

Potato Disease Classification Using CNN Model.

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PROBLEM DEFINITION

- **Objective :** Classify Potato diseases into three classes
 - Early Blight
 - Late Blight
 - Healthy
- **Problem Statement :**
 - Potato crops are susceptible to diseases , causing significant yield losses.
 - Manual disease detection is time consuming and error prone.
 - Need for an automated , app integrated system for real time classification.

PROPOSED SOLUTION

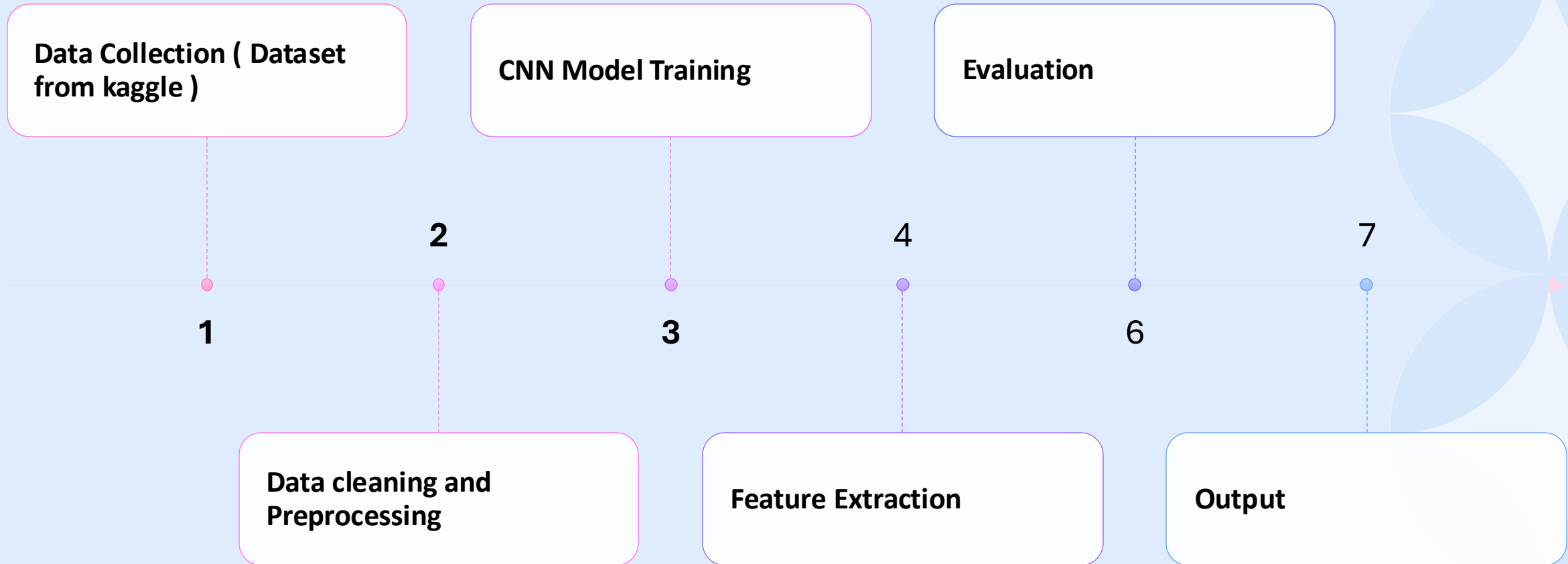
- **Solution Overview :**

- Use a CNN for image classification.
- Integrated the trained model into a mobile or web application.

- **Key Features :**

- Real time disease detection from leaf images.
- User friendly app interface for farmers.
- Accurate classification with minimal latency.

FLOWCHART



RELATED PHOTOS

```
[1]: import tensorflow as tf
from tensorflow.keras import models, layers
import matplotlib.pyplot as plt
import numpy
```

Importing Library

Model: "sequential_2"

Layer (type)	Output Shape	Param #
sequential (Sequential)	(32, 256, 256, 3)	0
sequential_1 (Sequential)	(32, 256, 256, 3)	0
conv2d (Conv2D)	(32, 254, 254, 32)	896
max_pooling2d (MaxPooling2D)	(32, 127, 127, 32)	0
conv2d_1 (Conv2D)	(32, 125, 125, 64)	18,496
max_pooling2d_1 (MaxPooling2D)	(32, 62, 62, 64)	0
conv2d_2 (Conv2D)	(32, 60, 60, 64)	36,928
max_pooling2d_2 (MaxPooling2D)	(32, 30, 30, 64)	0
conv2d_3 (Conv2D)	(32, 28, 28, 64)	36,928
max_pooling2d_3 (MaxPooling2D)	(32, 14, 14, 64)	0
conv2d_4 (Conv2D)	(32, 12, 12, 64)	36,928
max_pooling2d_4 (MaxPooling2D)	(32, 6, 6, 64)	0
conv2d_5 (Conv2D)	(32, 4, 4, 64)	36,928
max_pooling2d_5 (MaxPooling2D)	(32, 2, 2, 64)	0
flatten (Flatten)	(32, 256)	0
dense (Dense)	(32, 64)	16,448
dense_1 (Dense)	(32, 3)	192

Total params: 183,747 (717.76 KB)
Trainable params: 183,747 (717.76 KB)
Non-trainable params: 0 (0.00 B)

Model Summary

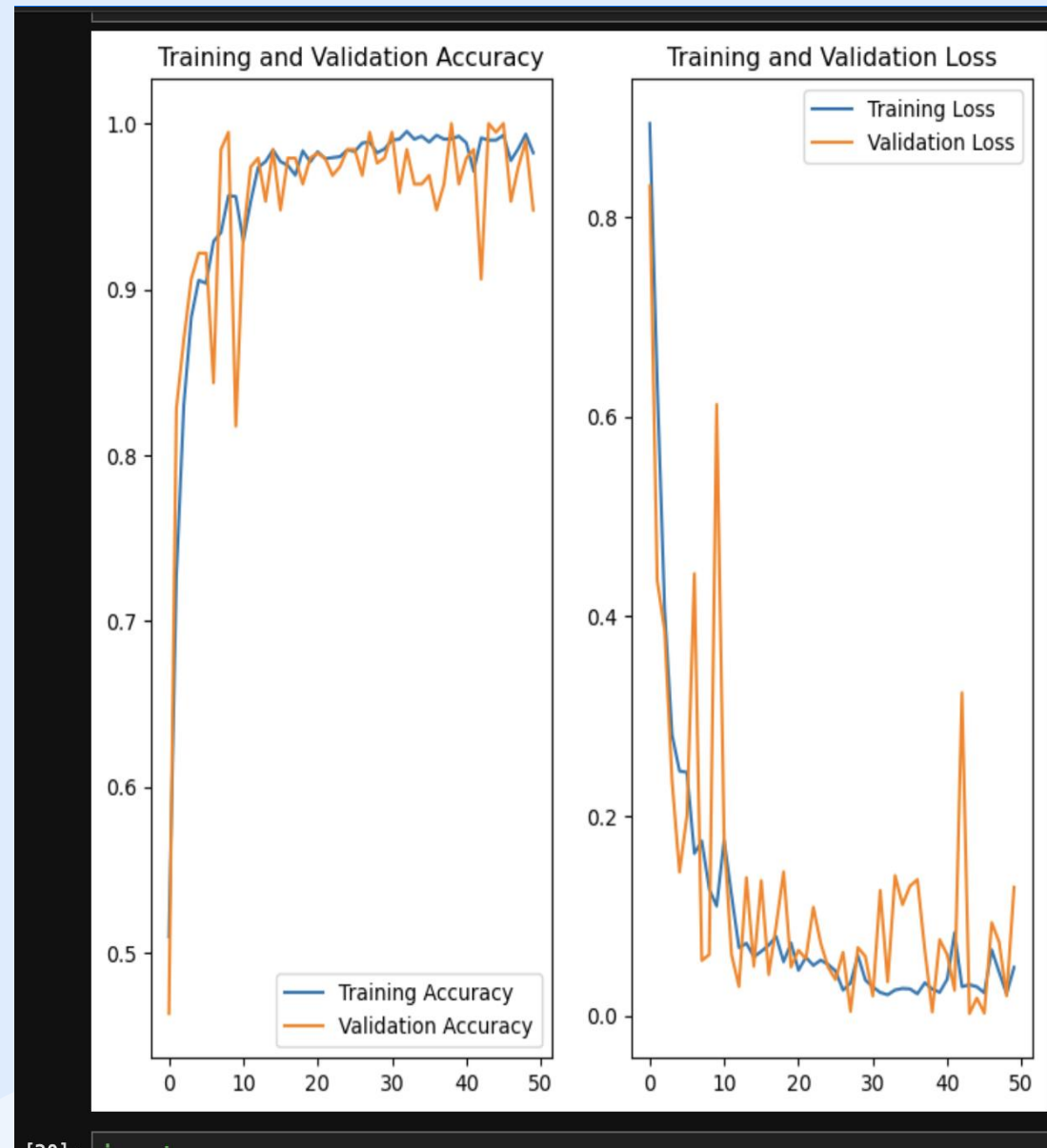
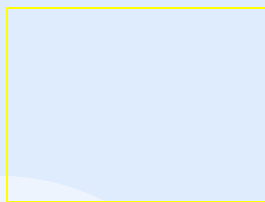


Predicted Images

Accuracy

```
[22]: scores=model.evaluate(test_ds)
      6/6 ————— 2s 163ms/step - accuracy: 0.9578 - loss: 0.1090
[24]: acc = history.history['accuracy']
```

Accuracy = 0.9578



CONCLUSION AND FUTURE WORK

- **Conclusion :**
 - Successfully classified potato diseases using a CNN model.
- **Future Work :**
 - Integrating the model into a user friendly app for farmers using FastAPI.
 - Enhance model accuracy with more diverse data.
 - Add more diseases classes.
 - Implement real time field testing.



Thank You..