini. We have used OLED display which uses SPI communication and we have fixed pins A4 for Serial Data (SDA) and A5 for Serial Clock (SCL) on our Arduino board. We are giving main power in RAW pin on Arduino board as Arduino contains a voltage regulator which will regulate the input given in RAW pin to the specified value. The display we have used supports English font and Image out option is also available. In place of switch we have used a simple push button. We will also be using a C-type pin to charge our battery from a phone adapter.

Results

Clock Circuit



Initial Output



Clock Display Mode

