Computer Engineering ISU
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Alarm Clock

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Description:

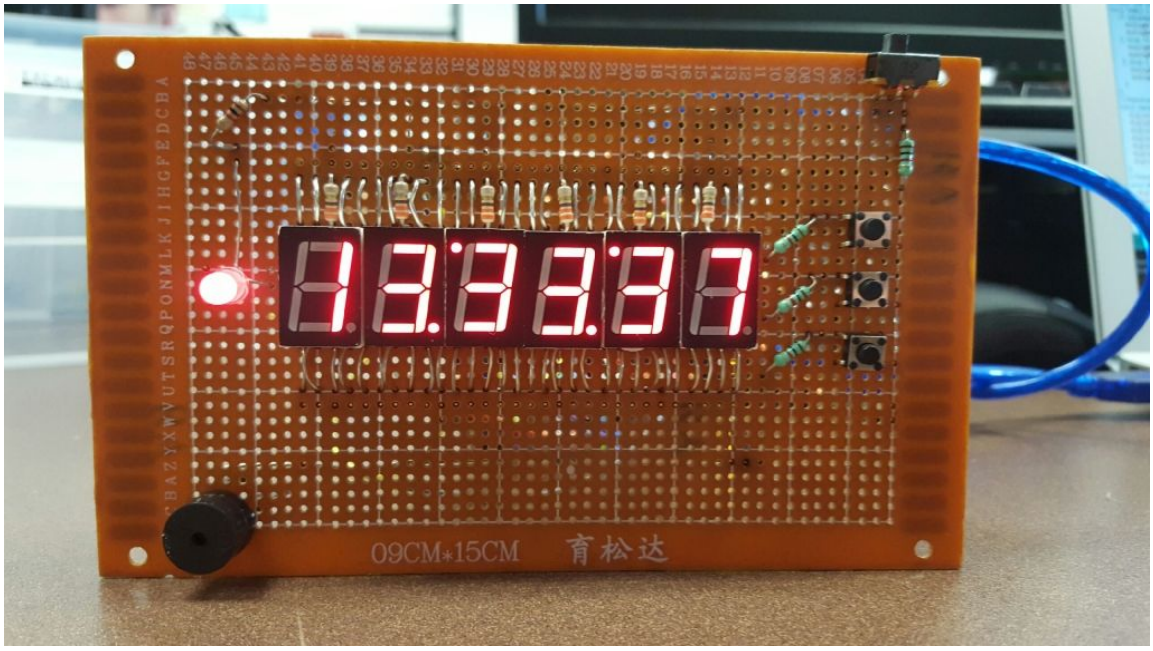
We have designed and created a fully functional alarm clock. This alarm clock displays the current time in the twenty four hour format. We used 6 seven segment displays to show hours, minutes and seconds, two of which are turned upside down so that we can use the points as separators. We used three buttons to set the hours, minutes and to toggle the alarm set mode. It tracks time correctly, the current time can be set, an alarm can be set, the alarm can be turned on and off, has a buzzer that sounds when the alarm goes off, and has a two colour LED to indicate what mode the clock is in. The LED will turn green if the alarm is being set, it will turn red if the alarm has been set and it is on, and the LED will stay off if the alarm is off and you are not setting the alarm time.

Part List:

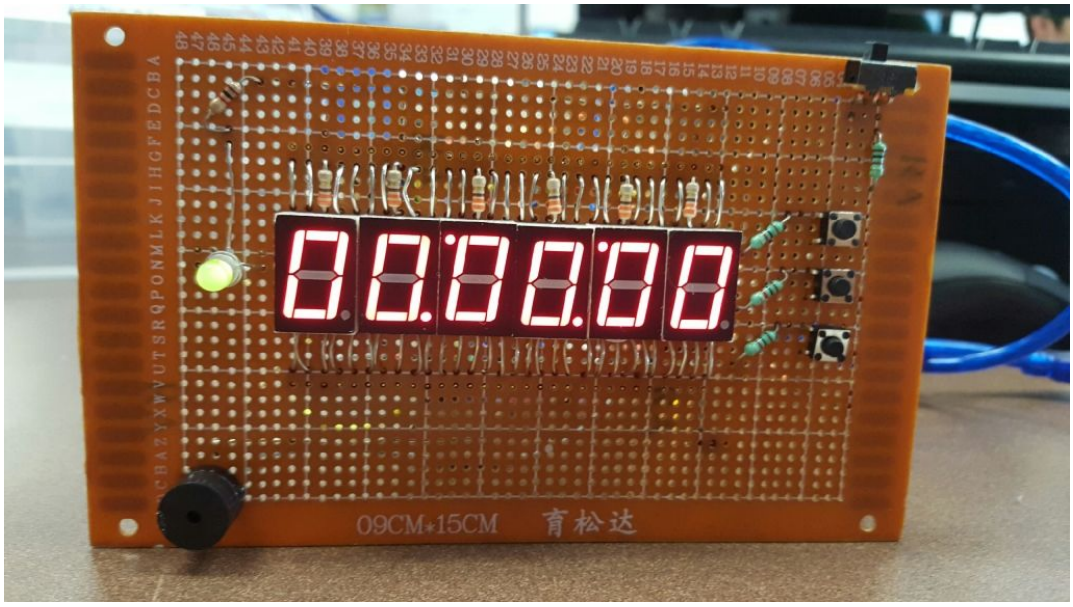
- Resistors
  - 5 X 10KΩ
  - 6 X 220Ω
- Displays
  - 6 X 7 Segment Display
- Pins
  - 71 X Male to Male Pins
- Inputs
  - 3 X Push Buttons
  - 1 X Switch
- Outputs
  - 1 X RG LED
  - 1 X Buzzer
- Wires
  - 58 X Male to Female
  - Metal Wire
- Circuit Board
  - 1 X 48 by 29 Regular Circuit Board
- Arduino Board
  - 1 X Arduino Mega 2560

Pictures:

This is a picture of the clock when it is counting time normally, the red LED indicates that the alarm is on.



This is a picture of the alarm when it is in the alarm set mode, this is indicated by the green LED. The user can enter this mode by pressing the bottom button and they can change the alarm time by pressing the top button to change the hour and the middle button to change the minute.



This final picture is of the wiring and soldering of the project. You can see the wire for the common ground and all the wires that connect to the arduino board.