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# Mini-Project 2: Solve It with YOLO: Vision for Change

### Objective

- Identify a practical, real-world problem that can be addressed using image classification and object detection
- Design and implement a YOLO-based solution tailored to that problem.
- Develop an app that uses the generated YOLO model

# Problem Selection

Choose a problem they care about. Example domains include:

- Public health (e.g., detecting mask usage)
- Environmental impact (e.g., waste sorting)
- Education (e.g., classroom behavior monitoring)
- Animal welfare (e.g., stray animal detection)
- Home automation (e.g., detecting household items)
- Industrial safety (e.g., helmet/glove detection)

**Datasets:**

- Build a custom dataset by taking your own pictures of the objects and labeling them
- Find a pre-made dataset from sources like Roboflow Universe, Kaggle, or Google Images V7

Justify your choice of problem:

- Why the problem matters
- Who benefits from the solution
- Why YOLO is a suitable approach

# Mini-Project 2 Requirements

| Component | Description |
|---|---|
| **Problem Proposal** | Define the problem, target users, and expected impact |
| **Dataset** | Collect or find images relevant to the problem |
| **Annotation** | Label images using YOLO format |
| **Model Training** | Train YOLO on the dataset |
| **Evaluation** | Measure performance |
| **Demo** | Run inference on test images or webcam feed |

# Scoring Rubric (Total: 100 Points)

| Criteria | Points | Description |
|---|---|---|
| **Problem Definition** | 15 | Clarity, relevance, and creativity of the chosen problem |
| **Data Preparation** | 15 | Quality and diversity of dataset, proper annotation |
| **Model Training** | 20 | Correct setup, training process, and tuning |
| **Evaluation & Metrics** | 15 | Use of appropriate metrics and analysis |
| **Demo Functionality** | 20 | Real-time or batch detection with clear output |
| **Reflection & Presentation** | 15 | Insightful discussion and clear communication |

## Deadline / Demo Presentation: November 7, 2025 (Friday)