1. **Prelab: ADC Registers (5 pts)**

2. **Part 1: Initializing ADC and Displaying Quantized Values (10 pts)**
    a. (10 pts) Correctly initializes and configures all registers needed for ADC. Demonstrates ADC conversion using IR sensor signals. Program displays quantized values read from the ADC (raw digital conversion results). Explains whether the quantized values appear to be valid.
    b. (8 pts) Correctly initializes and configures all registers needed for ADC. Demonstrates ADC conversion using IR sensor signals. Program displays quantized values read from the ADC (raw digital conversion results). **Does not** explain whether the quantized values appear to be valid.
    c. (4 pts) Correctly initializes and configures all registers needed for ADC. **Does not** demonstrate ADC conversion using IR sensor signals and **does not** display quantized values read from the ADC (raw digital conversion results).
    d. (0 pts) Program does not compile.

3. **Part 2: Calibrating Distance Measurement (10 pts)**
    a. (10 pts) Plots distance vs. quantized values and calibrates the IR sensor. Prints both distance and quantized value to LCD screen. Readings are within 1 cm of actual values and an averaging mechanism was implemented.
    b. (8 pts) Plots distance vs. quantized values and calibrates the IR sensor. Prints both distance and quantized value to LCD screen. Readings are **not** within 1 cm of actual values and an averaging mechanism was implemented.
    c. (5 pts) Plots distance vs. quantized values and calibrates the IR sensor. Prints both distance and quantized value to LCD screen. Readings are within 1 cm of actual values and an averaging mechanism **was not** implemented.
    d. (2 pts) Plots distance vs. quantized values and calibrates the IR sensor. Prints both distance and quantized value to LCD screen. Readings are **not** within 1 cm of actual values and an averaging mechanism **was not** implemented.
    e. (0 pts) No calibration.

4. **Part 3: Visualizing Data (5 pts)**
    a. (5 pts) Demonstrates IR/ADC data output in Putty and correctly graphs distance and quantization value. Calibration methods are justified with a detailed description of how choices were made for calibration.
    b. (3 pts) Demonstrates IR/ADC data output in Putty but does not graph distance and quantization values.
    c. (0 pts) Little or no effort was made in outputting values to Putty and graphing.

5. **Code Quality (5 pts)**

a. (5 pts) Code is fully commented, follows company coding standards, all functions are called from main.
b. (4 pts) Code is mostly commented and all functions are called from main.
c. (3 pts) Code is sparsely commented but all functions are called from main.
d. (2 pts) Code is mostly commented but functions are written in main or are not reusable.
e. (1 pt) Code is sparsely commented but functions are written in main or are not reusable.
f. (0 pts) Little or no effort shown in commenting or developing reusable code.

6. Bonus: Quick Calibration (3 pts)

a. (3 pts) Efficiently perform a recalibration of the IR sensor measurement using novel implementation.
b. (2 pts) Efficiently perform a recalibration of the IR sensor measurement using suggested implementation.