Problem Solving at the Internship

Learning Objective: At the end of the activity, the students will have identified a current or past problem at their internship, employing steps to solve the problem.

Directions: Using the graphic organizer below, identify a current problem at the internship and complete the steps to solving it by entering your responses below.

Define the problem Describe the Background of the issue.	A client wants a way they can reduce human error in the measuring process. They have a measuring tool, and usually, a human comes by every so often to measure the substance and record the data by hand. This introduces human error into the equation and may be somewhat time-consuming. So they want a way they can reduce this error.
Brainstorm solutions Give at least 2 options.	Take a picture of the measuring device: 1. Use AI in its entirety to determine which number should be recorded. Use a mix of bounding boxes, maching learning, and OCR to correctly determine which and what value should be recorded 2. Use OCR and allow the user to choose the value themself by clicking on or selecting the value they want to input
Make plans and evaluate Which option will you implement and why?	Option 2: Option 1 is extremely time-consuming, training for something as vague as that would be unpredictable and most likely not work. It would also be impossible to train such a model when there is no sample, and various angles and lighting conditions would make it difficult Option 2 saves less time since the user still has to take a picture and select what they want to input. OCR also has the potential to mess up. However, compared to option 1, it is much more reliable.
Implement the plan List the steps taken to solve the problem.	1. Create an OCR resource on Azure's portal 2. Write C# / Javascript methods to send POST requests to the API (including image data and other information) 3. Interpret the received JSON data and convert the text and coordinates it returns to areas where the user can click 4. Whenever such an area is clicked, place the text from the JSON data into the input box

	5. Make the input box editable in case a user or the OCR makes a mistake 6. Create sample measurement entries with the data collected
Re-evaluation How did the plan go? Was it successful or what went wrong? Describe the outcome.	The plan was fairly successful. I was able to implement the solution just as I said I would. The interface was responsive, and the data showed up in the database. Bill (my boss) was happy with my work and agreed that with the information provided, there was no real other alternative to fixing the issue. Of course, its overall impracticality was acknowledged when presented to the person who will be talking to the clients about the solution. Such a solution may make the measurement take longer and although it is a solution, it is not one that will result in a huge gain in efficiency or accuracy.