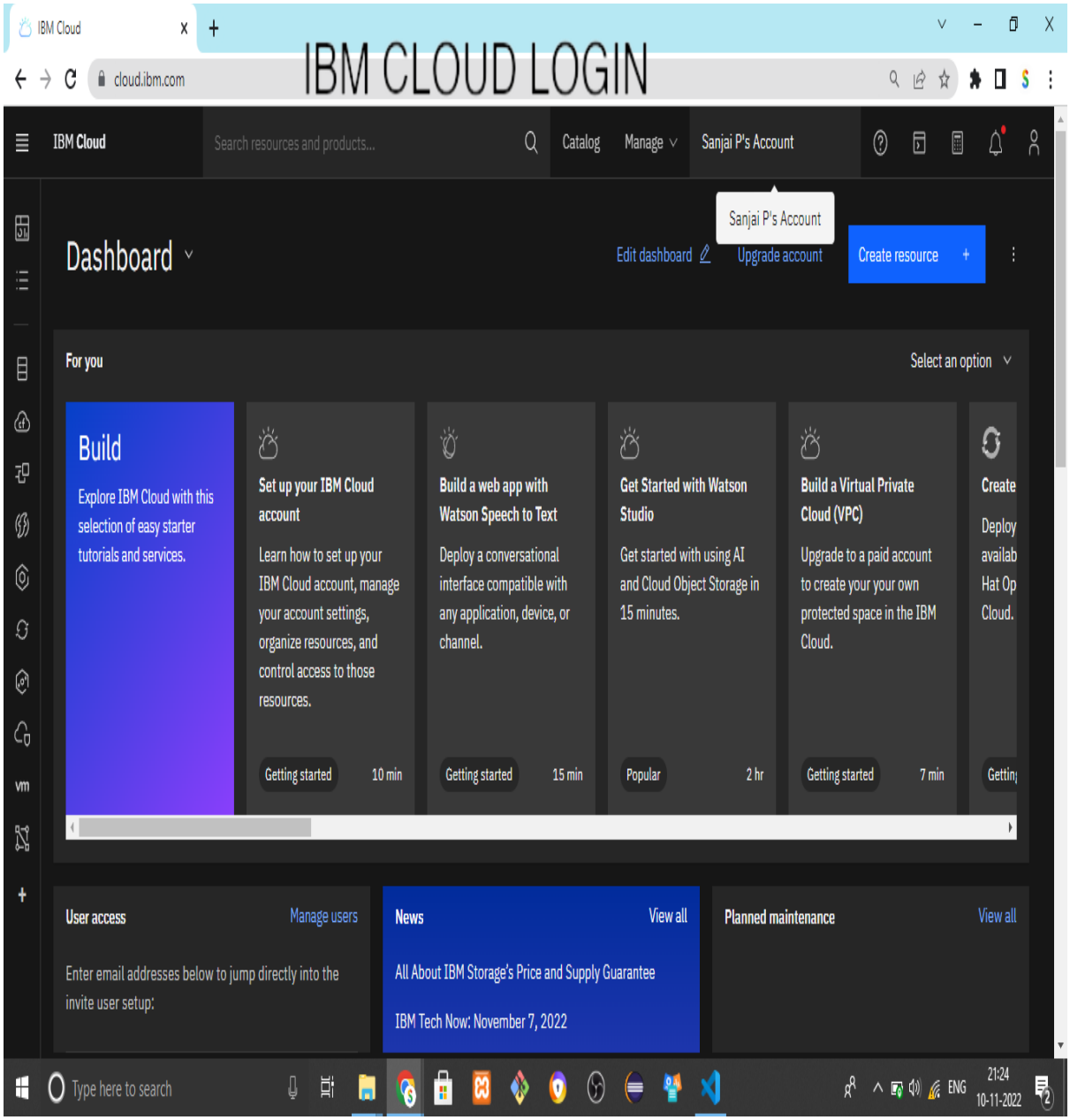
IBM Cloud
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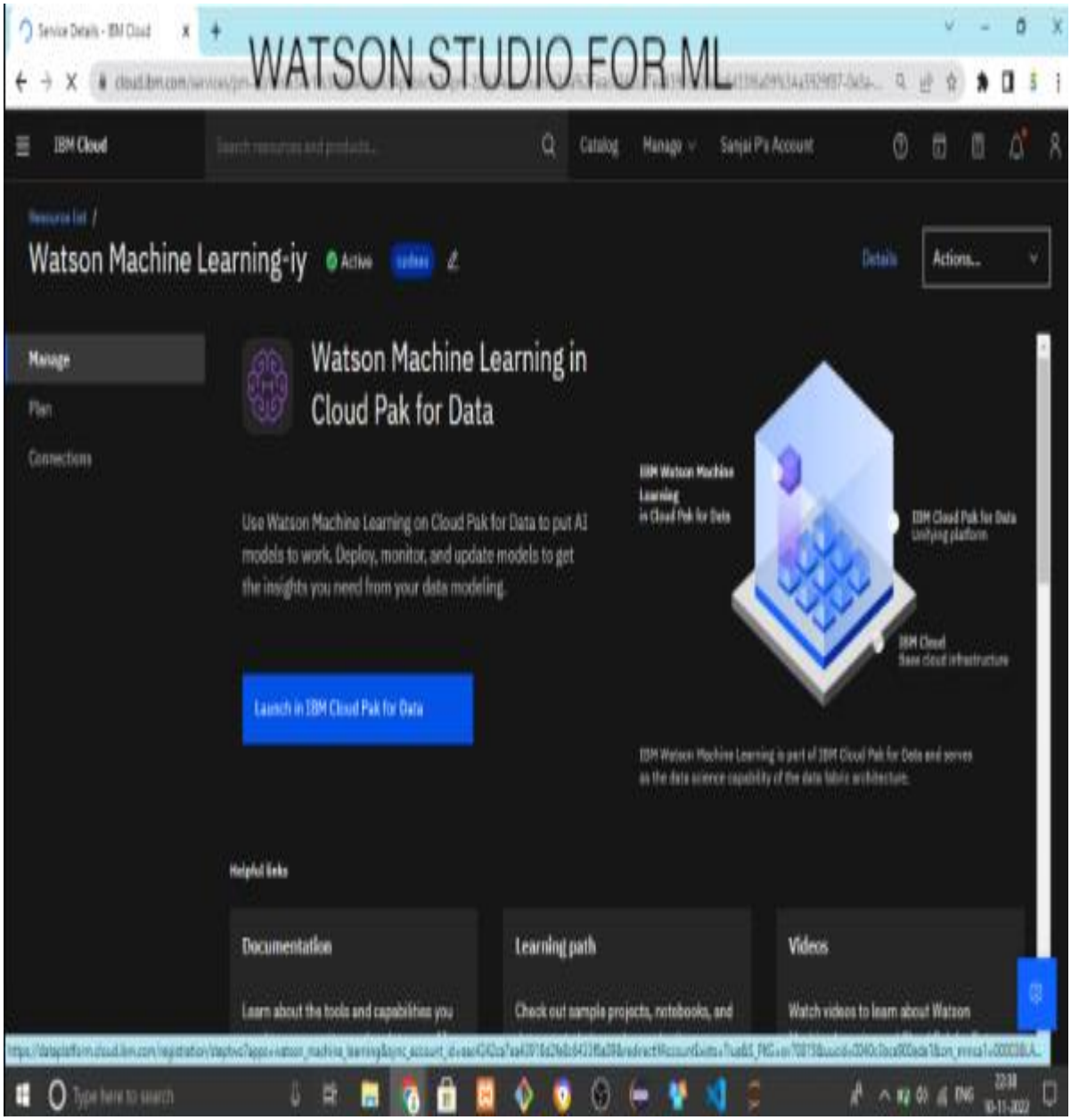
Search resources and products...
Catalog
Manage
Sanjai P's Account
Sanjai P's Account
Dashboard
Edit dashboard
Upgrade account
Create resource
For you
Select an option
Build
Explore IBM Cloud with this selection of easy starter tutorials and services.
Set up your IBM Cloud account
Learn how to set up your IBM Cloud account, manage your account settings, organize resources, and control access to those resources.
Getting started
10 min
Build a web app with Watson Speech to Text
Deploy a conversational interface compatible with any application, device, or channel.
Getting started
15 min
Get Started with Watson Studio
Get started with using AI and Cloud Object Storage in 15 minutes.
Popular
2 hr
Build a Virtual Private Cloud (VPC)
Upgrade to a paid account to create your your own protected space in the IBM Cloud.
Getting started
7 min
Create
Deploy
availab
Hat Op
Cloud.
Getting
User access
Manage users
Enter email addresses below to jump directly into the invite user setup:
News
View all
All About IBM Storage's Price and Supply Guarantee
IBM Tech Now: November 7, 2022
Planned maintenance
View all
Type here to search
ENG
21:24
10-11-2022


WATSON STUDIO FOR ML
IBM Cloud
Catalog
Manage
Sanjai P's Account
Watson Machine Learning-iy
Active
Details
Actions...
Manage
Plan
Connections
Watson Machine Learning in Cloud Pak for Data
Use Watson Machine Learning on Cloud Pak for Data to put AI models to work. Deploy, monitor, and update models to get the insights you need from your data modeling.
Launch in IBM Cloud Pak for Data
IBM Watson Machine Learning in Cloud Pak for Data
IBM Cloud Pak for Data Unifying platform
IBM Cloud Base cloud infrastructure
IBM Watson Machine Learning is part of IBM Cloud Pak for Data and serves as the data science capability of the data fabric architecture.
Helpful links
Documentation
Learn about the tools and capabilities you
Learning path
Check out sample projects, notebooks, and
Videos
Watch videos to learn about Watson
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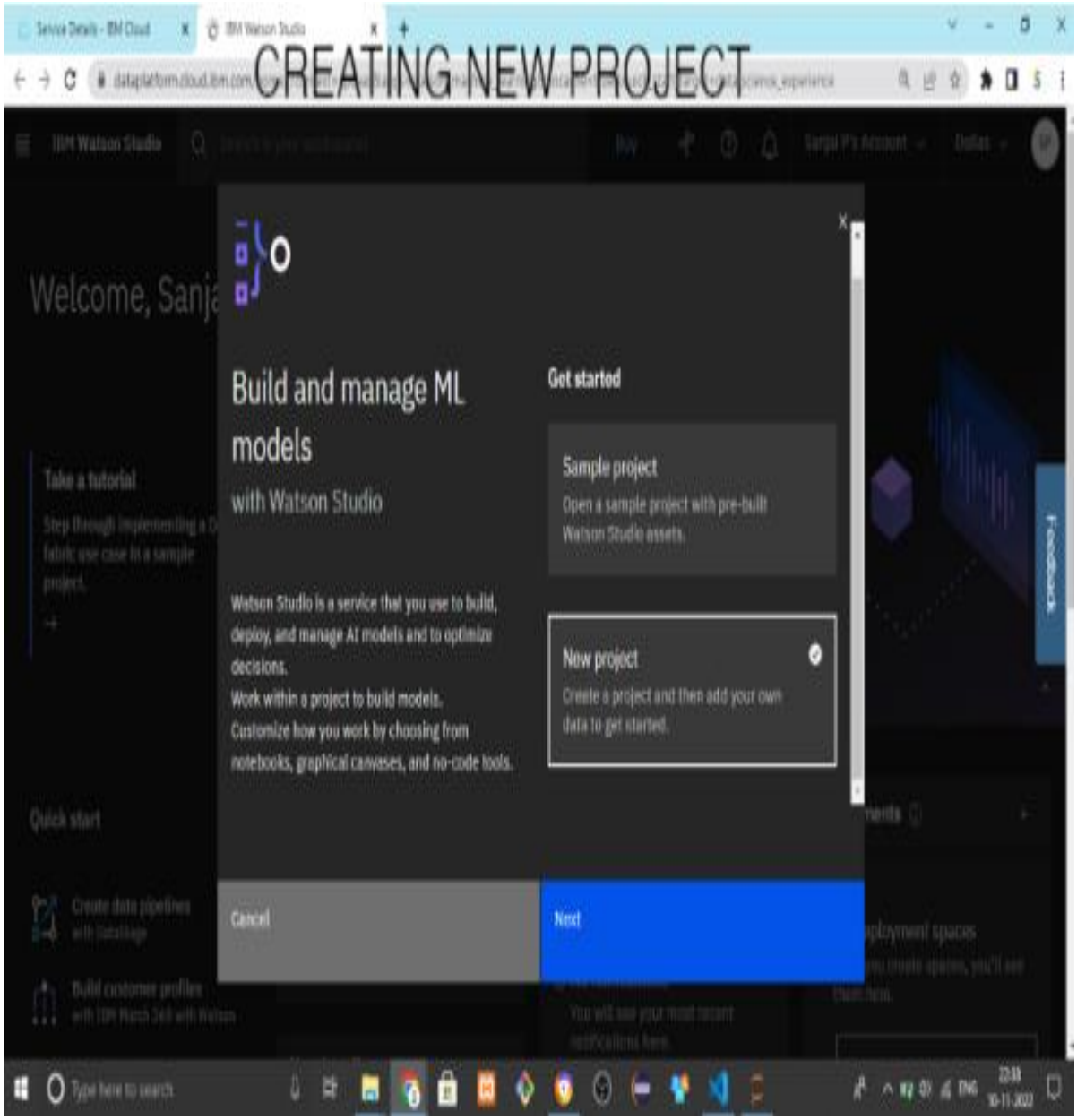
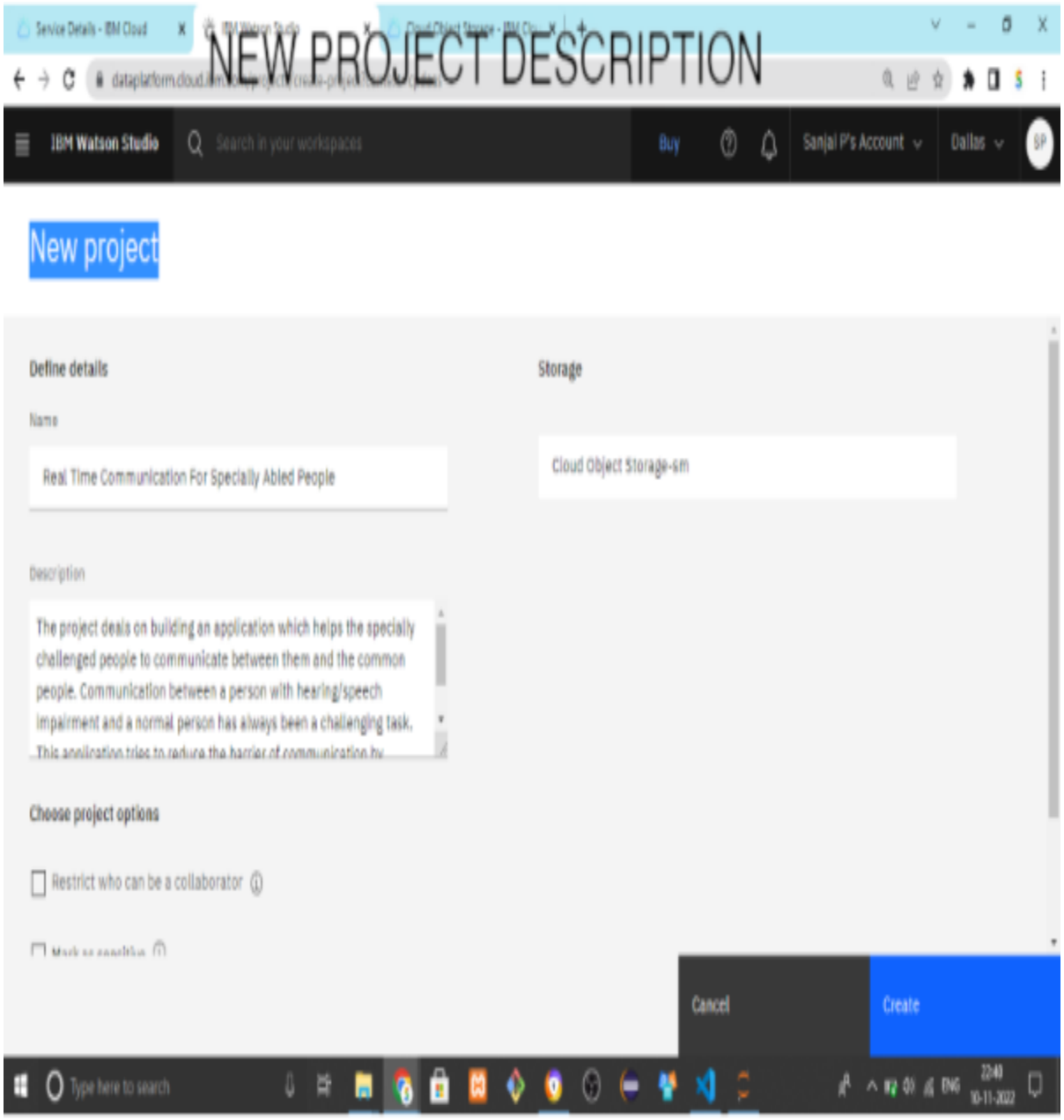
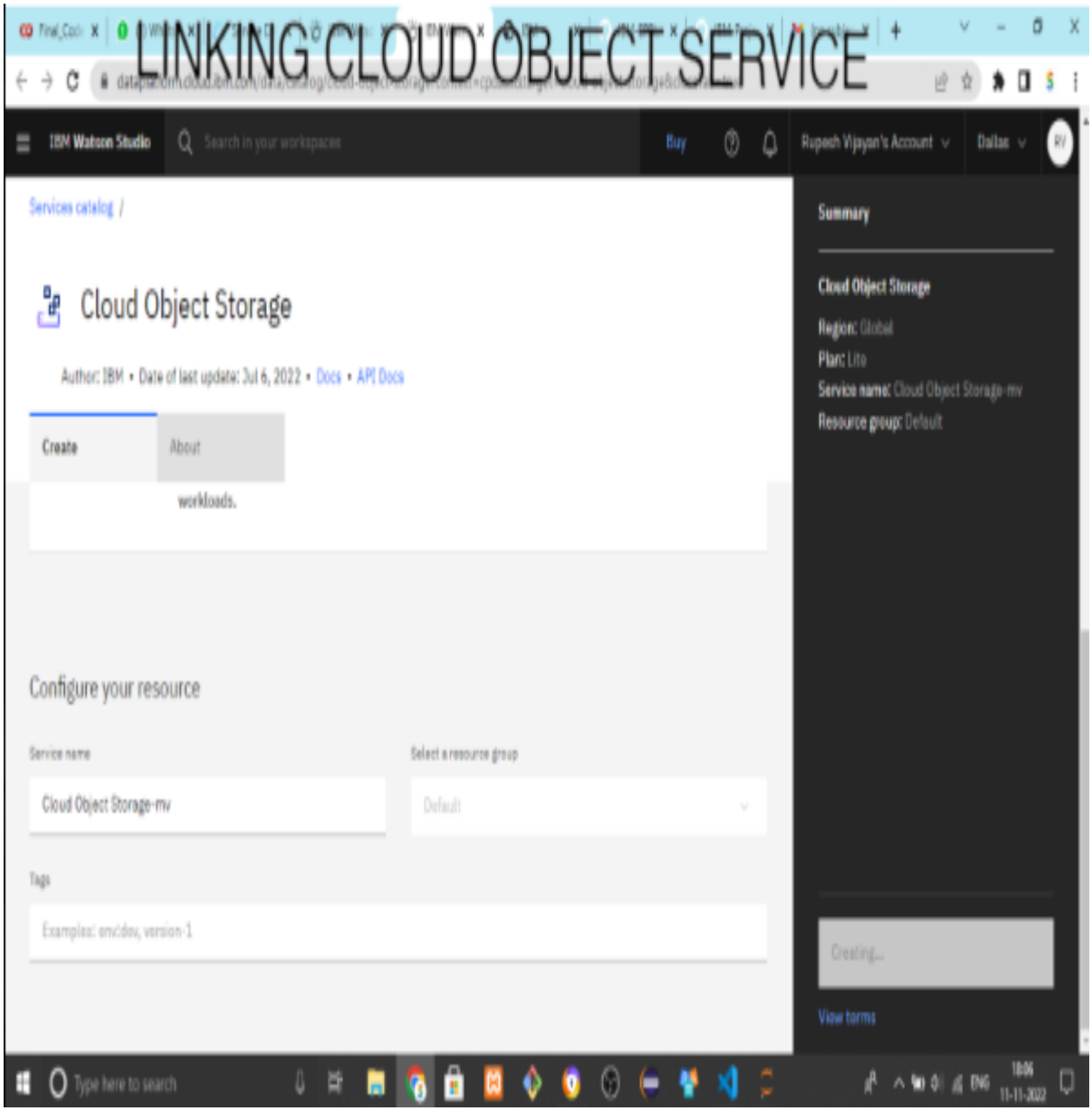
CREATING NEW PROJECT



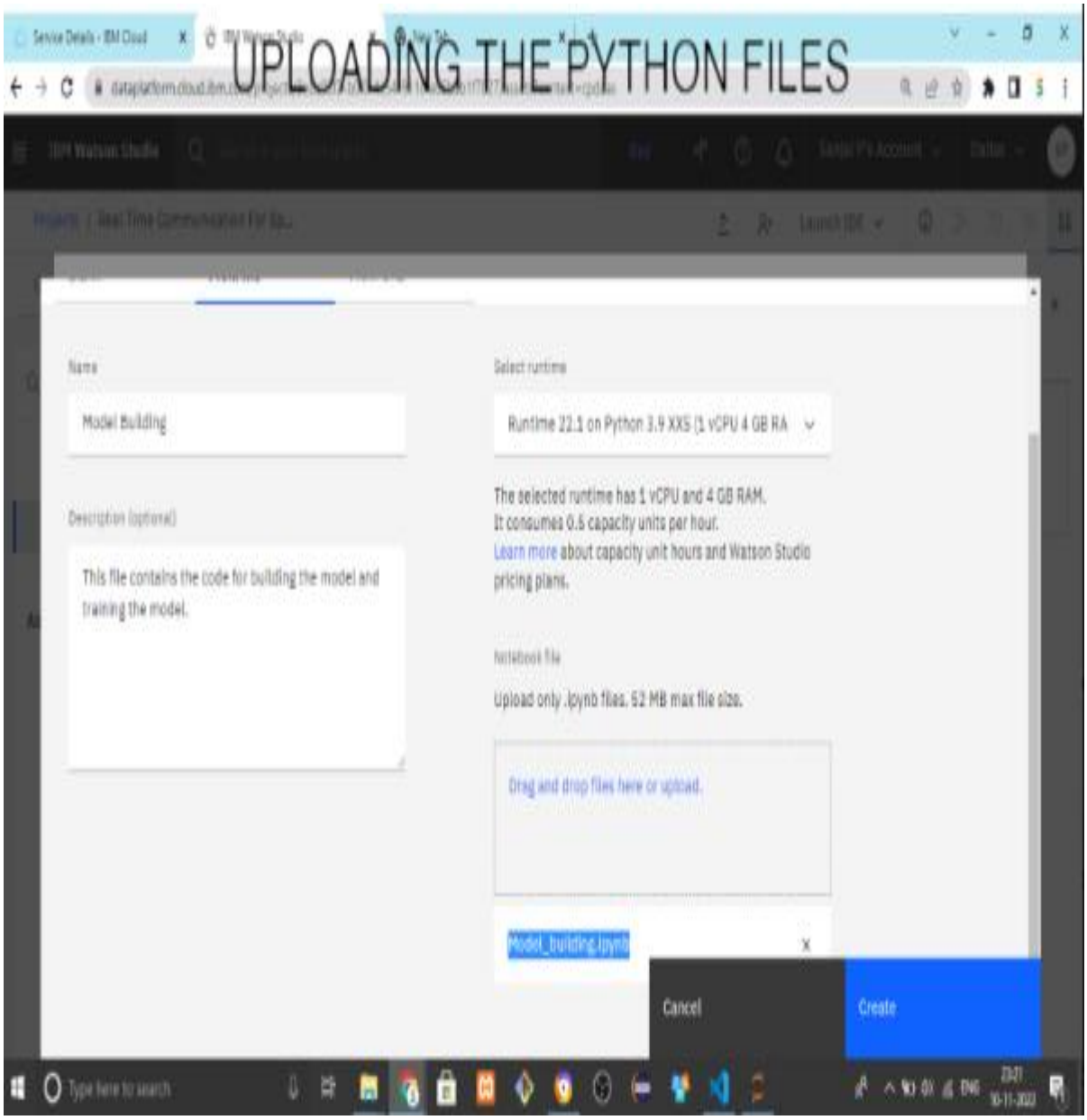
NEW PROJECT DESCRIPTION



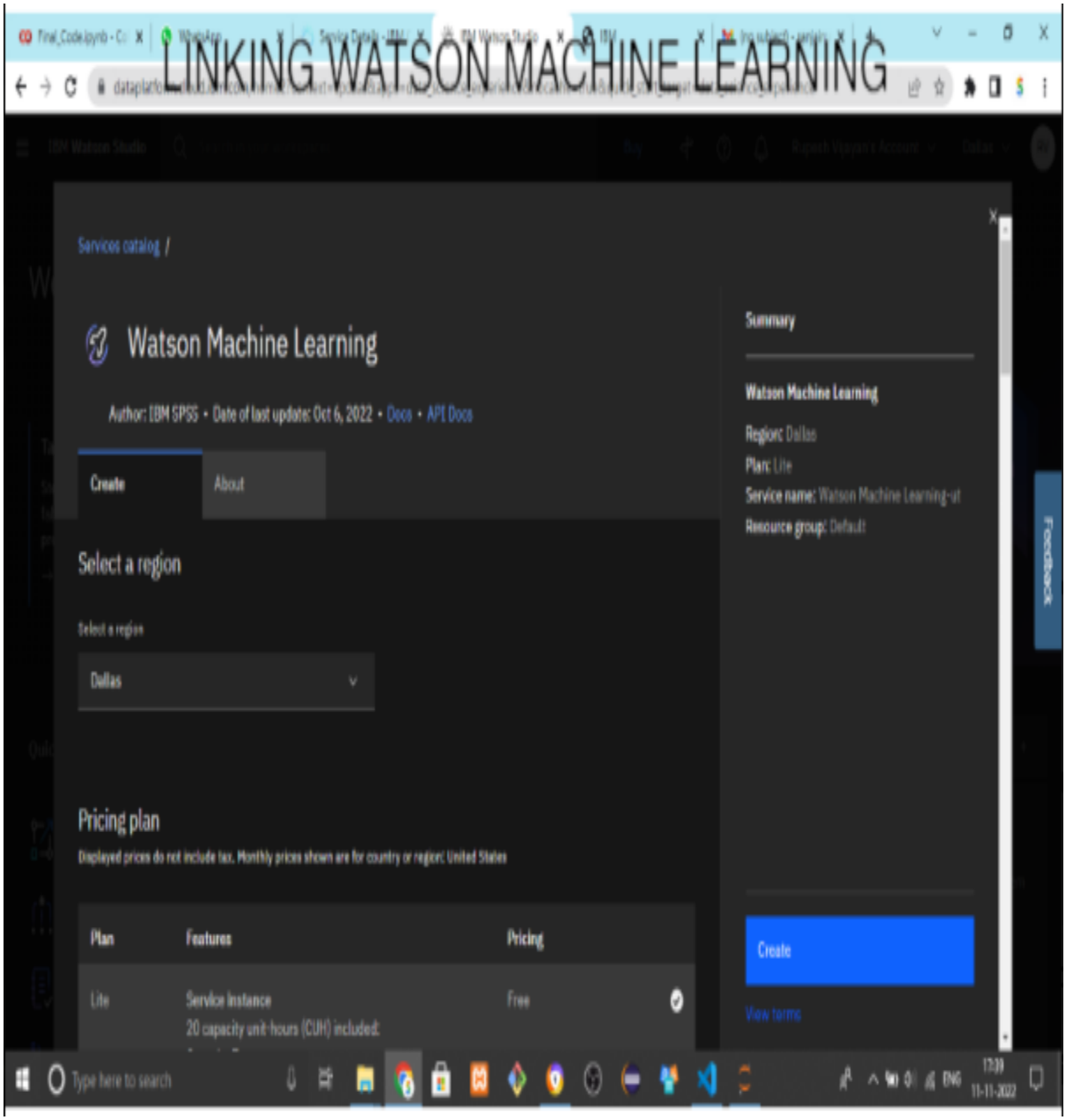
LINKING CLOUD OBJECT SERVICE



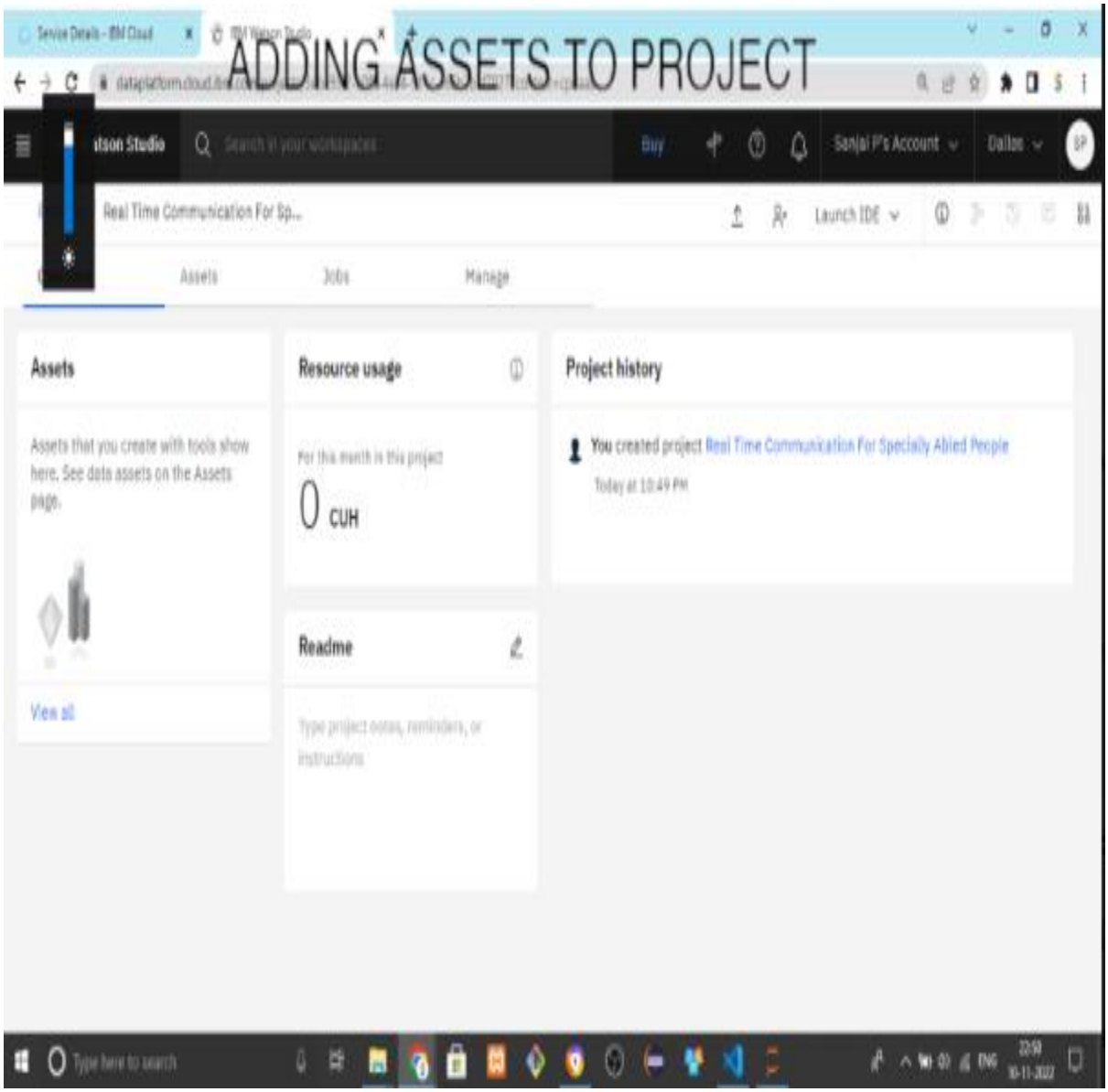
UPLOADING THE PYTHON FILES

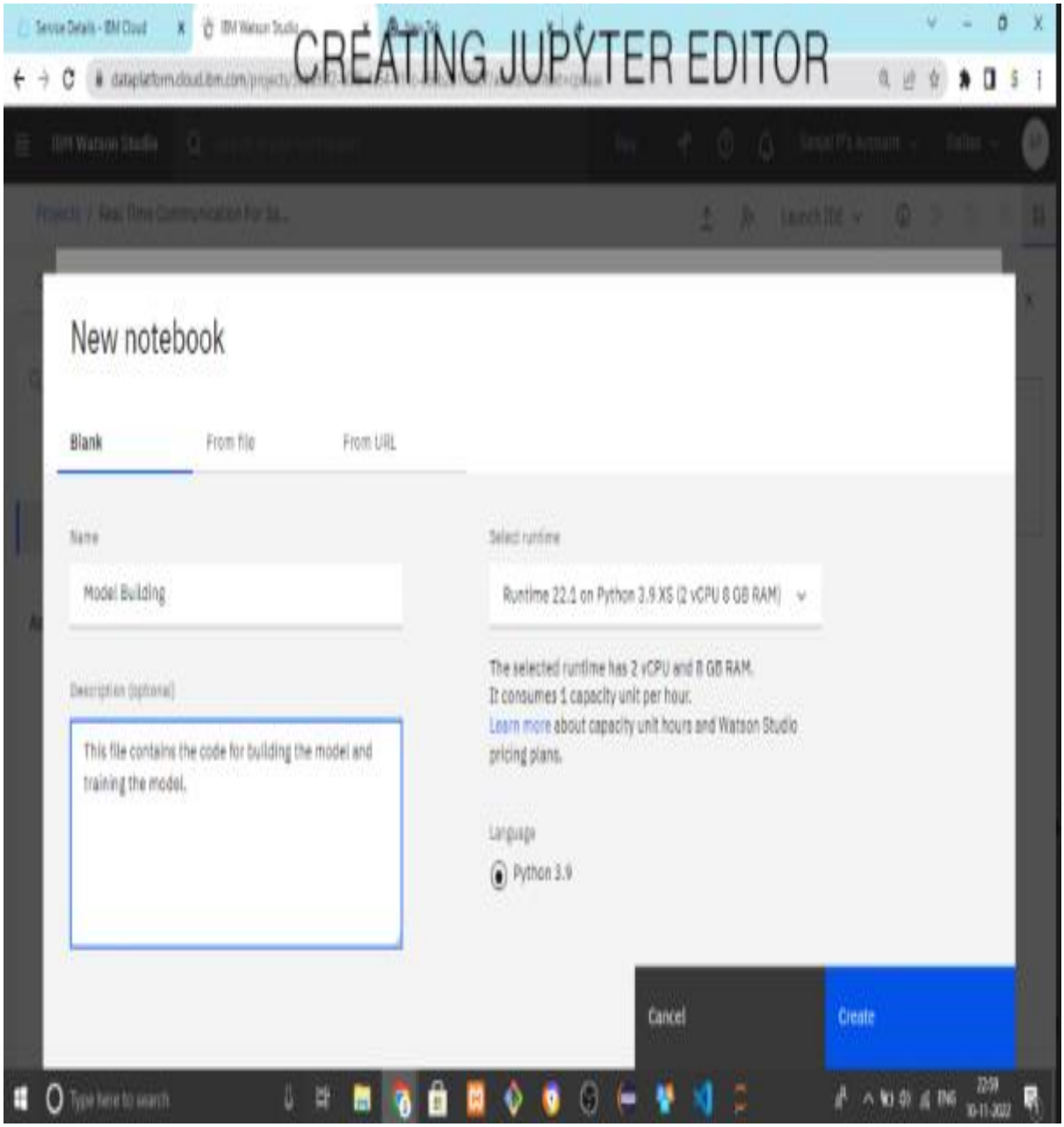


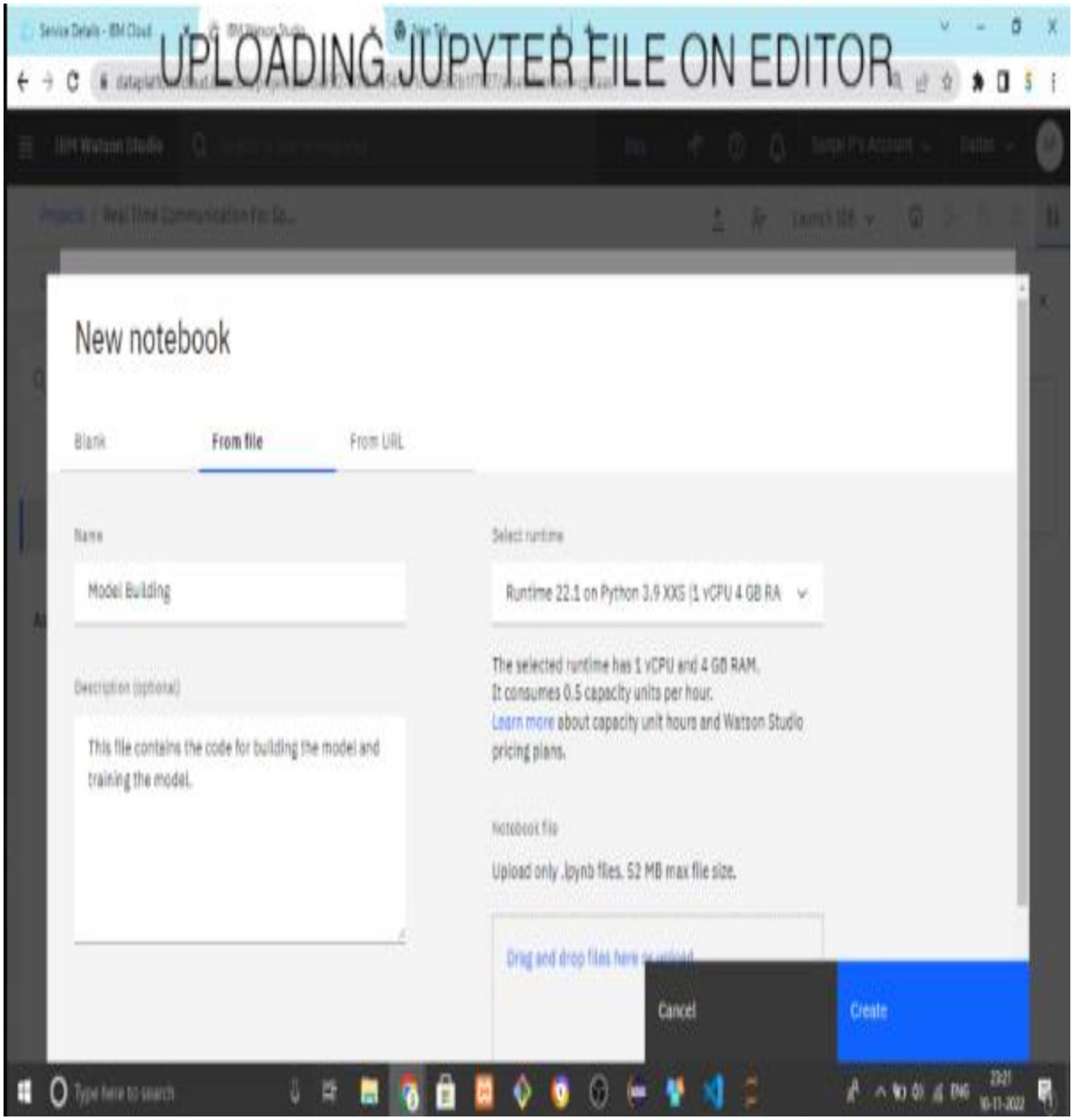
LINKING WATSON MACHINE LEARNING

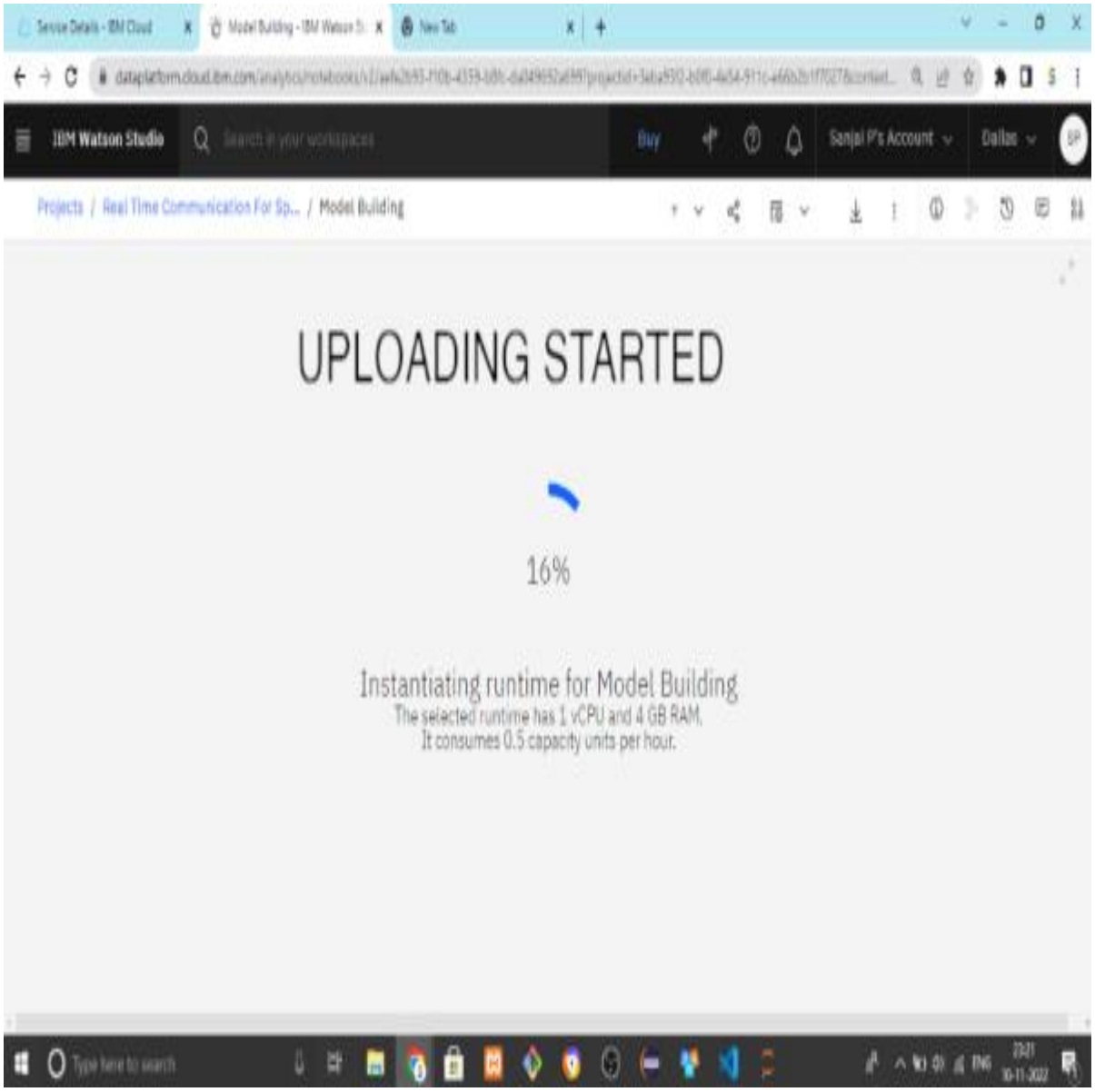


ADDING ASSETS TO PROJECT




CREATING JUPYTER EDITOR
New notebook
Blank
From file
From URL
Name
Model Building
Description (optional)
This file contains the code for building the model and training the model.
Select runtime
Runtime 22.1 on Python 3.9 XS (2 vCPU 8 GB RAM)
The selected runtime has 2 vCPU and 8 GB RAM.
It consumes 1 capacity unit per hour.
Learn more about capacity unit hours and Watson Studio pricing plans.
Language
Python 3.9
Cancel
Create


UPLOADING JUPYTER FILE ON EDITOR
New notebook
Blank
From file
From URL
Name
Model Building
Description (optional)
This file contains the code for building the model and training the model.
Select runtime
Runtime 22.1 on Python 3.9 XXS (1 vCPU 4 GB RA
The selected runtime has 1 vCPU and 4 GB RAM.
It consumes 0.5 capacity units per hour.
Learn more about capacity unit hours and Watson Studio pricing plans.
Notebook file
Upload only .ipynb files. 52 MB max file size.
Drag and drop files here or upload
Cancel
Create


IBM Watson Studio
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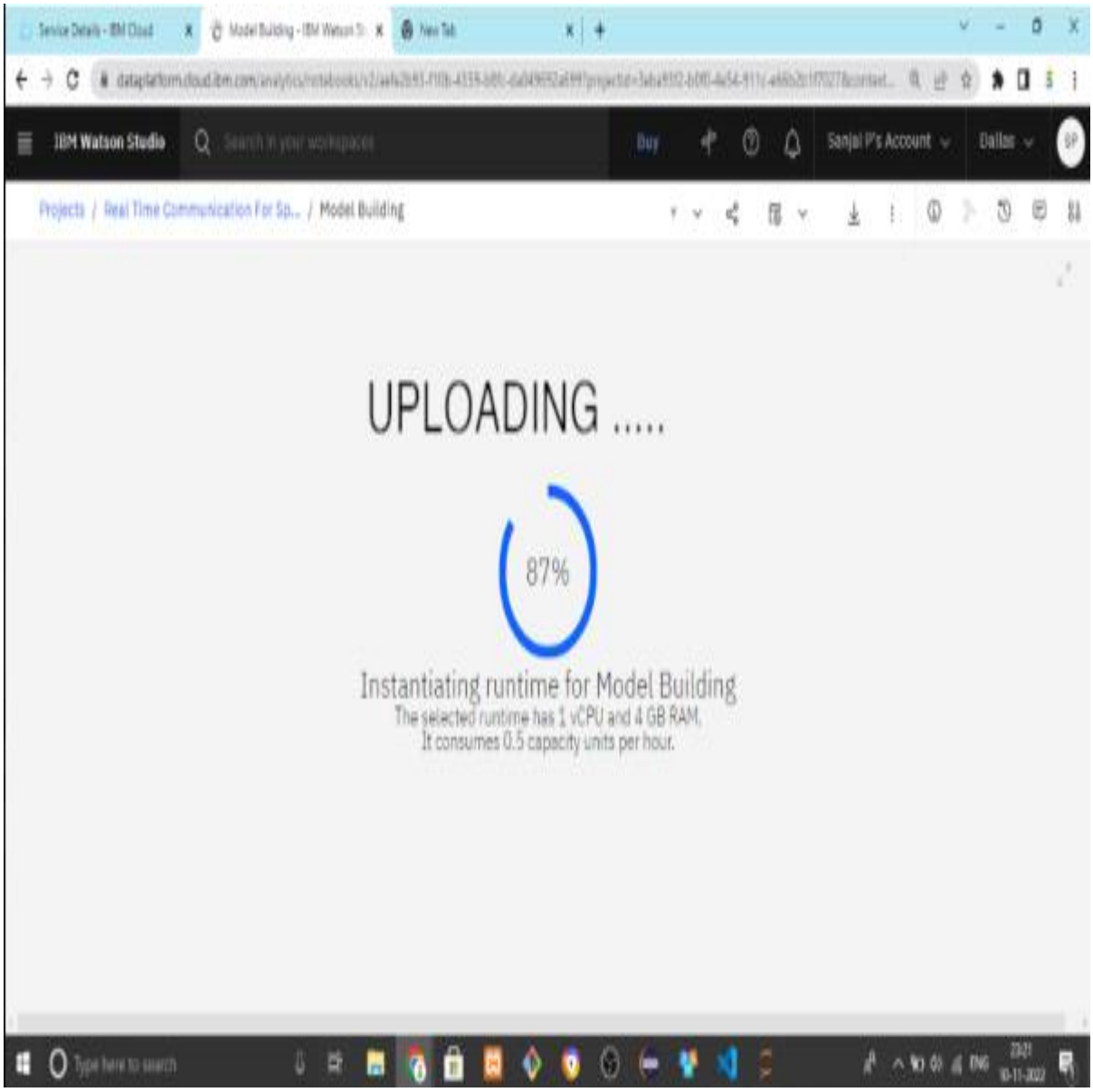
Dallas
Projects / Real Time Communication For Sp... / Model Building
UPLOADING STARTED
16%
Instantiating runtime for Model Building
The selected runtime has 1 vCPU and 4 GB RAM.
It consumes 0.5 capacity units per hour.


IBM Watson Studio
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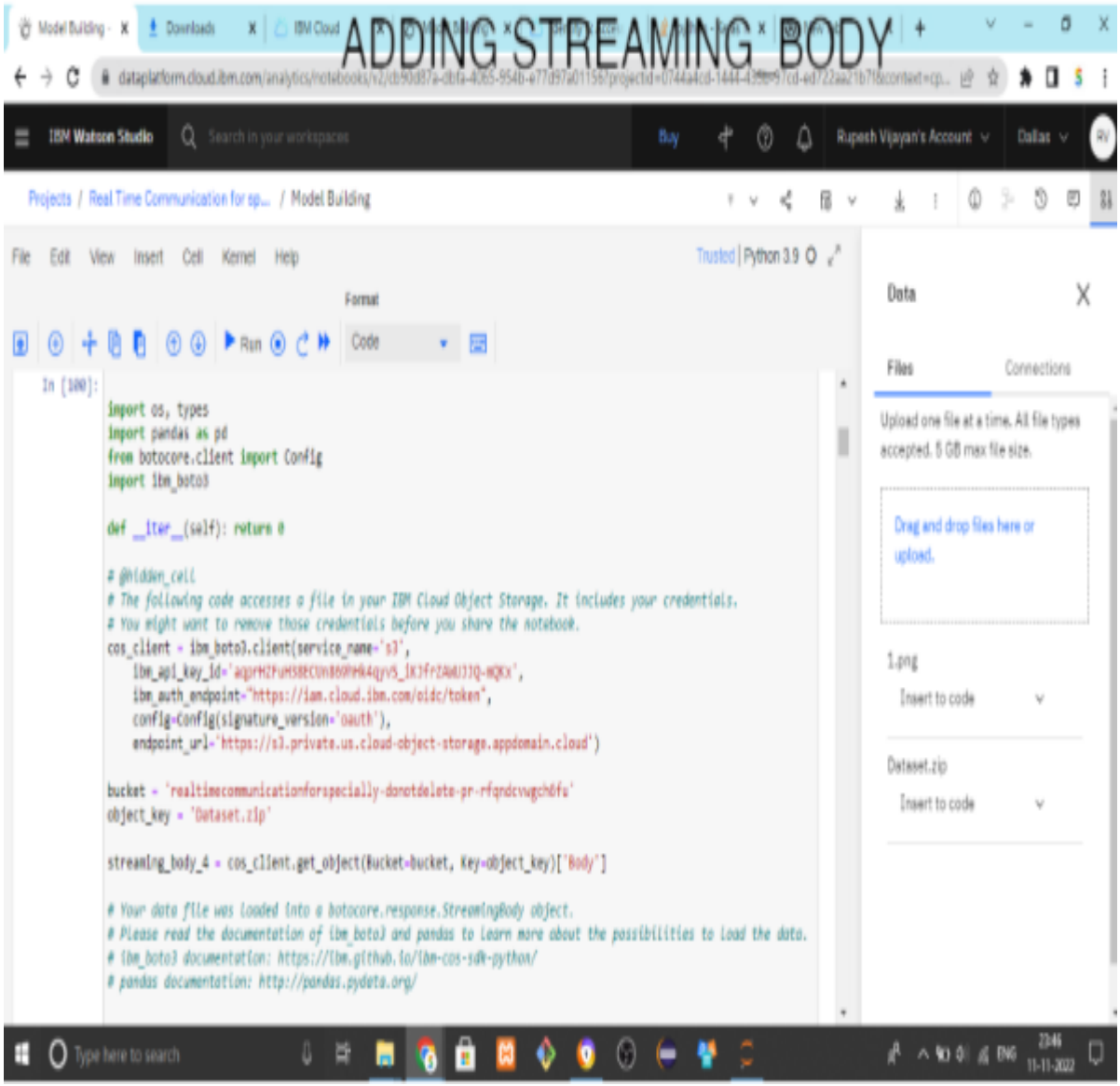
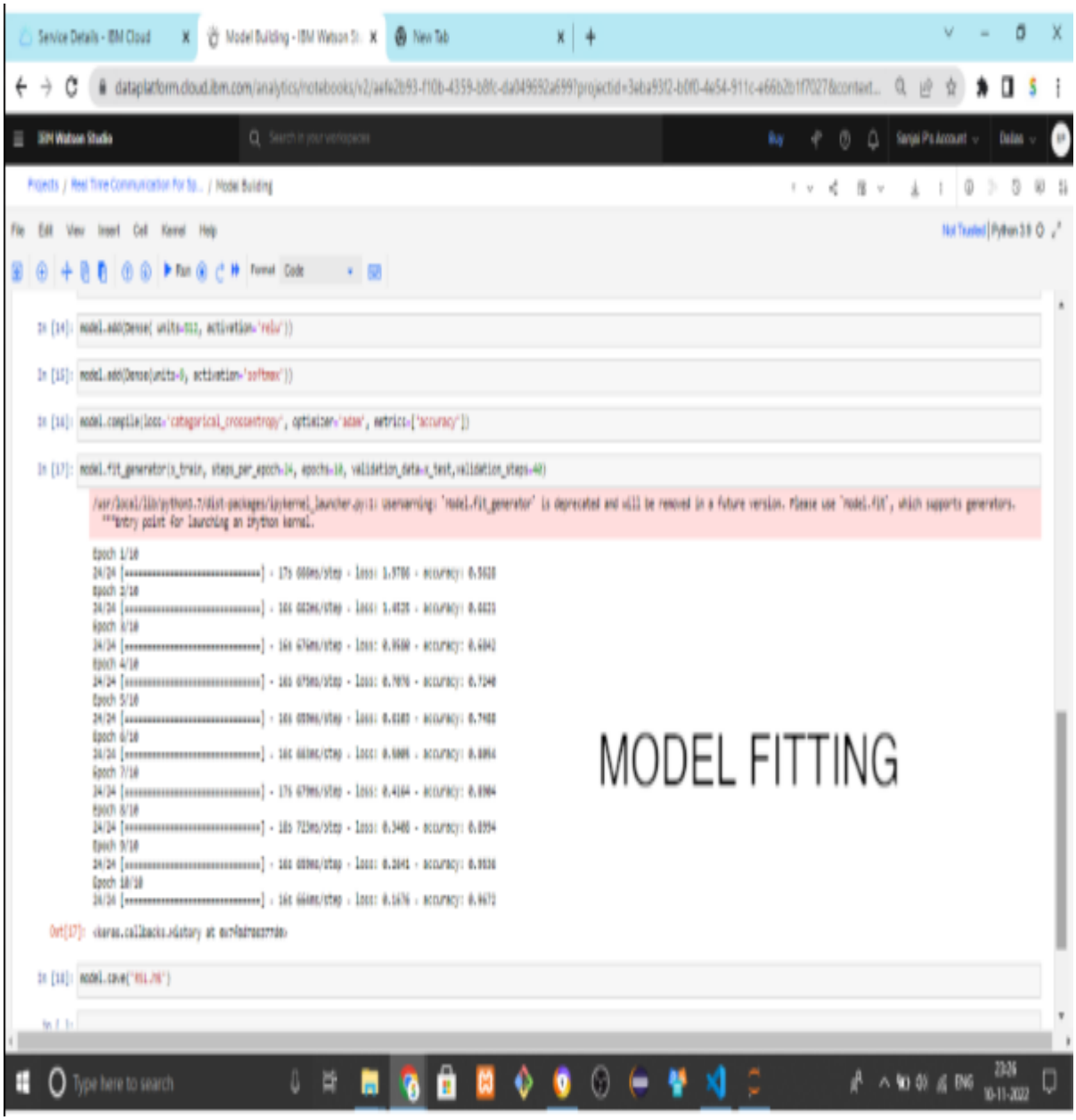
Dallas
Projects / Real Time Communication For Sp... / Model Building
UPLOADING .....
87%
Instantiating runtime for Model Building
The selected runtime has 1 vCPU and 4 GB RAM.
It consumes 0.5 capacity units per hour.

ADDING STREAMING BODY




Service Details - IBM Cloud
Model Building - IBM Watson St
New Tab
dataplatform.cloud.ibm.com/analytics/notebooks/v2/aefe2b93-f10b-4359-b8fc-da049692a699?projectid=3eba9302-b0f0-4e54-911c-e66b2b1f7027&context...
IBM Watson Studio
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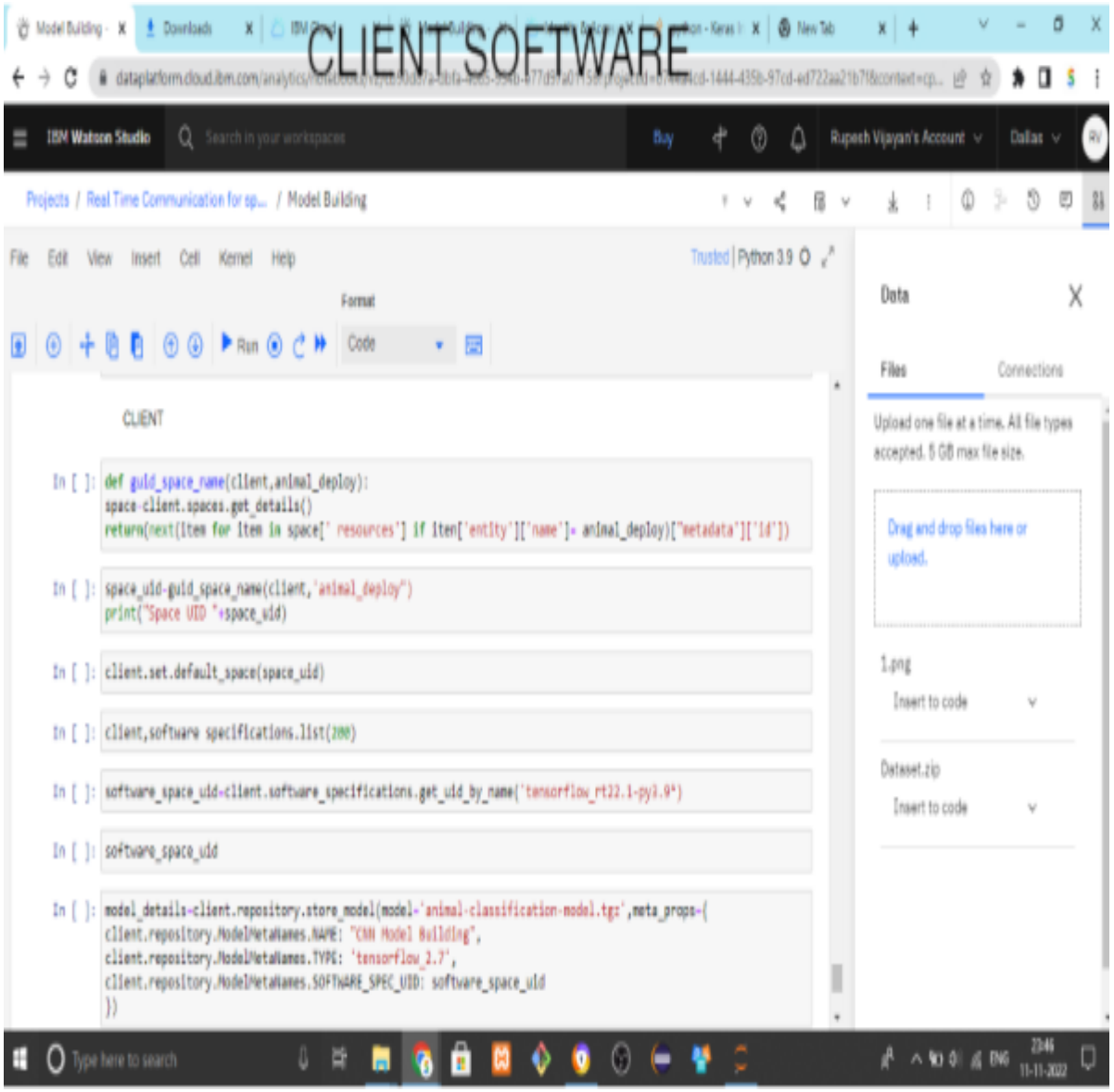
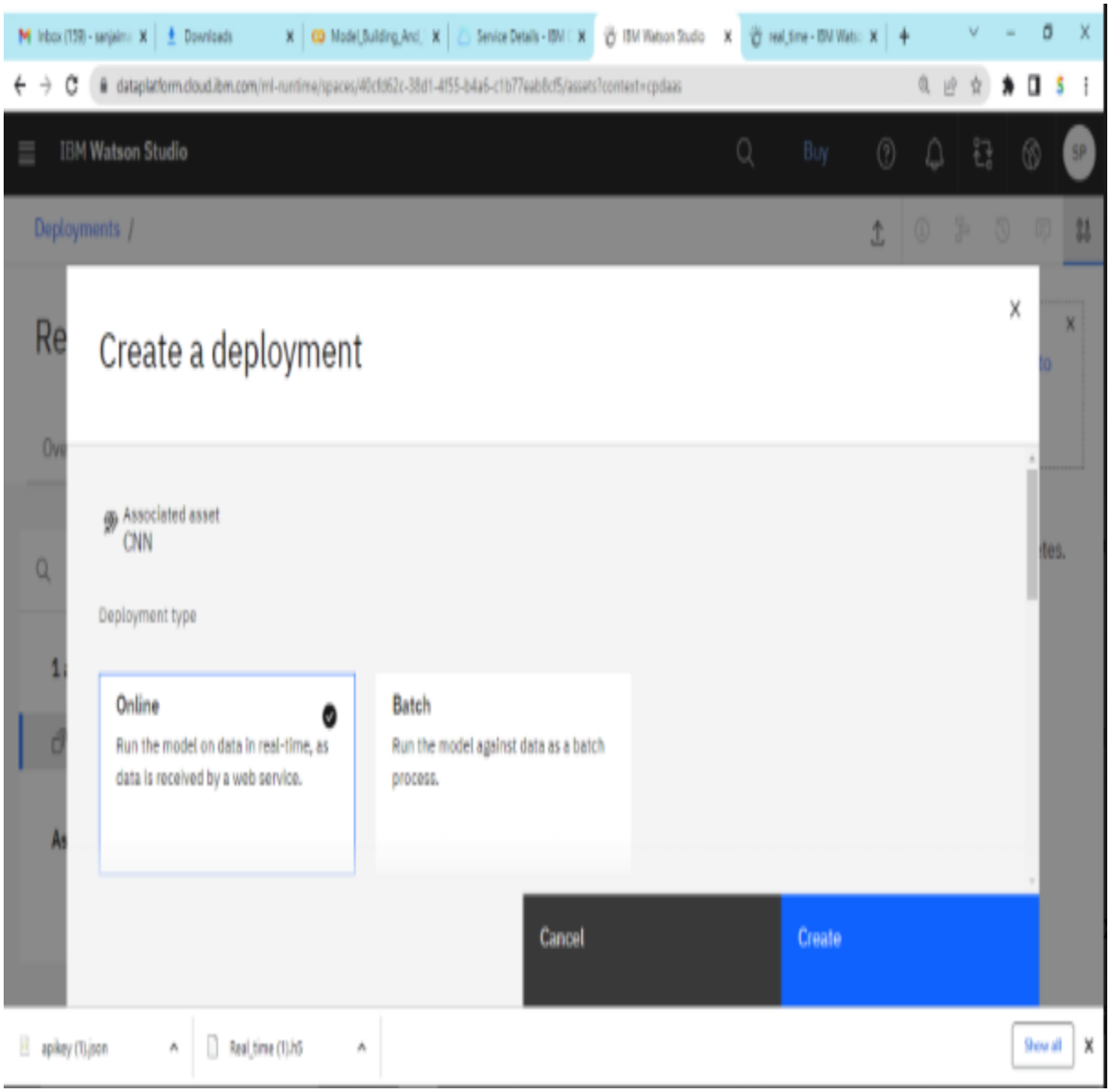
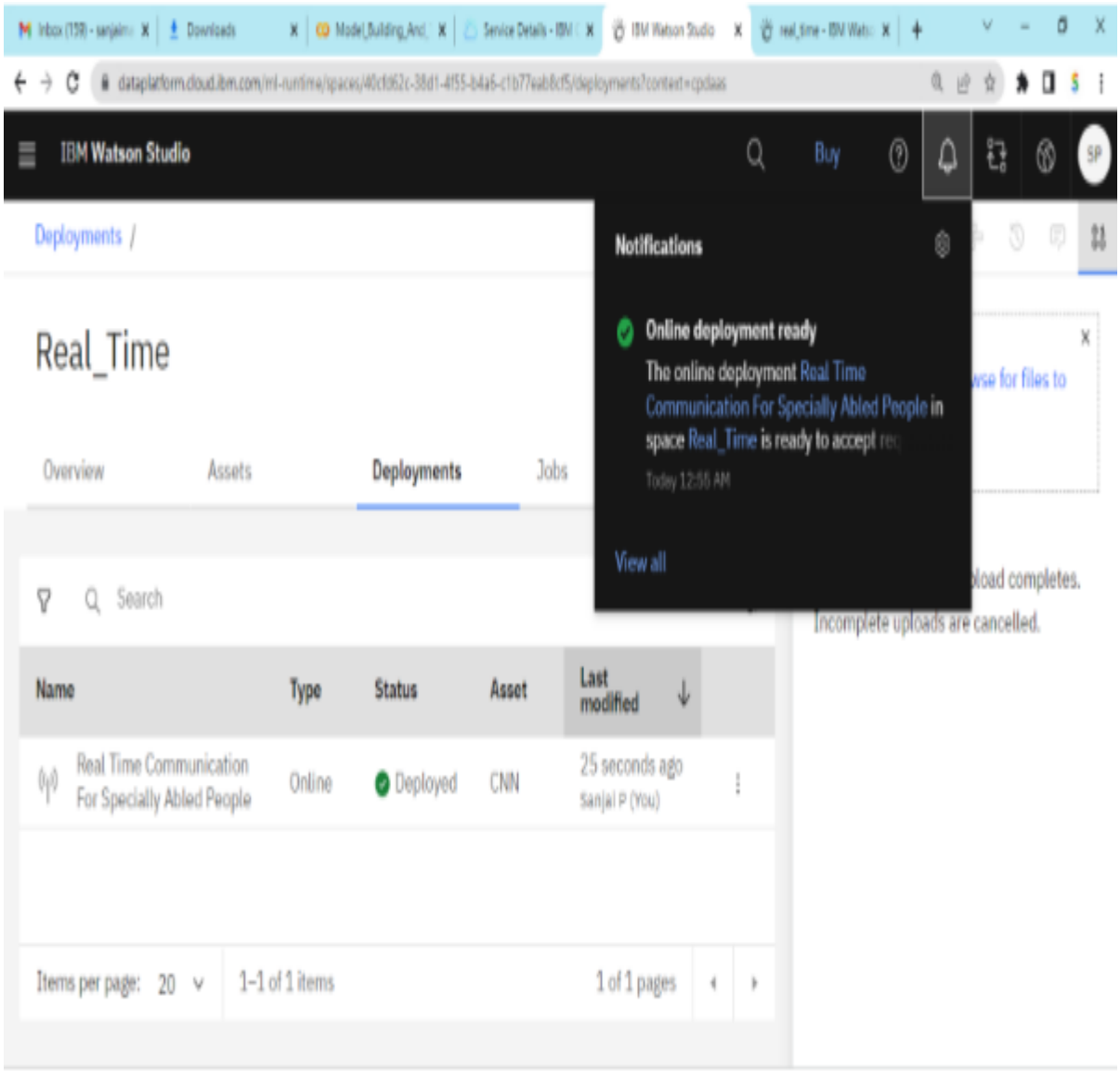
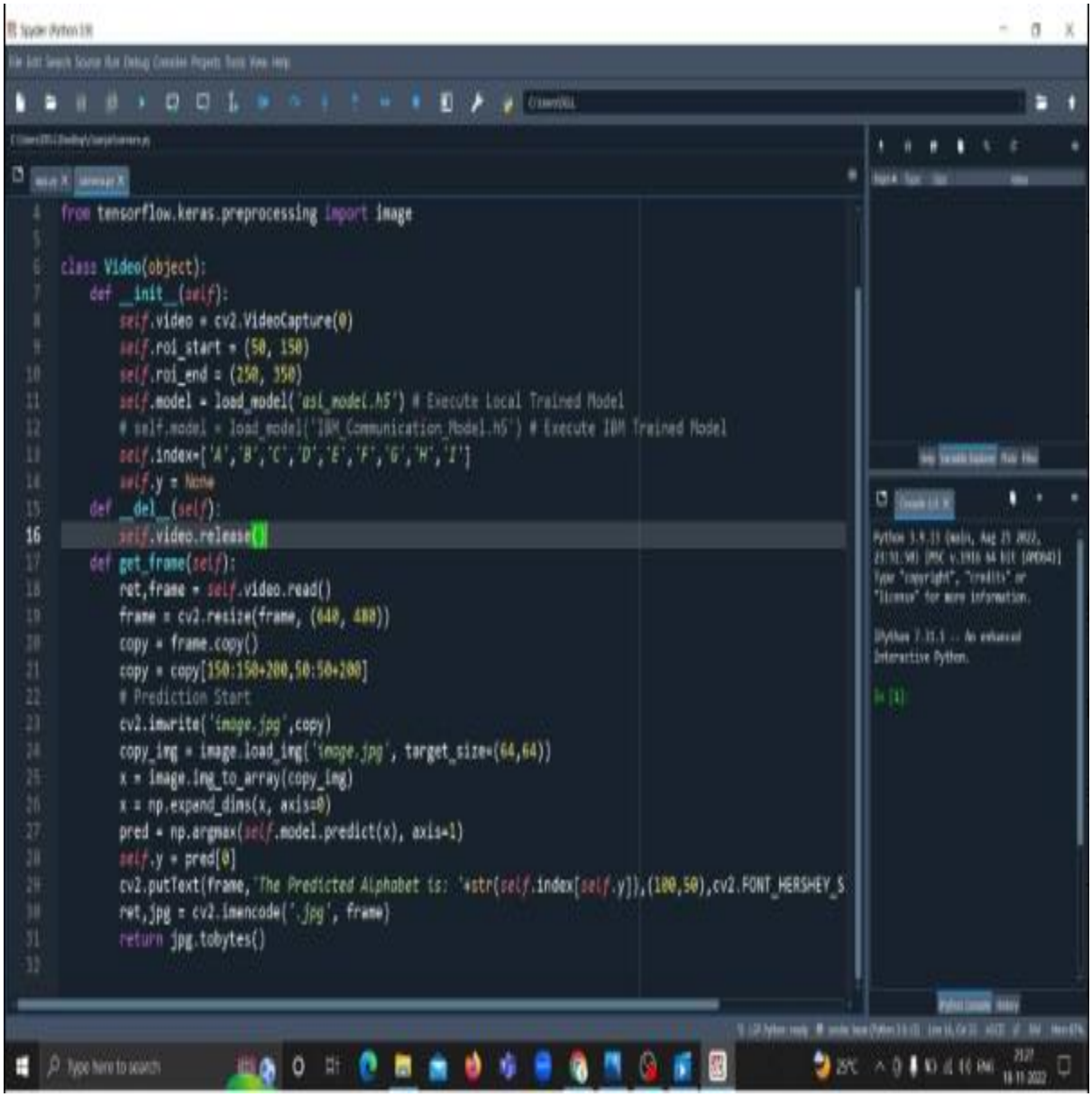
Projects / Real Time Communication For Sp... / Model Building
File Edit View Insert Cell Kernel Help
Not Trusted | Python 3.9
Run
Format Code
In [14]: model.add(Dense(units=512, activation='relu'))
In [15]: model.add(Dense(units=6, activation='softmax'))
In [16]: model.compile(loss='categorical_crossentropy', optimizer='adam', metrics=['accuracy'])
In [17]: model.fit_generator(x_train, steps_per_epoch=24, epochs=10, validation_data=x_test,validation_steps=40)
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:1: UserWarning: 'model.fit_generator' is deprecated and will be removed in a future version. Please use 'model.fit', which supports generators.
"""Entry point for launching an IPython kernel.
Epoch 1/10
24/24 [==============================] - 17s 688ms/step - loss: 1.5788 - accuracy: 0.5618
Epoch 2/10
24/24 [==============================] - 16s 682ms/step - loss: 1.4128 - accuracy: 0.6823
Epoch 3/10
24/24 [==============================] - 16s 674ms/step - loss: 0.9598 - accuracy: 0.6842
Epoch 4/10
24/24 [==============================] - 16s 670ms/step - loss: 0.7976 - accuracy: 0.7240
Epoch 5/10
24/24 [==============================] - 16s 689ms/step - loss: 0.6183 - accuracy: 0.7488
Epoch 6/10
24/24 [==============================] - 16s 661ms/step - loss: 0.6008 - accuracy: 0.8054
Epoch 7/10
24/24 [==============================] - 17s 679ms/step - loss: 0.4164 - accuracy: 0.8984
Epoch 8/10
24/24 [==============================] - 18s 723ms/step - loss: 0.3408 - accuracy: 0.8954
Epoch 9/10
24/24 [==============================] - 16s 689ms/step - loss: 0.2641 - accuracy: 0.9038
Epoch 10/10
24/24 [==============================] - 16s 664ms/step - loss: 0.1676 - accuracy: 0.9671
Out[17]: <keras.callbacks.History at 0x7fd7ea227f10>
In [18]: model.save('ASL.h5')
MODEL FITTING
Type here to search
ENG
22:26
10-11-2022

CLIENT SOFTWARE



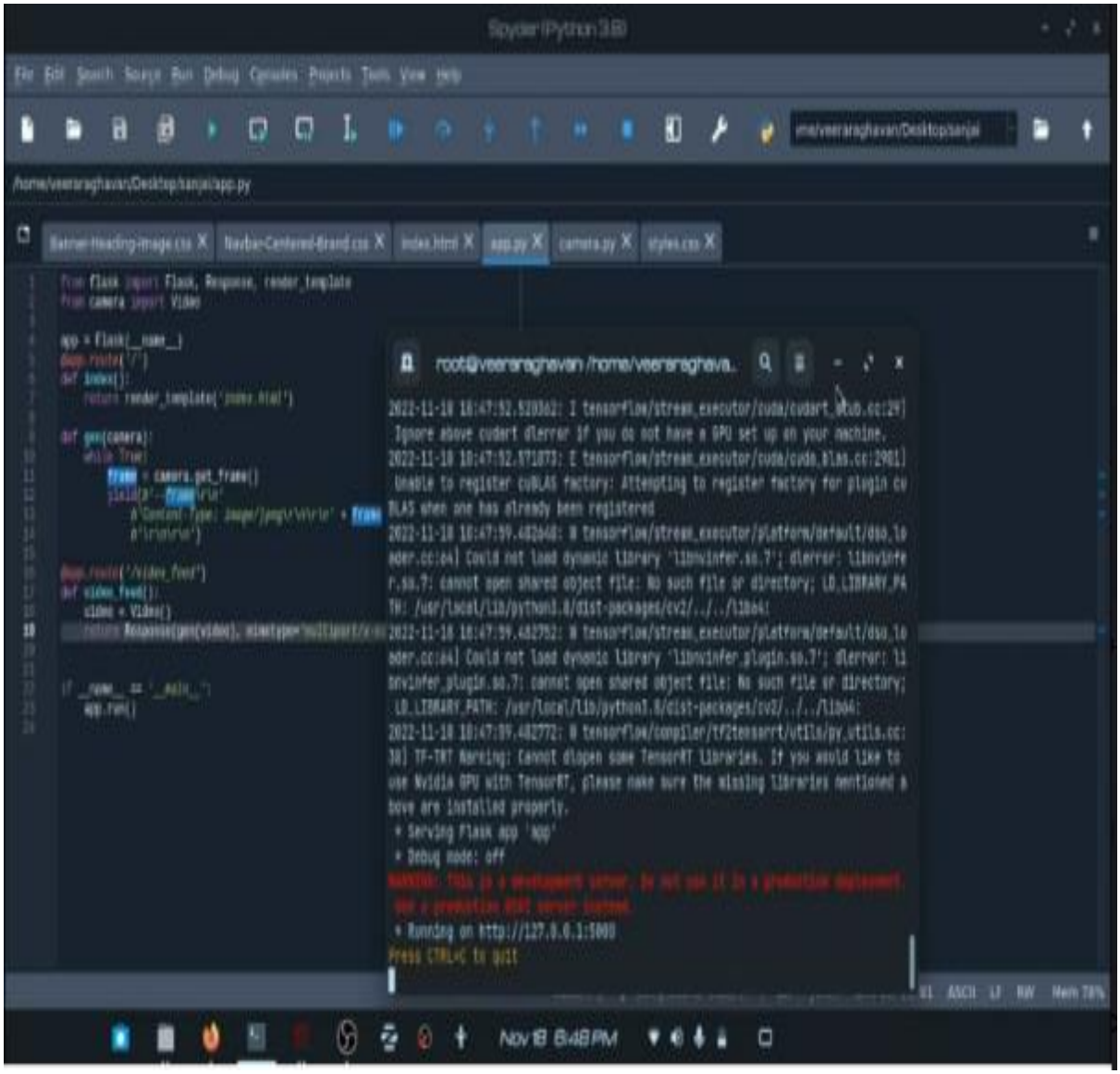

IBM Watson Studio
Buy
Deployments /
Create a deployment
Associated asset
CNN
Deployment type
Online
Run the model on data in real-time, as data is received by a web service.
Batch
Run the model against data as a batch process.
Cancel
Create
apikey (1).json
Real_time (1).h5
Show all

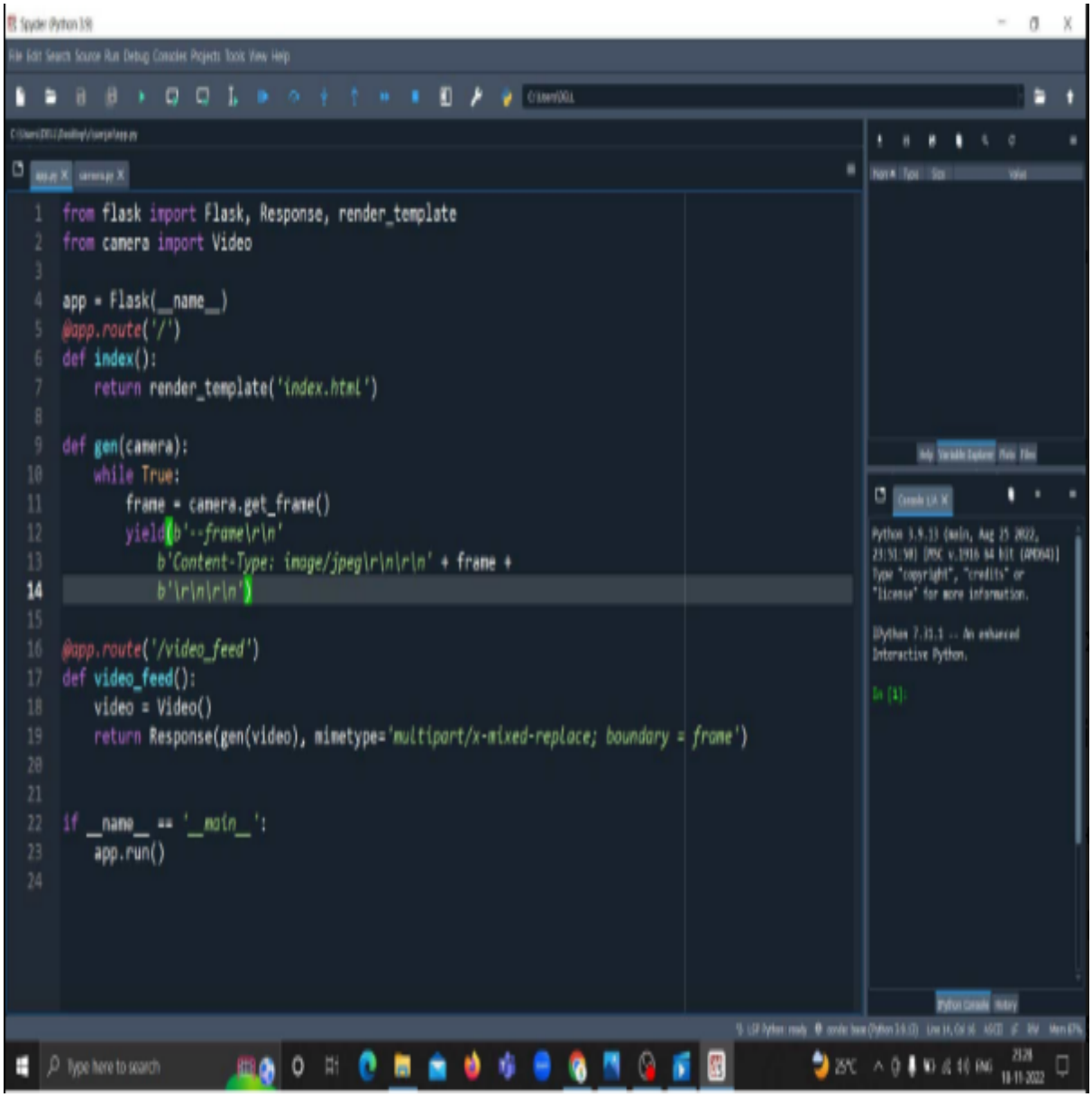

IBM Watson Studio
Buy
SP
Deployments /
Notifications
Online deployment ready
The online deployment Real Time Communication For Specially Abled People in space Real_Time is ready to accept
Today 12:55 AM
View all
Real_Time
Overview
Assets
Deployments
Jobs
Search
Name
Type
Status
Asset
Last modified
Real Time Communication For Specially Abled People
Online
Deployed
CNN
25 seconds ago
Sanjai P (You)
Items per page: 20
1–1 of 1 items
1 of 1 pages
Incomplete uploads are cancelled.

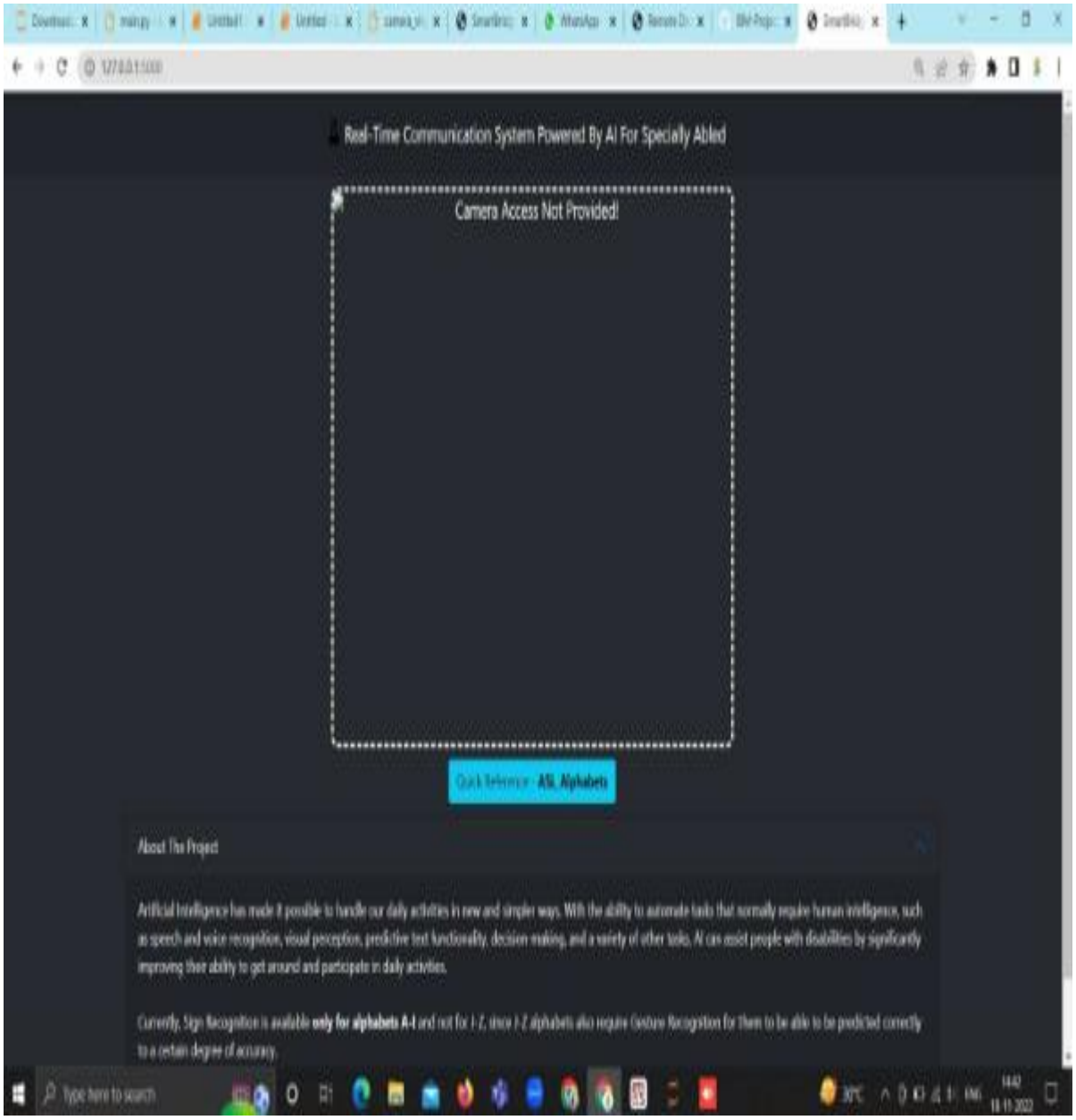


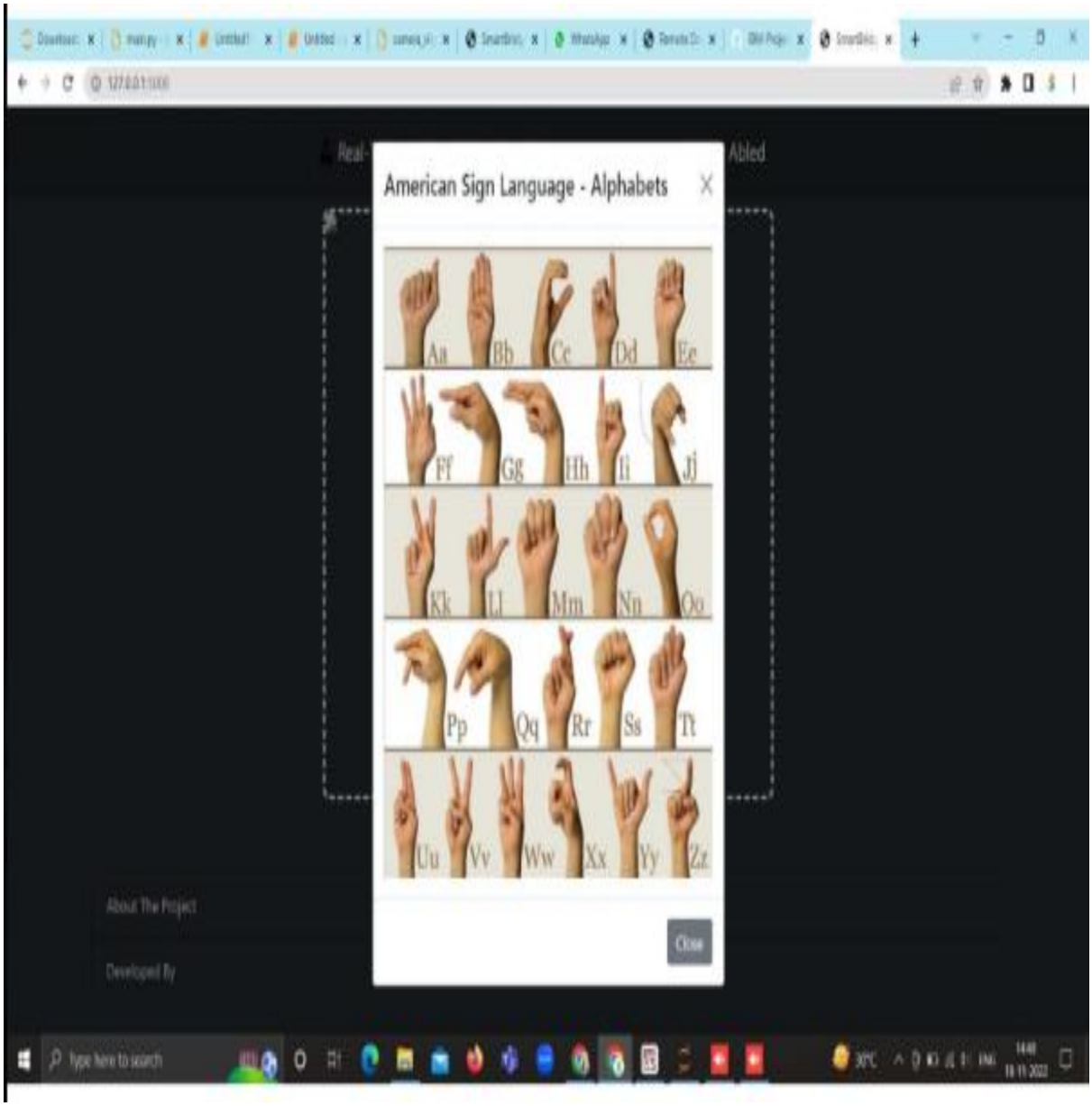
```python
from tensorflow.keras.preprocessing import image

class Video(object):
    def __init__(self):
        self.video = cv2.VideoCapture(0)
        self.roi_start = (50, 150)
        self.roi_end = (250, 350)
        self.model = load_model('asl_model.h5') # Execute Local Trained Model
        # self.model = load_model('IBM_Communication_Model.h5') # Execute IBM Trained Model
        self.index=['A','B','C','D','E','F','G','H','I']
        self.y = None
    def __del__(self):
        self.video.release()
    def get_frame(self):
        ret,frame = self.video.read()
        frame = cv2.resize(frame, (640, 480))
        copy = frame.copy()
        copy = copy[150:150+200,50:50+200]
        # Prediction Start
        cv2.imwrite('image.jpg',copy)
        copy_img = image.load_img('image.jpg', target_size=(64,64))
        x = image.img_to_array(copy_img)
        x = np.expand_dims(x, axis=0)
        pred = np.argmax(self.model.predict(x), axis=1)
        self.y = pred[0]
        cv2.putText(frame,'The Predicted Alphabet is: '+str(self.index[self.y]),(100,50),cv2.FONT_HERSHEY_S
        ret,jpg = cv2.imencode('.jpg', frame)
        return jpg.tobytes()
```


Spyder (Python 3.8)
File Edit Search Source Run Debug Consoles Projects Tools View Help
/home/veeraraghavan/Desktop/sanjai/app.py
Banner-Heading-Image.css
Navbar-Centered-Brand.css
index.html
app.py
camera.py
styles.css
from flask import Flask, Response, render_template
from camera import Video
app = Flask(__name__)
@app.route('/')
def index():
return render_template('index.html')
def gen(camera):
while True:
frame = camera.get_frame()
yield(b'--frame\r\n'
b'Content-Type: image/jpeg\r\n\r\n' + frame +
b'\r\n\r\n')
@app.route('/video_feed')
def video_feed():
video = Video()
return Response(gen(video), mimetype='multipart/x-mi
if __name__ == '__main__':
app.run()
root@veeraraghavan: /home/veeraraghava...
2022-11-10 10:47:52.520362: I tensorflow/stream_executor/cuda/cudart_stub.cc:29]
Ignore above cudart dlerror if you do not have a GPU set up on your machine.
2022-11-10 10:47:52.571073: I tensorflow/stream_executor/cuda/cuda_blas.cc:2901]
Unable to register cuBLAS factory: Attempting to register factory for plugin cu
BLAS when one has already been registered
2022-11-10 10:47:59.482668: W tensorflow/stream_executor/platform/default/dso_lo
ader.cc:64] Could not load dynamic library 'libnvinfer.so.7'; dlerror: libnvinfe
r.so.7: cannot open shared object file: No such file or directory; LD_LIBRARY_PA
TH: /usr/local/lib/python3.8/dist-packages/cv2/../../lib64:
2022-11-10 10:47:59.482752: W tensorflow/stream_executor/platform/default/dso_lo
ader.cc:64] Could not load dynamic library 'libnvinfer_plugin.so.7'; dlerror: li
bnvinfer_plugin.so.7: cannot open shared object file: No such file or directory;
LD_LIBRARY_PATH: /usr/local/lib/python3.8/dist-packages/cv2/../../lib64:
2022-11-10 10:47:59.482772: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:
38] TF-TRT Warning: Cannot dlopen some TensorRT libraries. If you would like to
use Nvidia GPU with TensorRT, please make sure the missing libraries mentioned a
bove are installed properly.
* Serving Flask app 'app'
* Debug mode: off
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
Nov 18 8:48 PM


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
app.py
camera.py
from flask import Flask, Response, render_template
from camera import Video
app = Flask(__name__)
@app.route('/')
def index():
return render_template('index.html')
def gen(camera):
while True:
frame = camera.get_frame()
yield(b'--frame\r\n'
b'Content-Type: image/jpeg\r\n\r\n' + frame +
b'\r\n\r\n')
@app.route('/video_feed')
def video_feed():
video = Video()
return Response(gen(video), mimetype='multipart/x-mixed-replace; boundary = frame')
if __name__ == '__main__':
app.run()
Python 3.9.13 (main, Aug 25 2022,
23:51:50) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or
"license" for more information.
IPython 7.31.1 -- An enhanced
Interactive Python.
In [1]:
Type here to search
25°C
ENG
23:28
18-11-2022


Real-Time Communication System Powered By AI For Specially Abled
Camera Access Not Provided!
Quick Reference : ASL Alphabets
About The Project
Artificial Intelligence has made it possible to handle our daily activities in new and simpler ways. With the ability to automate tasks that normally require human intelligence, such as speech and voice recognition, visual perception, predictive text functionality, decision making, and a variety of other tasks. AI can assist people with disabilities by significantly improving their ability to get around and participate in daily activities.
Currently, Sign Recognition is available only for alphabets A-I and not for J-Z, since J-Z alphabets also require Gesture Recognition for them to be able to be predicted correctly to a certain degree of accuracy.


Real-
Abled
American Sign Language - Alphabets
Aa
Bb
Cc
Dd
Ee
Ff
Gg
Hh
Ii
Jj
Kk
Ll
Mm
Nn
Oo
Pp
Qq
Rr
Ss
Tt
Uu
Vv
Ww
Xx
Yy
Zz
Close
About The Project
Developed By
Type here to search


Real-Time Communication System Powered By AIFor Specially Abled
The Predicted Alphabet is: E
Quick Reference - ASL Alphabets
Nov 18 6:49 PM