HackFest ISM 2016

Project Abstract and Team Details

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Idea One: Digital IC Tester and Identifier

Problem statement:

Given an IC of 74xx series (digital ICs), we need to reckon its IC number, its detailed specification, data sheet as well as check whether all the gates are working properly.

Implementation Overview & Outcome:

The Idea is to code an input generator which will test a given IC for multiple inputs, and based on the output given by the IC, we can tell which gates are being used in the IC and what is the IC number, i.e. IC7400 (Quad NAND Gate) or IC7462 or any other IC belonging to 74xx series.

The code will also be able to judge if any of the gates in the given IC is faulty or not working at all. This will eradicate the fuss and doubt while realizing digital circuits in labs or for making prototypes.

Idea Two: BlowGlows

Problem Statement:

Build a birthday candle simulation using an LED matrix.

Implementation Overview & Outcome:

We plan to create an LED matrix with the whole setup connected to a pair of sensors (temperature and humidity). This matrix will be a simulation of candles on a birthday cake, and will respond to the blows. The implementation will be based on ranges of temperature and humidity variations around the sensors when the “candles” are blown.

Idea Three: BeatBot

Problem Statement:

Build an electronic setup capable of playing some music on an acoustic guitar.

Implementation Overview & Outcome:

Planning to design a robotic arm for the strumming, and for the chord choosing portion, we plan to build chord specific presses (different orientation for different chords), the combination of these two movements will produce the desired music. The input will be provided as a string of chords and strumming patterns.