Lung cancer segmentation and Identifying the stage.
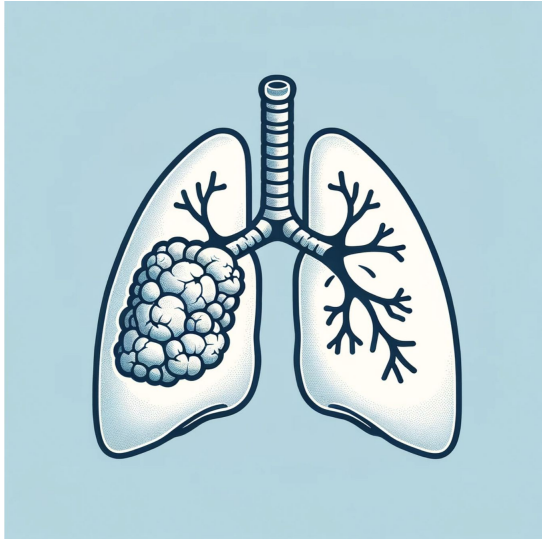
Presented by: Varsha Lambi

OUTLINE
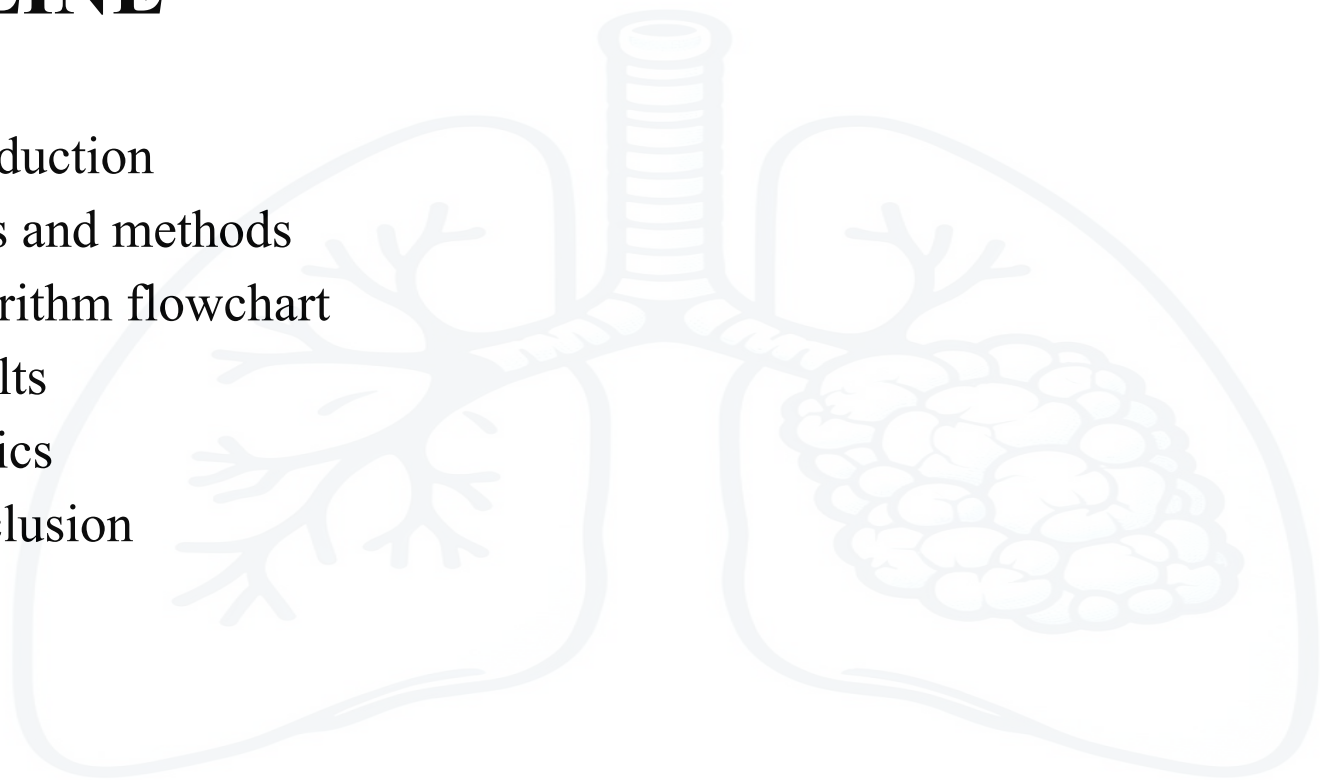
INTRODUCTION

- Abnormal cell growth with potential to invade other body parts.
- A serious type originating in the lungs, often caused by smoking.
- Emphasizing precision medicine, early detection, and AI-based profiling.
- Development of personalized vaccines.
- Oncology market projected to grow from $187 billion (2021) to $311.81 billion by 2032.
- Key players: AstraZeneca, Pfizer, Bristol Myers, Sanofi, Merck, Novartis.
- Significant global health impact, with stage identification crucial for enhancing treatment outcomes.
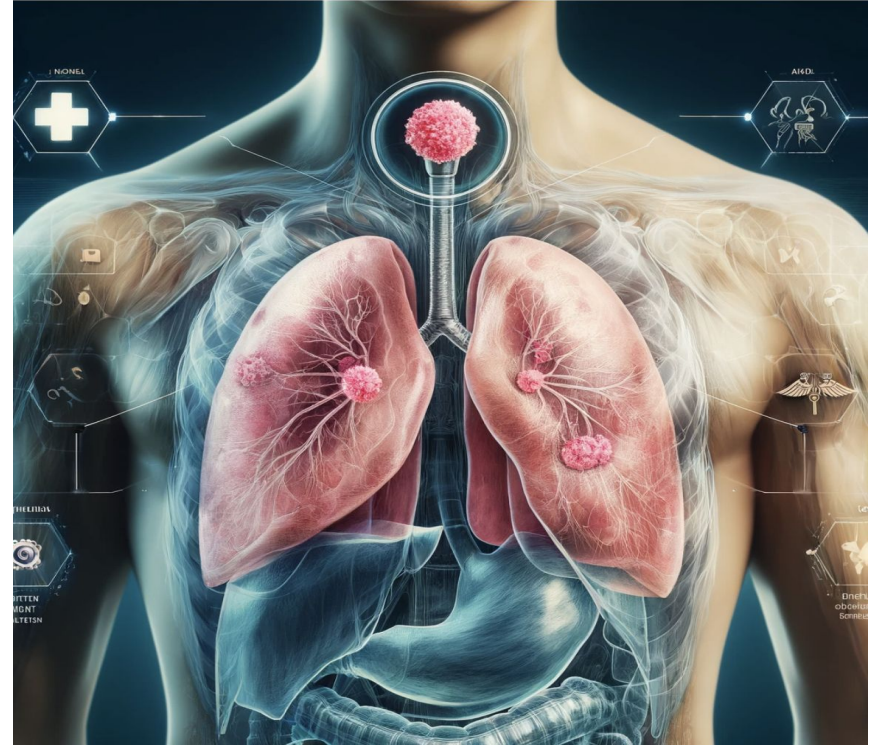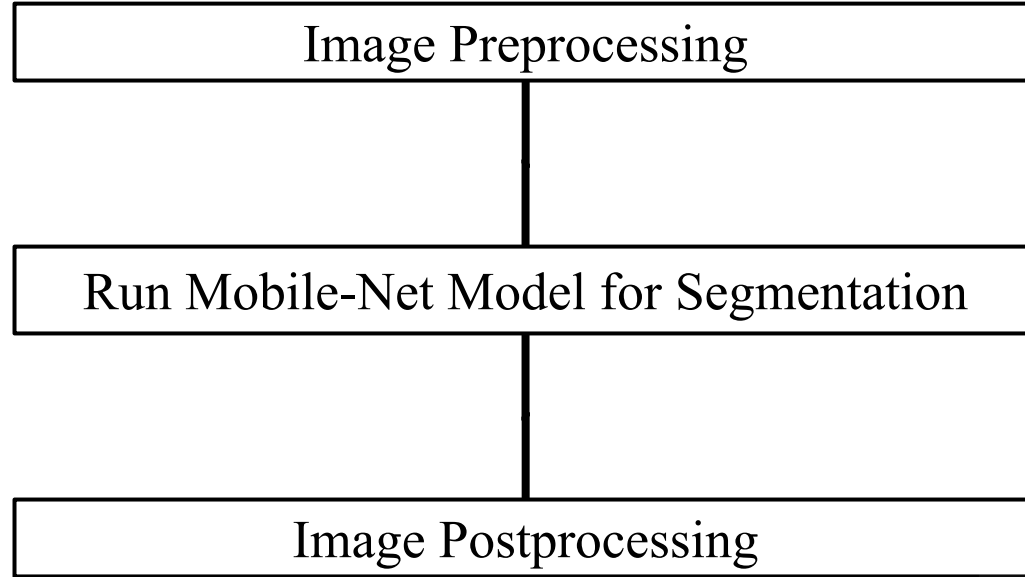

Fig 1. Showing the animated lung cancer image

Tools and Methods

1. Matlab
2. MobileNet Model
3. Thresholding using binarize
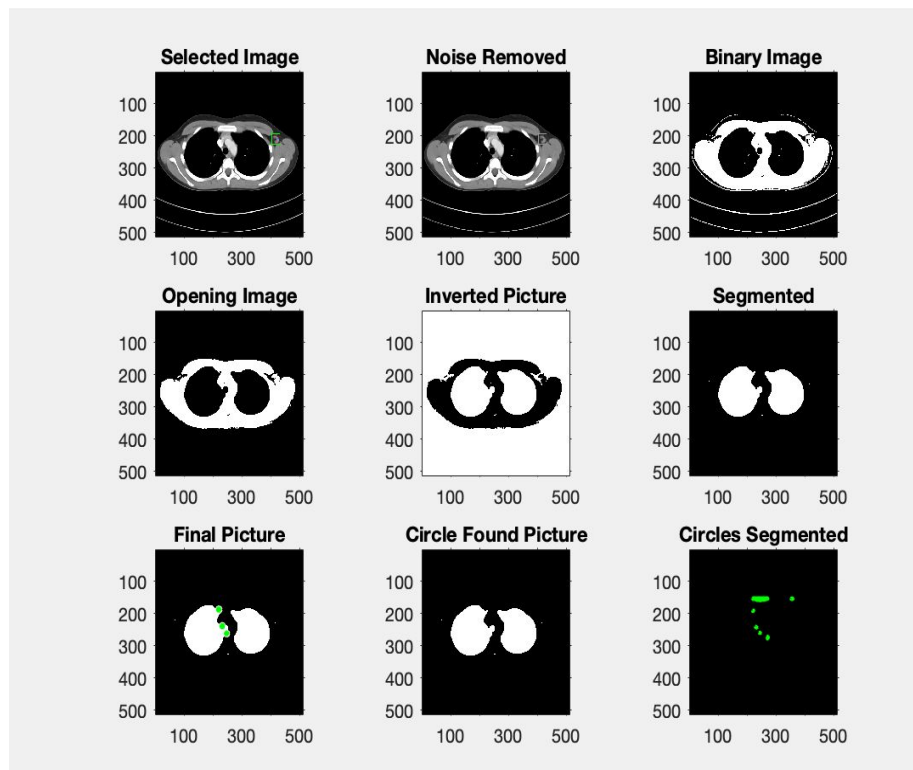4. Morphological operation
5. Median filtering

ALGORITHM FLOW

Image Preprocessing

Run Mobile-Net Model for Segmentation

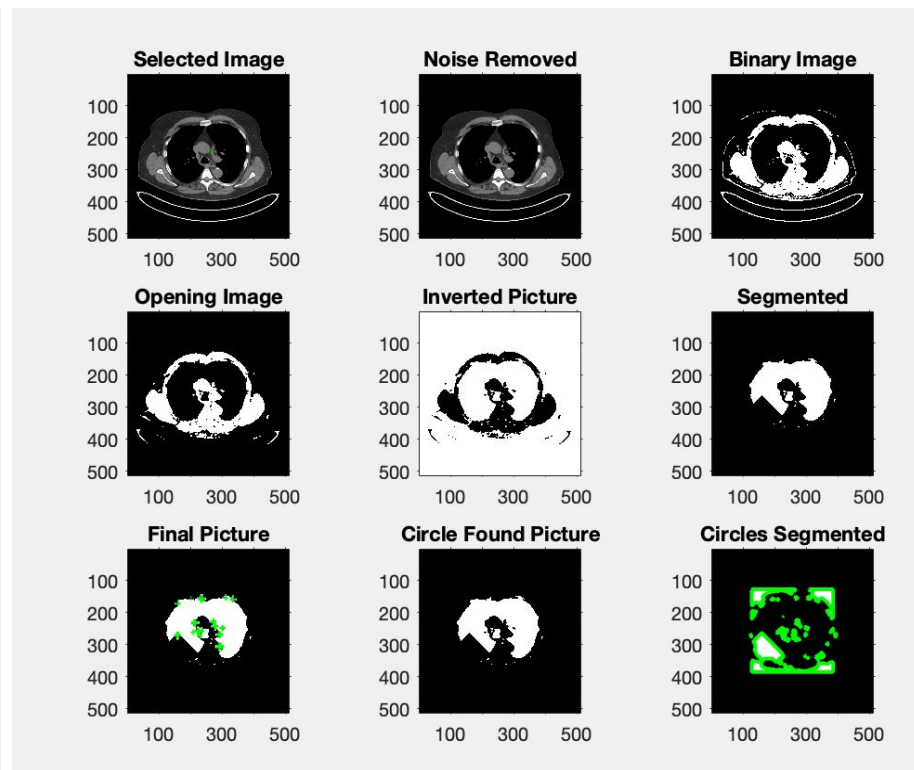| Image Postprocessing |
| :---: |

RESULTS

Fig 2. True Positive Image

Fig3. True Positive and False Positive

RESULTS
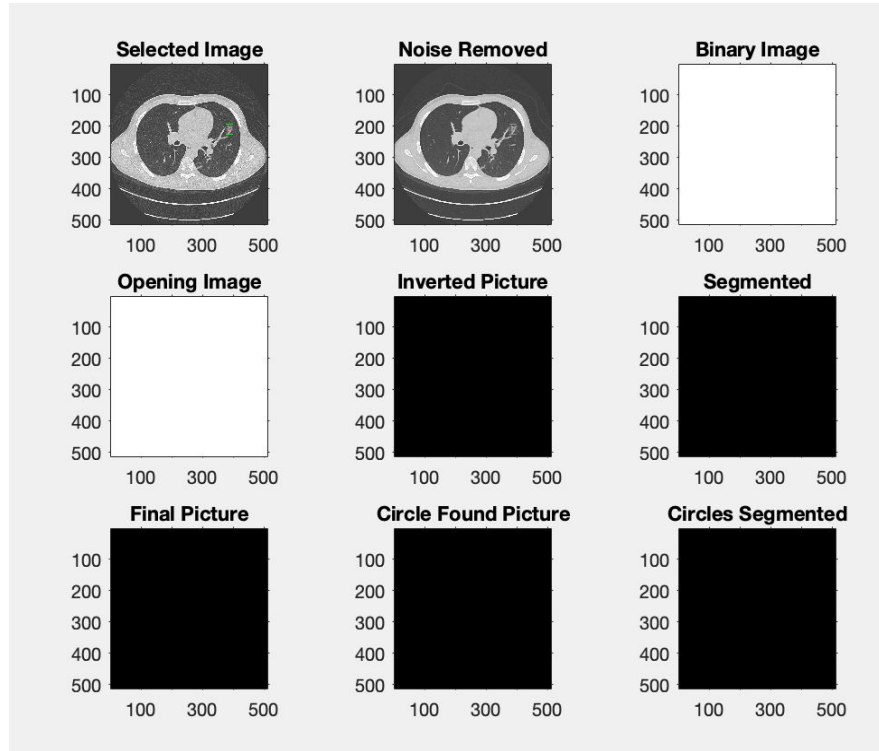
Fig 4: False Negative
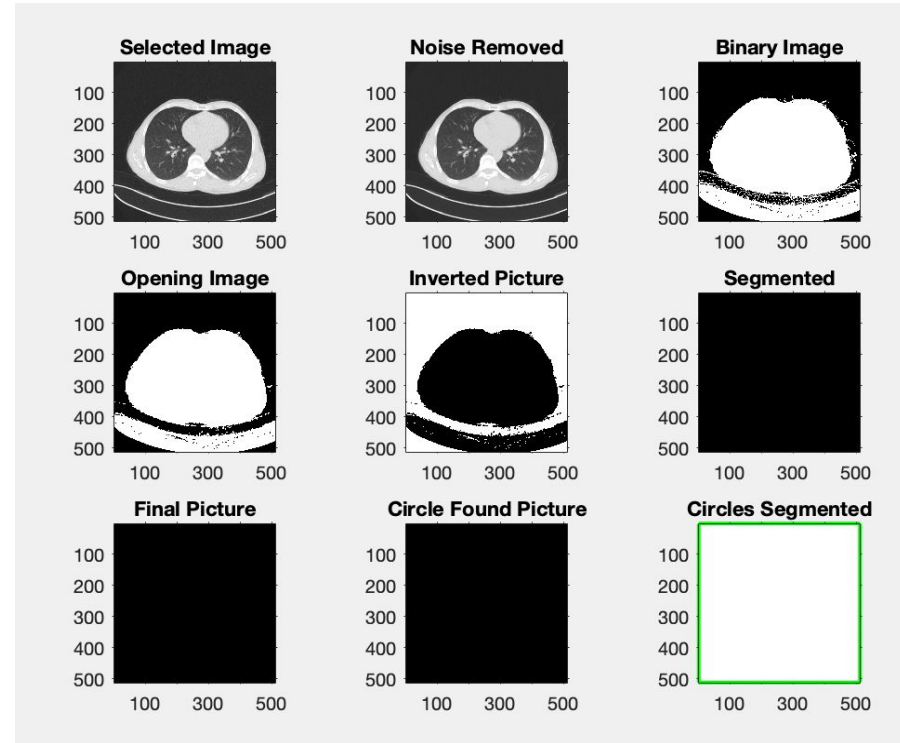
Fig 5: True Negative

METRICS
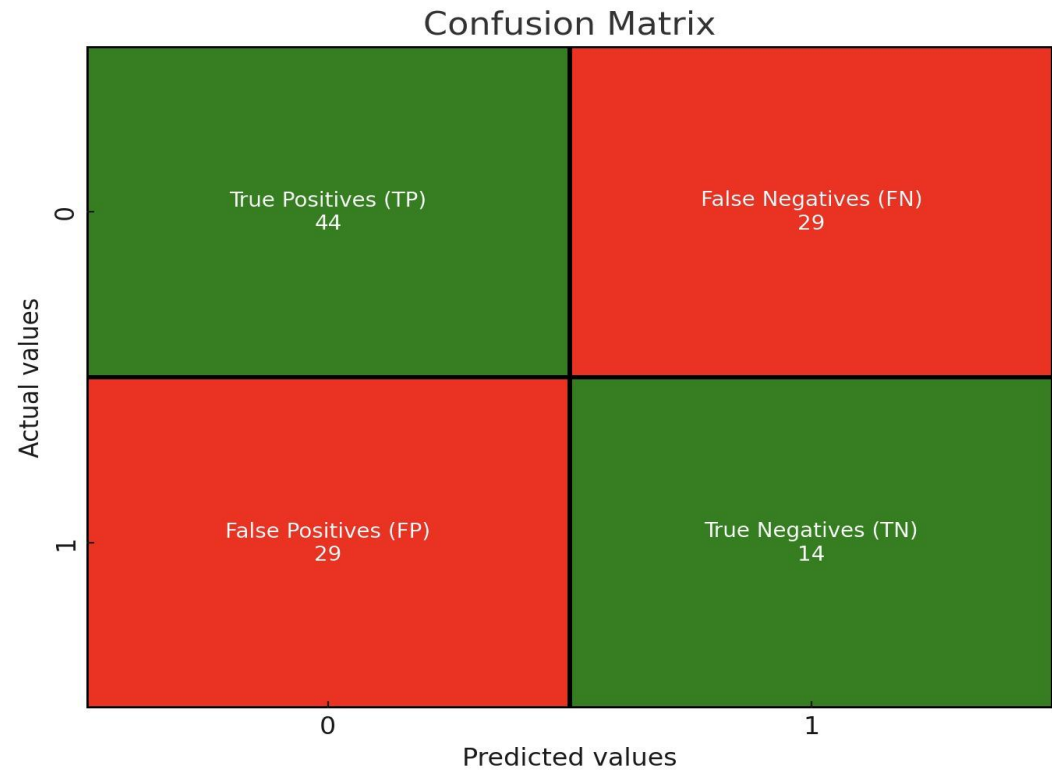

Fig 6: Confusion Matrix

Metrics	
Precision	**60.27%**
Accuracy	**50%**
Recall	**60.27%**

Table 1: Model metrics

CONCLUSION

- Achieved a precision and recall of 60.27%.
- Accuracy is at 50%, which indicates a need for significant improvements.
- The findings highlight the potential of image processing and AI models like Mobile Net for analyzing medical images, but improvements are necessary.
- Future efforts should aim to enhance accuracy by using more advanced algorithms, increasing the size of training datasets, and applying combined modeling approaches.

Thank You