

Implementation approach for each question:-

How it works:

The webcam captures video frames.

Each frame is sent to the YOLOv8 model, which finds objects and draws boxes around them.

The annotated frames show on screen in real-time.

The system shows FPS (speed) and inference time to track performance.

Approach:

Uses a fast pre-trained YOLOv8 model optimized for real-time use.

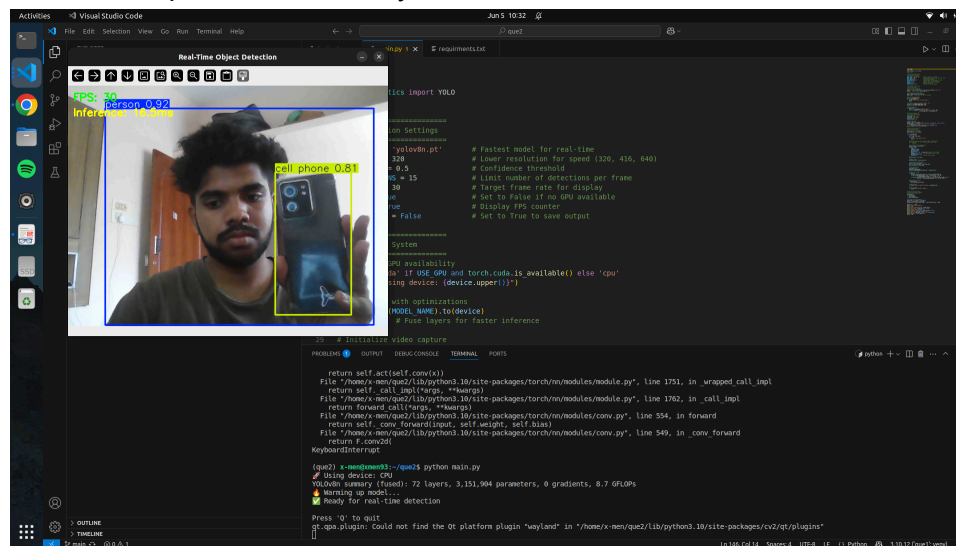
Runs on GPU if available for faster processing.

Uses smaller input size to improve speed with good accuracy.

Limits detections by confidence and max count to reduce noise.

Displays results and can save video if needed.

Results and performance analysis:



Challenges faced and solutions:-

Installation of torch which is compatible with ultralytics

Fps setting as i had some issues with my webcam