Model Development Phase Template

Date	19 March 2024
Team ID	SWTID1720240510
Project Title	Covid vision: Advanced Covid-19 Detection From Lung X-Rays With Deep Learning
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

```
from google.colab import drive
drive.mount('/content/drive')

Mounted at /content/drive
```

```
!unzip '/content/drive/MyDrive/dataset.zip'
```

```
inflating: dataset/traindata/normal/Normal-3656.png
inflating: dataset/traindata/normal/Normal-3657.png
inflating: dataset/traindata/normal/Normal-3658.png
inflating: dataset/traindata/normal/Normal-3659.png
inflating: dataset/traindata/normal/Normal-366.png
inflating: dataset/traindata/normal/Normal-3660.png
inflating: dataset/traindata/normal/Normal-3661.png
inflating: dataset/traindata/normal/Normal-3662.png
inflating: dataset/traindata/normal/Normal-3663.png
inflating: dataset/traindata/normal/Normal-3664.png
inflating: dataset/traindata/normal/Normal-3665.png
inflating: dataset/traindata/normal/Normal-3666.png
inflating: dataset/traindata/normal/Normal-3667.png
inflating: dataset/traindata/normal/Normal-3668.png
inflating: dataset/traindata/normal/Normal-3669.png
inflating: dataset/traindata/normal/Normal-367.png
inflating: dataset/traindata/normal/Normal-3670.png
inflating: dataset/traindata/normal/Normal-3671.png
inflating: dataset/traindata/normal/Normal-3672.png
inflating: dataset/traindata/normal/Normal-3673.png
inflating: dataset/traindata/normal/Normal-3674.png
inflating: dataset/traindata/normal/Normal-3675.png
inflating: dataset/traindata/normal/Normal-3676.png
inflating: dataset/traindata/normal/Normal-3677.png
inflating: dataset/traindata/normal/Normal-3678.png
inflating: dataset/traindata/normal/Normal-3679.png
inflating: dataset/traindata/normal/Normal-368.png
```

```
inflating: dataset/traindata/normal/Normal-3753.png
```

```
[15] imagesize = [299,299]
     trainpath = '/content/dataset/traindata'
```

```
[16] testpath = '/content/dataset/testdata'
```

```
[17] import matplotlib.pyplot as plt
     import numpy as np
     import tensorflow_hub as hub
     from tensorflow.keras.layers import Input, Lambda, Dense, Flatten,Activation,GlobalAveragePooling2D, Dropout
     from tensorflow.keras.models import Model
     from tensorflow.keras.preprocessing import image
     from tensorflow.keras.applications.xception import Xception,preprocess_input
     from tensorflow.keras.preprocessing.image import ImageDataGenerator, load_img
     from glob import glob
     import numpy as np
     import matplotlib.pyplot as plt
```

```
train_datagen = ImageDataGenerator(rescale=1./255,zoom_range=0.2,width_shift_range=0.2,height_shift_range=0.2,horizontal_flip=True)
test_datagen = ImageDataGenerator(rescale=1./255)
```

```
[20] train =train_datagen.flow_from_directory(trainpath,target_size=(299,299),batch_size=32,class_mode='categorical')
     test =test_datagen.flow_from_directory(testpath,target_size=(299,299),batch_size=32,class_mode='categorical')
```

```
Found 14679 images belonging to 4 classes.
Found 6665 images belonging to 4 classes.
```

Model Validation and Evaluation Report (5 marks):

Model	Summary	Training and Validation Performance Metrics
Xception model		