

Preprocess The Images

```
In [ ]: from tensorflow.keras.preprocessing.image import ImageDataGenerator

train_data = ImageDataGenerator(rescale=1./255,
                                zoom_range=0.2, shear_range=0.2,
                                horizontal_flip=True)

test_data = ImageDataGenerator(rescale=1)

x_test=test_data.flow_from_directory('Dataset Plant Disease/vegetable-dataset/vegetable-dataset',target_size=(128,128),class_mode='categorical',batch_
x_train=train_data.flow_from_directory('Dataset Plant Disease/vegetable-dataset/vegetable-dataset',target_size=(128,128),class_mode='categorical',batch_
```

Import The Libraries

```
In [3]: from tensorflow.keras.models import Sequential

from tensorflow.keras.layers import Convolution2D, MaxPooling2D, Flatten, Dense
```

Initializing The Model

```
In [4]: model = Sequential()
```

ADD CNNLayers

```
In [5]: model.add(Convolution2D(42,(4,4),activation='relu',input_shape=(128,128,4)))

model.add(MaxPooling2D(pool_size=(2, 2)))

model.add(Flatten())
```

Add Dense Layers

```
In [ ]: model.add(Dense(output_dim=40,init='uniform',activation='relu'))

model.add(Dense(output_dim=20,init='random_uniform',activation='relu'))

model.add(Dense(output_dim=6,init='random_uniform',activation='softmax'))
```

Compile the model

```
In [ ]: model.compile(optimizer='adam',loss='categorical_crossentropy',metrics=['accuracy'])
```

Fit and save the model

```
In [ ]: model.fit_generator(x_train,steps_per_epoch= len(x_train),epochs= 10,validation_data=x_test,validation_steps= len(x_test))

model.save('vegetable.h5')
```