

Set up Port Pins

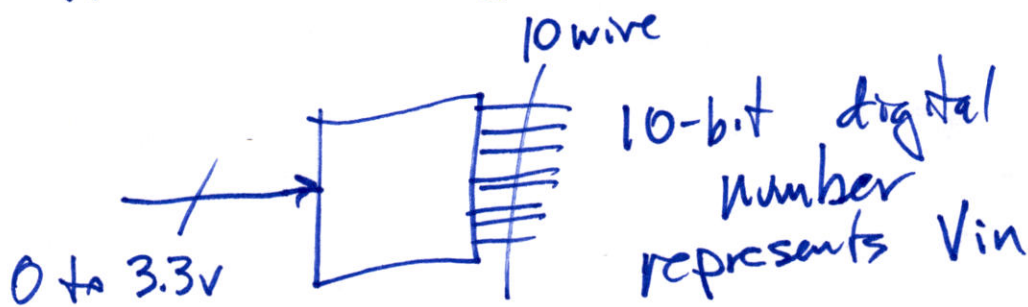
while(1)

Read Vin

~~compute~~ Compute which LED to Light

Light one LED

Vin ← Analog value



Embedded Systems

2016-09-06

$N = \#$ of bits of our Analog to digital converter (2)

$$n = \left\lfloor \frac{V_{in} * 2^N - 1}{V_{cc}} + \frac{1}{2} \right\rfloor \text{integer}$$

rounding

$$= \left\lfloor \frac{3.3V * 1023}{3.3V} + \frac{1}{2} \right\rfloor \text{int}$$

$$= \left\lfloor 1023.5 \right\rfloor \text{int}$$

$$= 1023$$

||||| |||||

$$= \left\lfloor \frac{1.65V * 1023}{3.3V} + \frac{1}{2} \right\rfloor \text{int}$$

$$= \left\lfloor 512 \right\rfloor \text{int}$$

$$= 512$$

→ 100000 0000

$$\left\lfloor \frac{0.32V * 1023}{3.3V} + \frac{1}{2} \right\rfloor \text{int}$$

$$\left\lfloor 99.2 \right\rfloor \text{int}$$

$$\left\lfloor 99.7 \right\rfloor \text{int}$$

→ 99

what is n?