Lab 10: Requirement Description

● ADC
  ○ Video: https://youtu.be/FoC08p83jS0
  ○ HackMD: https://hackmd.io/uWfcWEBuQC6a9VN6LZ0UGg?view

● Basic (60%)
  ○ Description: Use four bulbs as a counter to record the degree of rotation of the variable resistor, when the variable resistor is rotated, the form of the light bulb is sequentially changed to indicate 0~15. Please use 10-bit resolution and map 0~1023 to 0~15, the oscillator frequency needs to be >= 4 MHz

  ○ Example: https://youtu.be/sveEmRz5RgY

● Advanced (40%)
  ○ Description: In Taylors's song <love story>, the melody of "Romeo, take me somewhere we can be alone"　is　"Do Fa Mi Re Do Re Do Mi Do Re", please use the bulb while rotating the variable resistor at a constant speed to play this song.

  ○ Example: https://youtu.be/2qT7NfjPyGU

● Hint & Standard of Grading
  1. Program in C only.
  2. The numerical order of the melody is "1432121312".
  3. Explain resolution mapping to bulb notation
  4. Resolution should be 10-bit.
  5. The three pins of the variable resistor are connected to 5v, AN0, and ground in sequence.