# EFFICIENT PNEUMONIA DETECTION IN DIGITAL CHEST XRAY IMAGES USING DEEP TRANSFER LEARNING

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# Outline

# INTRODUCTION

- Pneumonia is one of the largest infectious diseases that cause death in children and elderly people across the globe.
- Pneumonia is ranked eight in the list of the top 10 causes of death in the United States.
- Due to pneumonia, every year, 3.7 lakh children die in India, which constitutes a total of fifty percent of the pneumonia deaths that occur in India.

# EXISTING SYSTEM

- Chest X-rays are primarily used for the diagnosis of this disease.
- However, even for a trained radiologist, it is a challenging task to examine chest X-rays.
- There is a need to improve the diagnosis accuracy.

# PROPOSED SYSTEM

- To develop an efficient application / web application to detect Pneumonia by uploading digital Chest X-ray .
- Efficient model for the detection of pneumonia
- Trained on digital chest X-ray images
- Supervised learning approach.
- Transfer learning is used to fine-tune the deep learning models

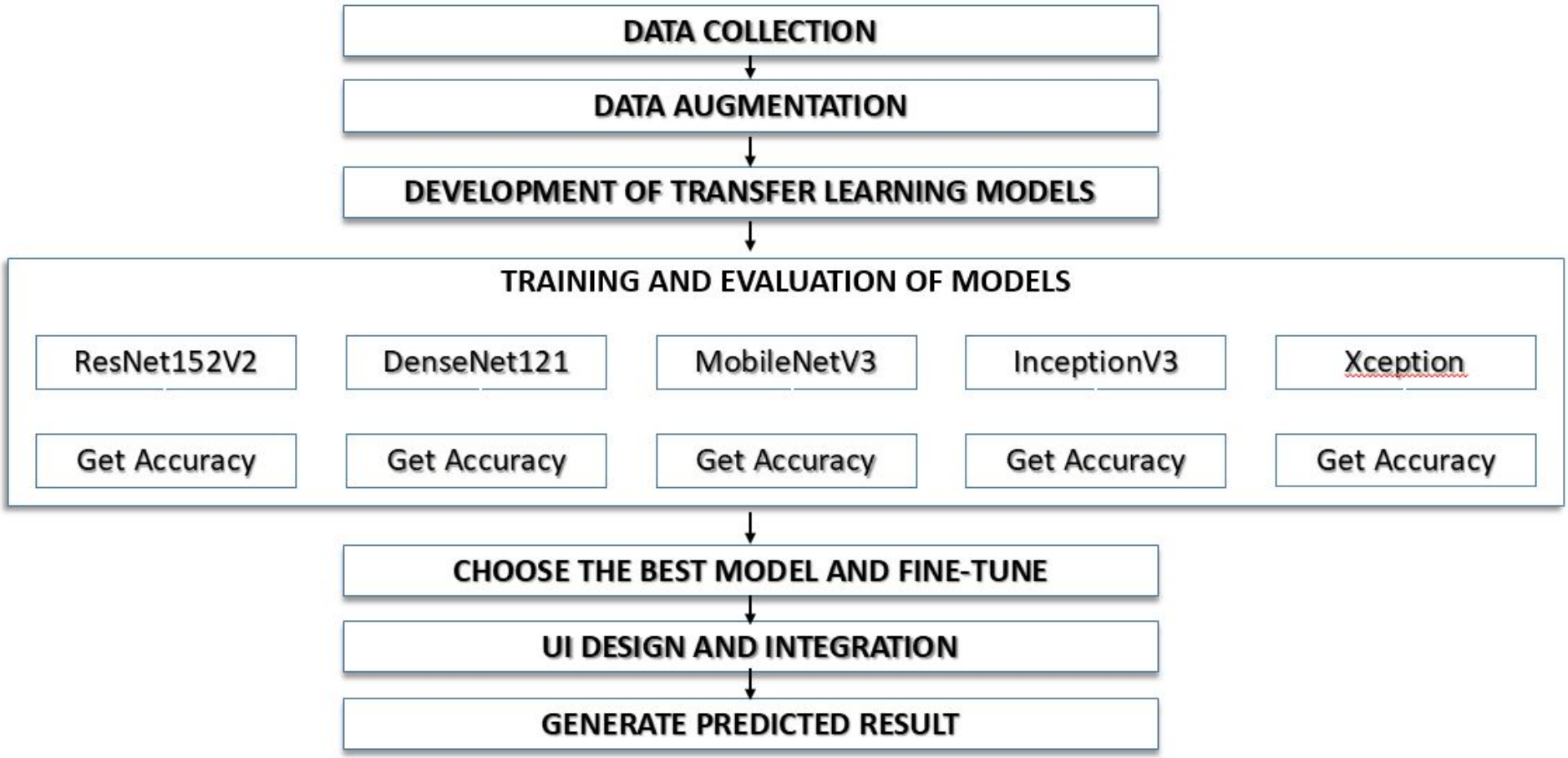
# PROPOSED SYSTEM

- A novel approach based on a weighted classifier which will combine the weighted predictions from the state-of-the-art deep learning models such as
  - DenseNet121
  - MobileNetV3
  - ResNet152V2
  - InceptionV3
  - Xception

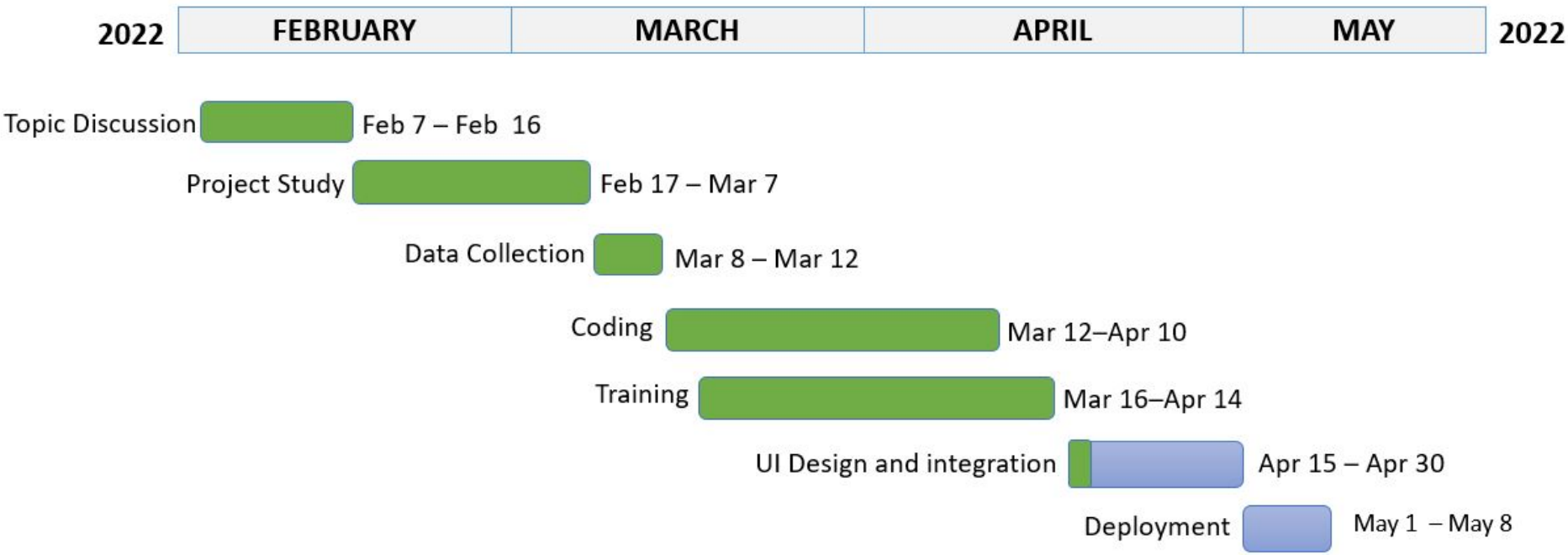
# MODULES

- DATA COLLECTION AND AUGMENTATION
- DEVELOPEMENT OF TRANSFER LEARNING MODELS
- TRAINING AND EVALUTION OF MODELS
- UI DESIGN AND MODEL INTEGRATIION

# WORK FLOW


DATA COLLECTION
DATA AUGMENTATION
DEVELOPMENT OF TRANSFER LEARNING MODELS
TRAINING AND EVALUATION OF MODELS
ResNet152V2
DenseNet121
MobileNetV3
InceptionV3
Xception
Get Accuracy
Get Accuracy
Get Accuracy
Get Accuracy
Get Accuracy
CHOOSE THE BEST MODEL AND FINE-TUNE
UI DESIGN AND INTEGRATION
GENERATE PREDICTED RESULT

# PROJECT PLAN



# WORK PROGRESS

- Modified and trained DenseNet121 model with chest xray images.
- Modified and trained MobileNetV3 model with chest xray images.
- Modified and trained InceptionV3 model with chest xray images.
- Modified and trained XceptionV3 model with chest xray images.
- Modified and trained ResNet152V2 model with chest xray images.
- Chose the model ResNet152V2 as better model with accuracy 80-85%
- Started developing web user Interface.

# Thanks

*THANK YOU*