In a conceptual iPhone factory, the engineering team would like to develop an algorithm to automatically detect the defects on the iPhone housing caused during the production process. We have taken 100 iPhone housing images, and would like your help to provide the engineering team an approach to detect the defect units. Please provide the following:

1. Approach: What algorithm do you consider and why? What assumptions or simplifications do you make and why? Please explain your approach.

2. Implement: Run an algorithm to detect the defective units. The algorithm should be developed using open source tools. Typical implementations are in python but other languages are acceptable.

    - Do not use anything beyond your already at-home computational resources. Part of this assessment is to show how you address limited computational resources. Please contact us if you have any questions on how to address computational resources. This assessment does not require a GPU.

    - Please limit the sophistication of your approach. Your code should be less than 300 lines and strongly leverage open source tools.

3. Assess: Report some metrics to determine how effective your algorithm is.

4. Bonus problem: The engineering team also would like to automatically locate or annotate the defect area for further analysis. It will be nice if you can also provide a method to annotate the defect area.