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# Binary Quiz Game



## SUMMARY

- An 8-bit binary number is presented to the player
- Player is tasked to respond with the decimal conversion of the binary number
- Afterwards, the player's response is evaluated





## EQUIPMENT USED/LIMITATIONS:

- Eight LEDs
- Eight 560-Ohm resistors
- One breadboard
- Various connecting wires
- Arduino and USB cable
  
- Absence of 74HC595 Shift Register that contains logic for decimal to binary conversion



# IMPLEMENTATION

- buildRandom()
  - Does improvised job of the 74HC595 shift register to convert a decimal number to binary and store result in an array
- DisplayNumber()
  - Display the binary number using LEDs via access to the stored binary array
- getAnswer()
  - Receive a number from the Serial Monitor to display to the user
- checkAnswer()
  - Compare user's number to the random number generated and display correct/incorrect status



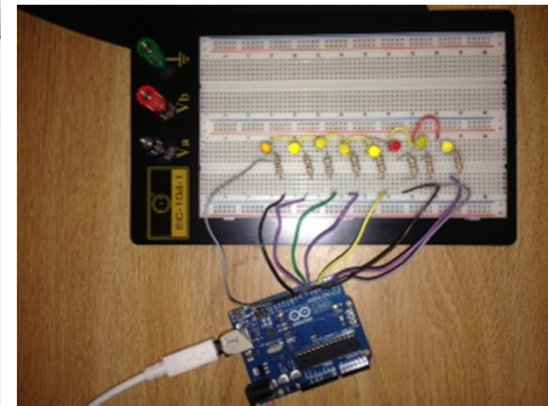
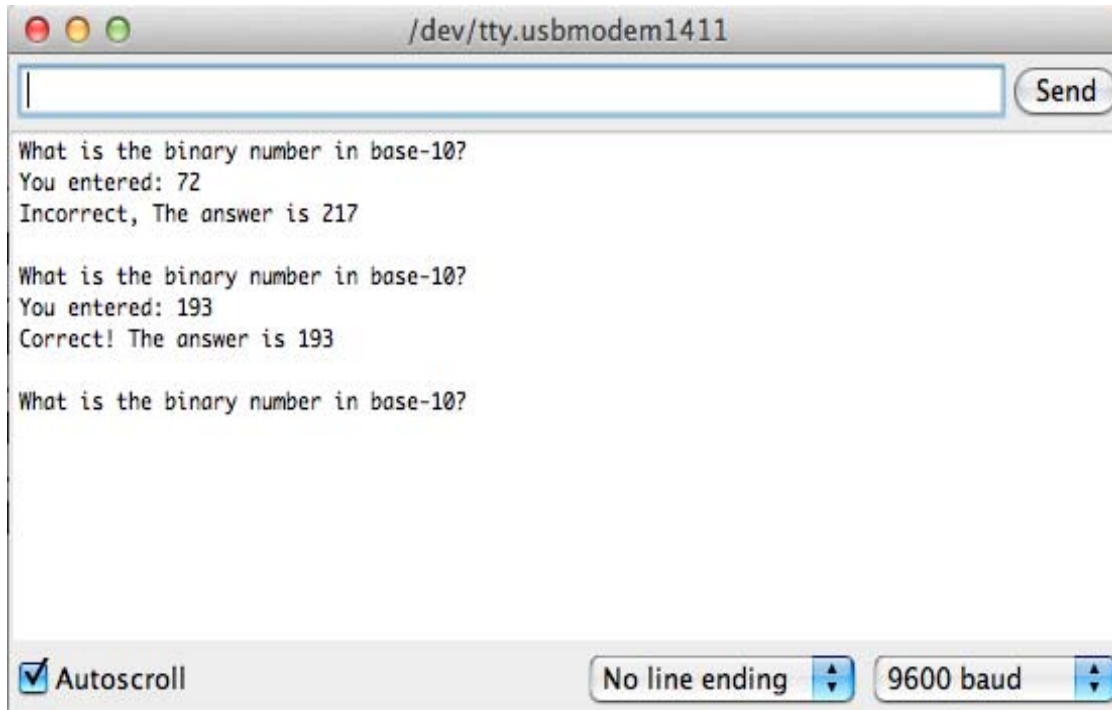
# IMPROVISED 74HC595 REGISTER

```
void buildRandom(int num)
{
    int temp_num = num;
    int it = 0;
    while (temp_num != 0)
    {
        leds[it] = temp_num % 2;
        temp_num = temp_num / 2;
        it++;
    }

    while (it < 8)
    {
        leds[it] = 0;
        it++;
    }
}
```



# BINARY QUIZ GAME SNAPSHOTS





## CONCLUSION:

- In the absence of an Ethernet Shield for the Arduino Board, we were not able to integrate text messaging or social features with this project

