

# SPRINT-4

## REGISTER FOR CLOUD ACCOUNT

TEAM ID	PNT2022TMID14641
PROJECT NAME	AI-powered Nutrition Analyzer for Fitness Enthusiasts

The screenshot displays the IBM Cloud dashboard in a web browser. The browser's address bar shows 'cloud.ibm.com'. The dashboard header includes the 'IBM Cloud' logo, a search bar, and navigation links for 'Catalog', 'Manage', and 'Preethi R's Account'. The main content area is titled 'Dashboard' and features a 'Create resource' button. Below this, a 'For you' section presents five recommended actions: 'Build' (a large blue box), 'Build a web app with Watson Speech to Text' (15 min), 'Get Started with Watson Studio' (2 hr), 'Build a Virtual Private Cloud (VPC)' (7 min), and 'IBM Watson Knowledge Catalog' (2 min). Each action includes a brief description and a 'Getting started' button. The bottom of the dashboard shows a 'User access' section with tabs for 'Manage users', 'News', and 'Planned maintenance'. The Windows taskbar at the bottom indicates the system time as 11:19 PM and the weather as 25°C Cloudy.

cloud.ibm.com/user

IBM Cloud

Search resources and products...

Profile

Active sessions

Login settings

Notification preferences

Contact information

Edit

User ID

pree19ec106@rmkcet.ac.in

Password

\*\*\*\*\*

Email

pree19ec106@rmkcet.ac.in

Role

Click **Edit** to enter your role.

Name

Preethi R

Industry

Click **Edit** to enter your industry.

Language

English

Upload a photo

25°C Cloudy

ENG 11:19 PM

https://cloud.ibm.com

IBM Cloud

Search resources and products...

Dashboard

Edit dashboard

Upgrade account

Create resource

For you

Build

Explore IBM Cloud with this selection of easy starter tutorials and services.

Build a web app with Watson Speech to Text

Deploy a conversational interface compatible with any application, device, or channel.

Get started with Watson Studio

Get started with using AI and Cloud Object Storage in 15 minutes.

IBM Watson Knowledge Catalog

Help your data citizens easily find, prepare, understand and use the data they need through an enterprise data catalog & governance platform.

Build a Virtual Private Cloud (VPC)

Upgrade to a paid account to create your own protected space in the IBM Cloud.

App Connect

Instantly connect applications, data, heritage systems and modern technologies, even without a single line of code, with IBM App Connect.

Build a virtual machine

Lift and shift your VMware workloads to the IBM Cloud.

Get started with Discovery

Get up to speed c Discovery with so tutorials, deep-di and complete ex working code.

News

Introducing Badges to IBM Cloud Certification

Announcing IBM SevOne Network Performance Management Version 6.4

IBM Named a Leader in Gartner Magic Quadrant for Full Life Cycle API Management

IBM to Introduce a New Incident Management SaaS Offering

Recent support cases

Planned maintenance

IBM Cloud status

No issues

Usage

User access

Manage users

16:50 PM 22-11-2022

IBM Cloud

Profile

Active sessions

Login settings

Notification preferences

Search resources and products...

Catalog

Manage

PREETHI S's Account

Profile

Contact information

Upload a photo

User ID

pree19ec107@rmkce.ac.in

Password

\*\*\*\*\*

Email

pree19ec107@rmkce.ac.in

Role

Click Edit to enter your role.

Name

PREETHI S

Industry

Click Edit to enter your industry.

Language

English

Edit

Type here to search

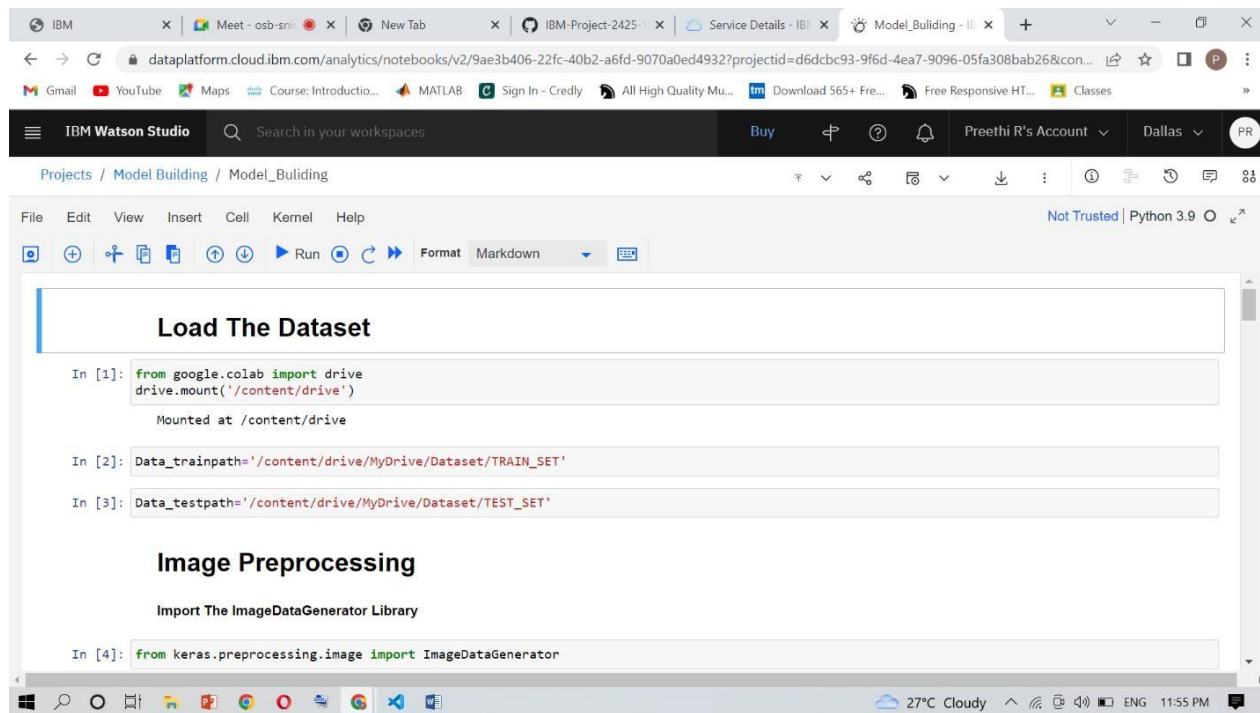
68%

Raining now

15:52 PM

22-11-2022

# TRAIN MODEL ON IBM



This screenshot shows the first part of an IBM Watson Studio notebook. The interface includes a top navigation bar with the IBM logo, a search bar, and user account information. The notebook title is "Model\_Building". The main content area has a title "Load The Dataset" and three code cells. The first cell imports the Google Colab drive and mounts it. The second and third cells define the training and testing data paths. Below this, a new section titled "Image Preprocessing" begins with the instruction "Import The ImageDataGenerator Library".

```
In [1]: from google.colab import drive
drive.mount('/content/drive')

Mounted at /content/drive

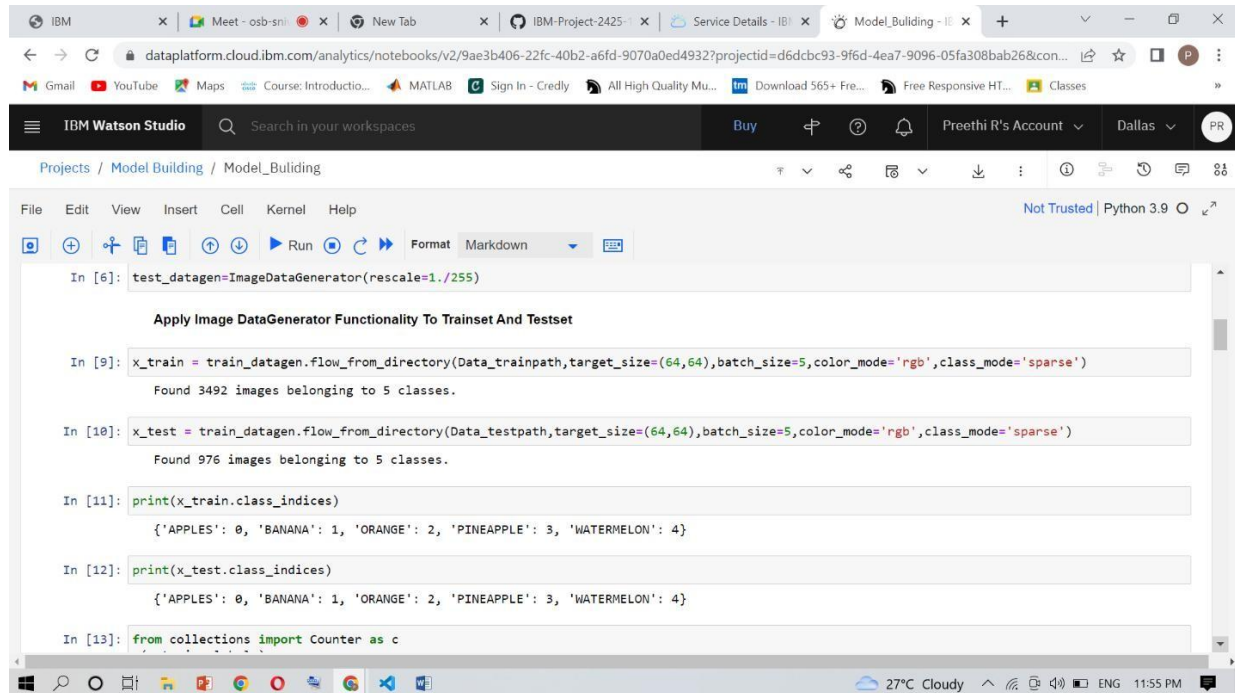
In [2]: Data_trainpath='/content/drive/MyDrive/Dataset/TRAIN_SET'

In [3]: Data_testpath='/content/drive/MyDrive/Dataset/TEST_SET'
```

## Image Preprocessing

Import The ImageDataGenerator Library

```
In [4]: from keras.preprocessing.image import ImageDataGenerator
```



This screenshot shows the continuation of the notebook. It starts with a code cell that creates an ImageDataGenerator with rescaling. This is followed by a section titled "Apply Image DataGenerator Functionality To Trainset And Testset". The next three code cells use the flow\_from\_directory method to load training and testing data, specifying target size, batch size, color mode, and class mode. The output of these cells shows the number of images found for each class. The final code cell imports the Counter class from the collections module.

```
In [6]: test_datagen=ImageDataGenerator(rescale=1./255)
```

### Apply Image DataGenerator Functionality To Trainset And Testset

```
In [9]: x_train = train_datagen.flow_from_directory(Data_trainpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
Found 3492 images belonging to 5 classes.

In [10]: x_test = train_datagen.flow_from_directory(Data_testpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
Found 976 images belonging to 5 classes.

In [11]: print(x_train.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}

In [12]: print(x_test.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}

In [13]: from collections import Counter as c
```

IBM Watson Studio interface showing a Jupyter Notebook titled "Image Preprocessing". The notebook is running on Python 3.9. The interface includes a top navigation bar with "IBM Watson Studio" and a search bar. The notebook content is as follows:

## Image Preprocessing

### Import The ImageDataGenerator Library

```
In [4]: from keras.preprocessing.image import ImageDataGenerator
```

### Configure ImageDataGenerator Class

```
In [5]: train_datagen = ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)
In [6]: test_datagen=ImageDataGenerator(rescale=1./255)
```

### Apply Image DataGenerator Functionality To Trainset And Testset

```
In [9]: x_train = train_datagen.flow_from_directory(Data_trainpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
Found 3492 images belonging to 5 classes.
```

Continuation of the Jupyter Notebook "Image Preprocessing". The notebook content is as follows:

```
In [6]: test_datagen=ImageDataGenerator(rescale=1./255)
```

### Apply Image DataGenerator Functionality To Trainset And Testset

```
In [9]: x_train = train_datagen.flow_from_directory(Data_trainpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
Found 3492 images belonging to 5 classes.
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Found 976 images belonging to 5 classes.
In [11]: print(x_train.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
In [12]: print(x_test.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
In [13]: from collections import Counter as c
```

IBM Watson Studio interface showing a Jupyter Notebook titled "Model\_Building". The notebook is in the "Model Building" project. The code defines a sequential model with CNN layers.

```
In [15]: model=Sequential()

Adding CNN Layers

First Convolution Layer and pooling

In [16]: model.add(Conv2D(32, (3, 3), input_shape=(64, 64, 3), activation='relu'))
model.add(MaxPooling2D(pool_size=(2, 2)))

Second Convolution Layer and pooling

In [17]: model.add(Conv2D(32, (3, 3), activation='relu'))
model.add(MaxPooling2D(pool_size=(2, 2)))

Flatten layer

In [18]: model.add(Flatten())
```

The interface includes a top navigation bar with "IBM Watson Studio", a search bar, and user account information. The bottom status bar shows "27°C Cloudy" and "11:55 PM".

Continuation of the Jupyter Notebook "Model\_Building". The code adds dense layers and displays the model summary.

```
In [19]: model.add(Dense(units=128, activation='relu'))
model.add(Dense(units=5, activation='softmax'))

In [20]: model.summary()
```

Model: "sequential"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 62, 62, 32)	896
max_pooling2d (MaxPooling2D)	(None, 31, 31, 32)	0
conv2d_1 (Conv2D)	(None, 29, 29, 32)	9248
max_pooling2d_1 (MaxPooling2D)	(None, 14, 14, 32)	0
flatten (Flatten)	(None, 6272)	0

The interface includes a top navigation bar with "IBM Watson Studio", a search bar, and user account information. The bottom status bar shows "27°C Cloudy" and "11:55 PM".