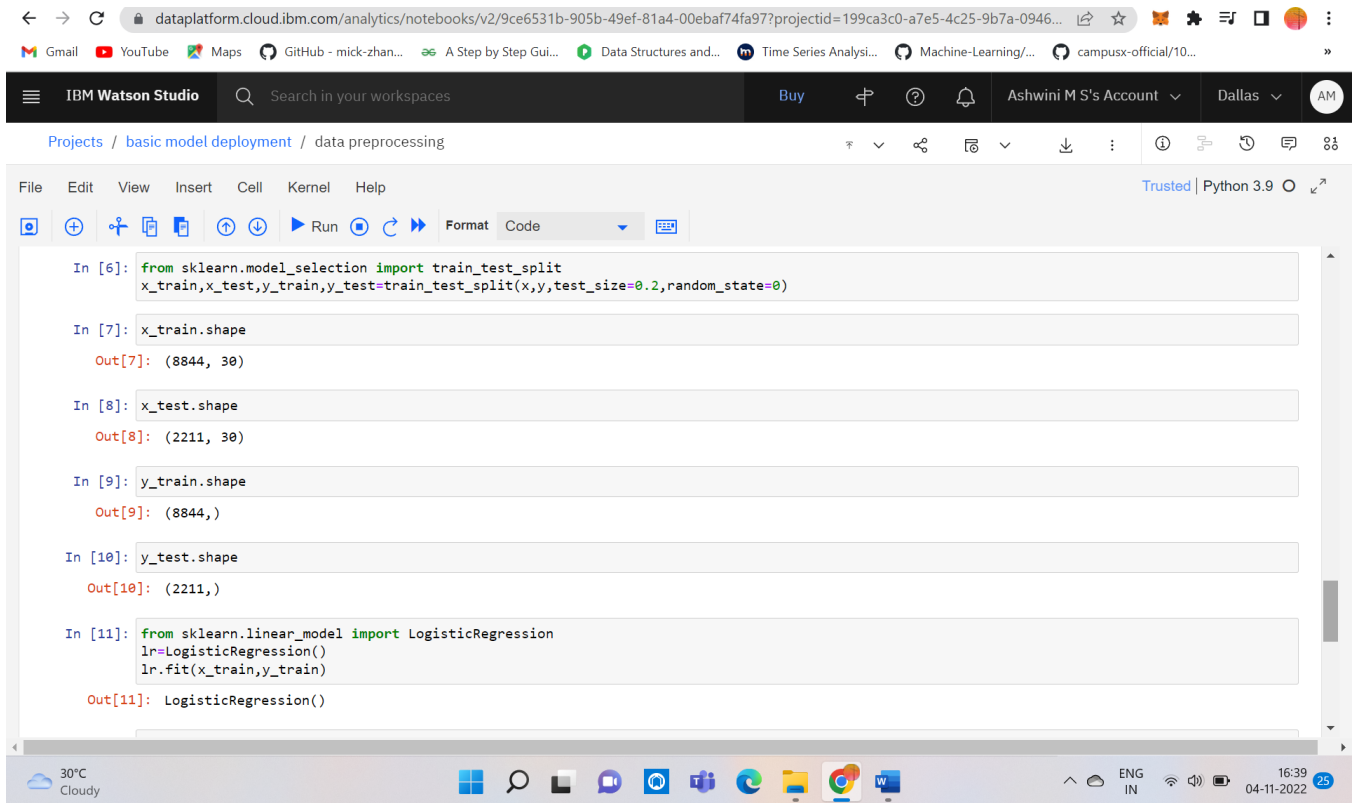


Building ML Models



This screenshot shows a Jupyter notebook in IBM Watson Studio. The notebook is titled 'basic model deployment' and is in the 'data preprocessing' section. The code in the notebook performs the following steps:

- Import `train_test_split` from `sklearn.model_selection`.
- Split the data into training and testing sets using `train_test_split(x_train, y_train, test_size=0.2, random_state=0)`.
- Check the shapes of the training and testing sets for `x` and `y`.
- Fit a `LogisticRegression` model from `sklearn.linear_model` on the training data.

```
In [6]: from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.2, random_state=0)

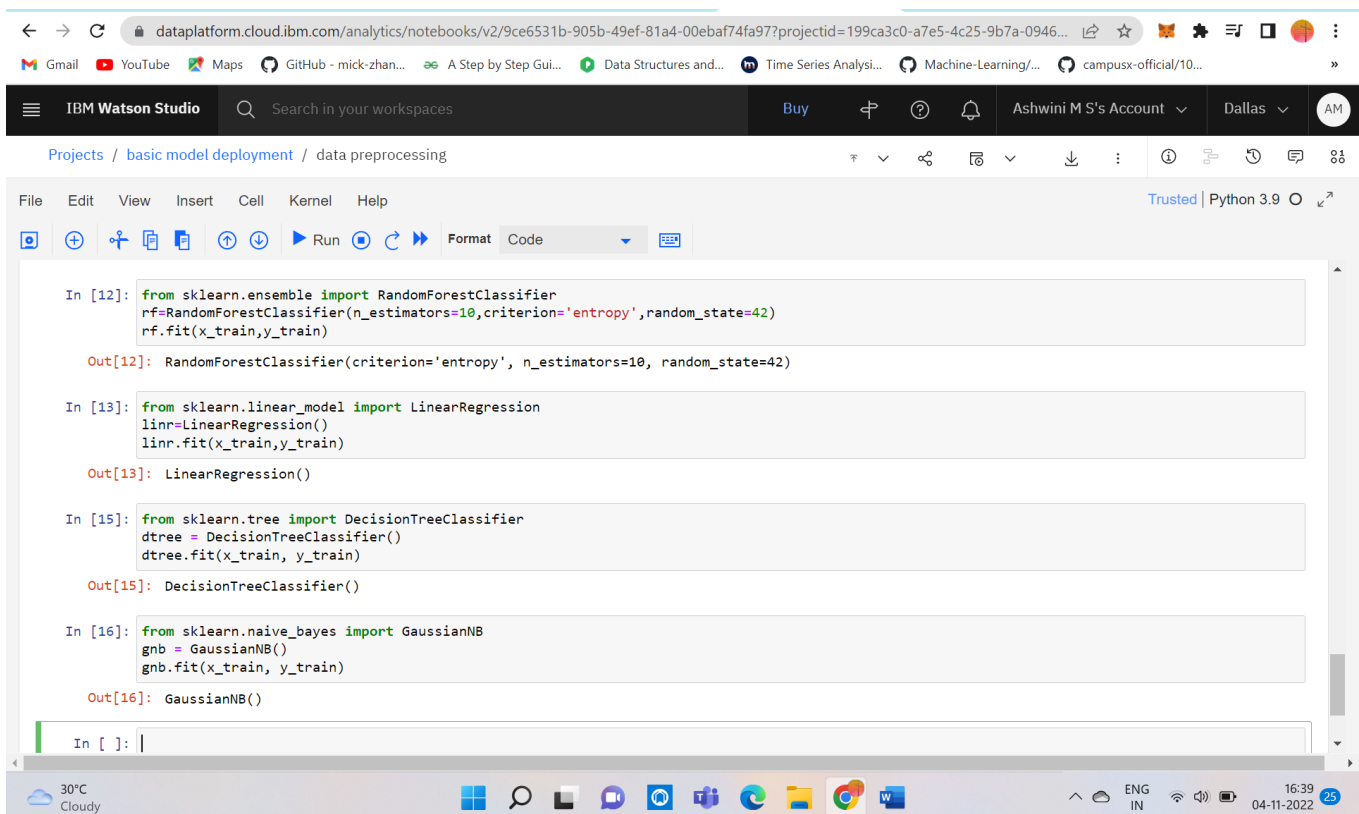
In [7]: x_train.shape
Out[7]: (8844, 30)

In [8]: x_test.shape
Out[8]: (2211, 30)

In [9]: y_train.shape
Out[9]: (8844,)

In [10]: y_test.shape
Out[10]: (2211,)

In [11]: from sklearn.linear_model import LogisticRegression
lr = LogisticRegression()
lr.fit(x_train, y_train)
Out[11]: LogisticRegression()
```



This screenshot shows the same Jupyter notebook in IBM Watson Studio, continuing with model training. The code in the notebook performs the following steps:

- Fit a `RandomForestClassifier` from `sklearn.ensemble` on the training data.
- Fit a `LinearRegression` model from `sklearn.linear_model` on the training data.
- Fit a `DecisionTreeClassifier` from `sklearn.tree` on the training data.
- Fit a `GaussianNB` model from `sklearn.naive_bayes` on the training data.

```
In [12]: from sklearn.ensemble import RandomForestClassifier
rf = RandomForestClassifier(n_estimators=10, criterion='entropy', random_state=42)
rf.fit(x_train, y_train)
Out[12]: RandomForestClassifier(criterion='entropy', n_estimators=10, random_state=42)

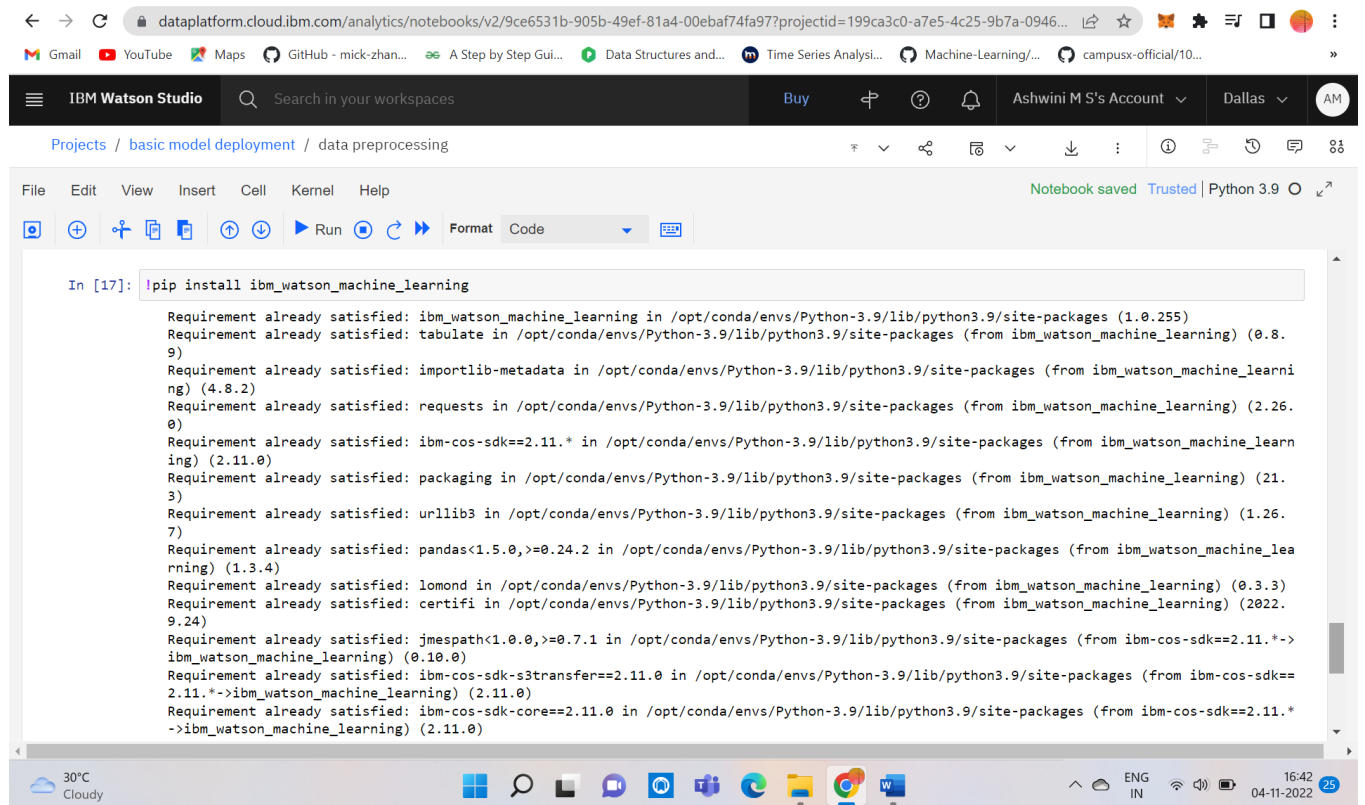
In [13]: from sklearn.linear_model import LinearRegression
linr = LinearRegression()
linr.fit(x_train, y_train)
Out[13]: LinearRegression()

In [15]: from sklearn.tree import DecisionTreeClassifier
dtree = DecisionTreeClassifier()
dtree.fit(x_train, y_train)
Out[15]: DecisionTreeClassifier()

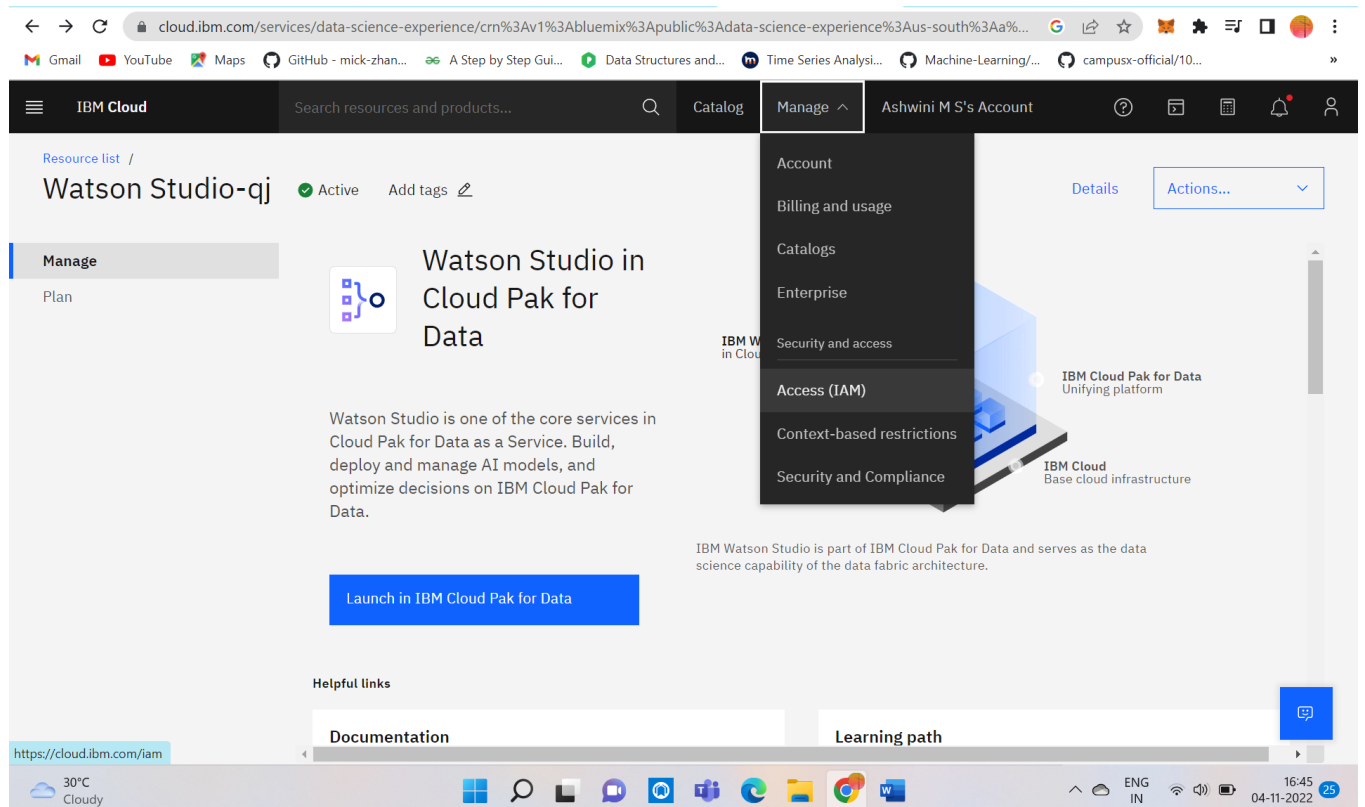
In [16]: from sklearn.naive_bayes import GaussianNB
gnb = GaussianNB()
gnb.fit(x_train, y_train)
Out[16]: GaussianNB()

In [ ]:
```

Installing IBM Watson Machine learning library



The screenshot shows the IBM Watson Studio interface. The top navigation bar includes the IBM Watson Studio logo, a search bar, and user account information (Ashwini M S's Account, Dallas). The breadcrumb trail indicates the current location: Projects / basic model deployment / data preprocessing. The main workspace displays a Jupyter Notebook with a single cell containing the command `!pip install ibm_watson_machine_learning`. The output of this command lists various requirements that are already satisfied, including `ibm_watson_machine_learning` (1.0.255), `tabulate` (0.8.9), `importlib-metadata` (4.8.2), `requests` (2.26.0), `ibm-cos-sdk` (2.11.0), `packaging` (21.3), `urllib3` (1.26.7), `pandas` (1.3.4), `lomond` (0.3.3), `certifi` (2022.9.24), `jmespath` (1.0.0), `ibm-cos-sdk-s3transfer` (2.11.0), and `ibm-cos-sdk-core` (2.11.0).



The screenshot displays the IBM Cloud portal. The top navigation bar includes the IBM Cloud logo, a search bar, and user account information (Ashwini M S's Account). The main content area shows the 'Watson Studio-qj' resource page, which is marked as 'Active'. The page includes a 'Manage' tab, a 'Plan' section, and a 'Launch in IBM Cloud Pak for Data' button. A sidebar menu on the right lists various management options: Account, Billing and usage, Catalogs, Enterprise, Security and access, Access (IAM), Context-based restrictions, and Security and Compliance. The page also features a 'Helpful links' section with 'Documentation' and 'Learning path' links.

API Keys

The screenshot shows the IBM Cloud IAM API keys management interface. The left sidebar contains navigation links for IAM, Users, Trusted profiles, Service IDs, API keys (selected), Identity providers, Manage access, Access groups, Authorizations, Roles, Gain insight, and Inactive identities. The main content area is titled "API keys" and includes a search bar, a "View:" dropdown set to "My IBM Cloud API keys", and a "Create +" button. Below this is a table with columns: Status, Name, Description, and Date Created. The table is currently empty, showing only a header row and a placeholder icon. The bottom of the page shows a Windows taskbar with various application icons and a system tray displaying the date and time.

cloud.ibm.com/iam/apikeys

IBM Cloud

Search resources and products...

Catalog Manage Ashwini M S's Account

IAM

Manage identities

Users

Trusted profiles

Service IDs

API keys

Identity providers

Manage access

Access groups

Authorizations

Roles

Gain insight

Inactive identities

API keys

Create view, and work with API keys that you have access to manage. IBM Cloud API keys are associated with a user's identity and can be used to access cloud platform and classic infrastructure APIs, depending on the access that is assigned to the user. The following table displays a list of API keys created in this account. [Learn more.](#)

Looking for more options to manage API Keys? Try [IBM Cloud® Secrets Manager](#) for creating and leasing API keys dynamically and storing them securely in your own dedicated instance.

View: My IBM Cloud API keys

API keys associated with a user's identity have the same access that the user is assigned across all accounts. To update the access for an API key, assign or remove access for the user.

Create +

Status	Name	Description	Date Created
--------	------	-------------	--------------

30°C Cloudy

16:45 04-11-2022

This screenshot shows the same IBM Cloud IAM API keys page as the first image, but with a "Create IBM Cloud API key" dialog box open in the foreground. The dialog box has a title bar with a close button (X). It contains two input fields: "Name" with the text "newkey" and "Description" which is currently empty. At the bottom of the dialog are two buttons: "Cancel" and "Create". The background page is dimmed, showing the same navigation sidebar and main content area as before.

cloud.ibm.com/iam/apikeys

IBM Cloud

Search resources and products...

Catalog Manage Ashwini M S's Account

IAM

Manage identities

Users

Trusted profiles

Service IDs

API keys

Identity providers

Manage access

Access groups

Authorizations

Roles

Gain insight

Inactive identities

API keys

Create +

Create IBM Cloud API key

Name

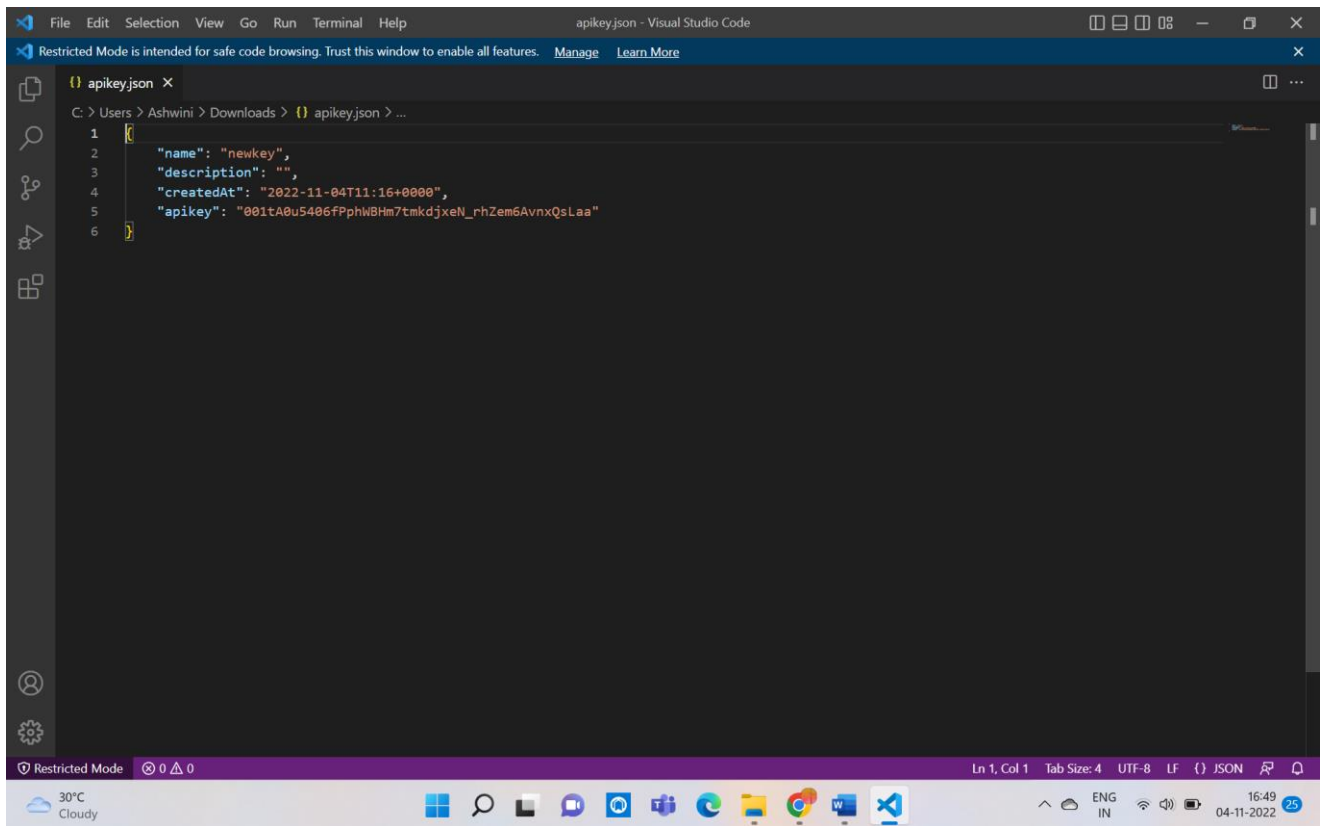
newkey

Description

Cancel Create

30°C Cloudy

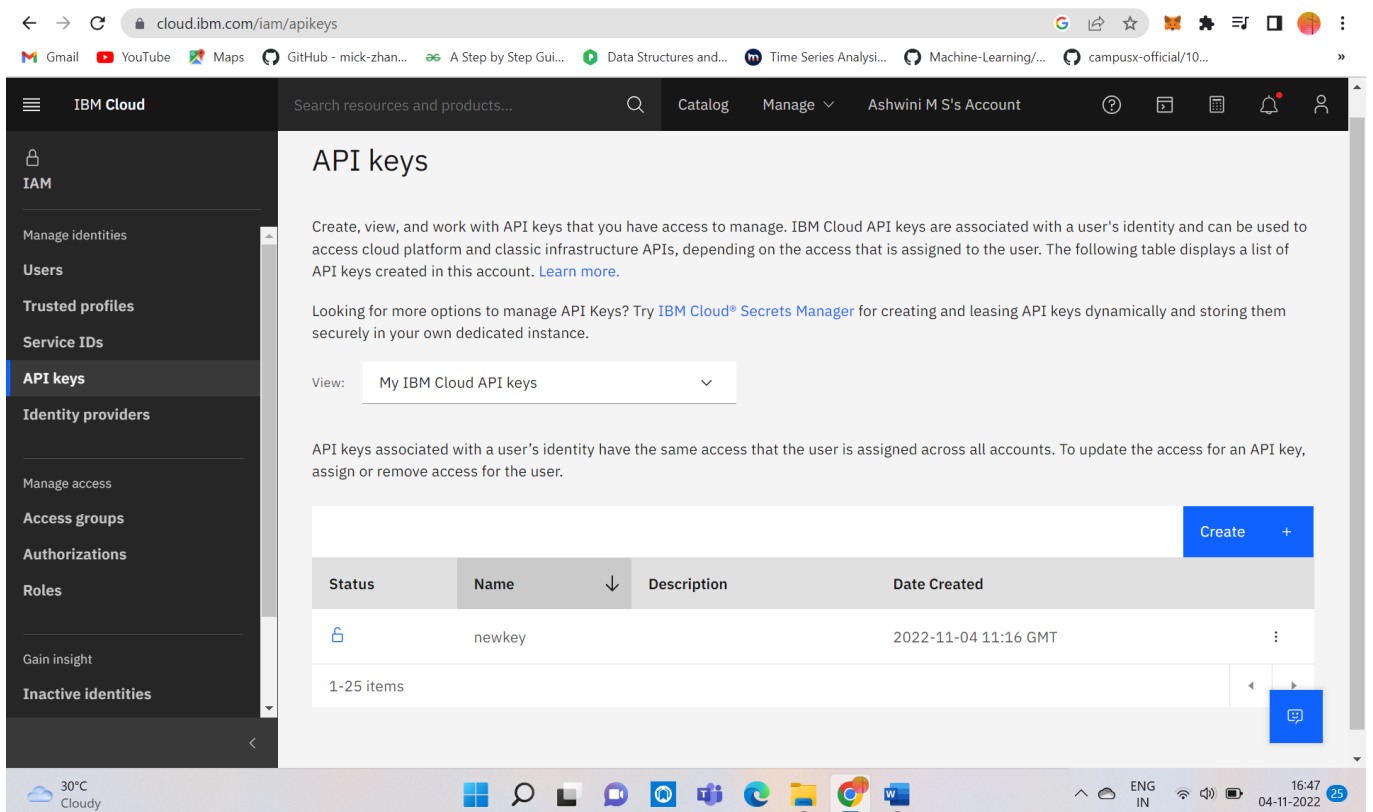
16:46 04-11-2022



The screenshot shows the Visual Studio Code editor with a file named `apikey.json` open. The file contains the following JSON content:

```
1 {
2   "name": "newkey",
3   "description": "",
4   "createdAt": "2022-11-04T11:16+0000",
5   "apiKey": "001tA0u5406fPphwBHm7tmkdjxeN_rhZem6AvnxQsLaa"
6 }
```

The status bar at the bottom indicates the file is in Restricted Mode, UTF-8 encoding, and LF line endings. The system tray shows a temperature of 30°C and a cloudy weather condition.



The screenshot shows the IBM Cloud IAM API keys page. The left sidebar contains the navigation menu with the following items:

- IAM
 - Manage identities
 - Users
 - Trusted profiles
 - Service IDs
 - API keys**
 - Identity providers
 - Manage access
 - Access groups
 - Authorizations
 - Roles
 - Gain insight
 - Inactive identities

The main content area is titled "API keys" and contains the following text:

Create, view, and work with API keys that you have access to manage. IBM Cloud API keys are associated with a user's identity and can be used to access cloud platform and classic infrastructure APIs, depending on the access that is assigned to the user. The following table displays a list of API keys associated with this account. [Learn more.](#)

Looking for more options to manage API Keys? Try [IBM Cloud® Secrets Manager](#) for creating and leasing API keys dynamically and storing them securely in your own dedicated instance.

View: My IBM Cloud API keys

API keys associated with a user's identity have the same access that the user is assigned across all accounts. To update the access for an API key, assign or remove access for the user.

[Create](#) +

Status	Name	Description	Date Created
	newkey		2022-11-04 11:16 GMT

1-25 items

The system tray at the bottom shows a temperature of 30°C and a cloudy weather condition.

← → ↻ dataplatform.cloud.ibm.com/home?context=cpdaas&apps=data_science_experience&nocache=true&quick_start_target=data_science_ex... ☆ 🏠 ⚙️ 📄 🖨️ 🌐

Gmail YouTube Maps GitHub - mick-zhan... A Step by Step Gui... Data Structures and... Time Series Analy... Machine-Learning/... campus-official/10...

IBM Watson Studio Search in your workspaces Buy ⓘ ⓘ ⓘ ⓘ Ashwini M S's Account Dallas AM

Filter navigation

- Home
- Data
- Projects
- Deployments
- Services **Deployments**
- Gallery
- Administration
- Support

Work with data
Create a project for your team to prepare data, find insights, or build models.

Learn what's new
Stay current with new features, enhancements, and other changes.

Projects +

- basic model deployment Oct 28, 2022 03:09 PM

Notifications

ⓘ No notifications
You will see your most recent notifications here.

Deployments ⓘ +

ⓘ No deployment spaces
After you create spaces, you'll see them here.

New deployment space +

https://dataplatform.cloud.ibm.com/ml-runtime?context=cpdaas Jupyter Notebook

30°C Cloudy

Windows taskbar: 17:01 04-11-2022

← → ↻ dataplatform.cloud.ibm.com/ml-runtime/spaces?context=cpdaas ☆ 🏠 ⚙️ 📄 🖨️ 🌐

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IBM Watson Studio Search in your workspaces Buy ⓘ ⓘ ⓘ ⓘ Ashwini M S's Account Dallas AM

Deployments

0 spaces

New deployment space +

Activity Spaces

Filter by: All spaces Which deployment space are you looking for?

Name	Last modified	↓	Your role	↕	Collaborators	Tags	Online deployments ⓘ	Jobs ⓘ
No results found.								

Windows taskbar: 17:02 04-11-2022

← → ↻ dataplatform.cloud.ibm.com/ml-runtime/spaces/create-space?context=cpdaas

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IBM Watson Studio Search in your workspaces Buy ? Ashwini M S's Account Dallas AM

New deployment space

Use a space to collect assets in one place to create, run, and manage deployments

Define details

Name

Select services

Select storage service ⓘ

Cloud Object Storage-jv

Select machine learning service (optional) ⓘ

No machine learning service found for your account.
Create a new one before proceeding.

Create

Description (Optional)

Deployment space description

Deployment space tags (optional) ⓘ

Add a tag

Upload space assets (optional)

Populate your space with assets exported from a project or space to a .zip file. You can add more assets after the space is created.

Cancel Create

30°C Cloudy

← → ↻ dataplatform.cloud.ibm.com/ml-runtime/spaces/create-space?context=cpdaas

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IBM Watson Studio Search in your workspaces Buy ? Ashwini M S's Account Dallas AM

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Create a new one before proceeding.

Create

Description (Optional)

Deployment space description

Deployment space tags (optional) ⓘ

Add a tag

Upload space assets (optional)

Populate your space with assets exported from a project or space to a .zip file. You can add more assets after the space is created.

Cancel Creating

The space is being prepared...

The space "modeldeployment" is being created.

Step 1 of 1. Creating deployment space.

Close View new space

30°C Cloudy

← → ↻ dataplatform.cloud.ibm.com/ml-runtime/spaces/create-space?context=cpdaas

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IBM Watson Studio Search in your workspaces Buy ? Ashwini M S's Account Dallas AM

New deployment space

Use a space to collect assets in one place to create, run, and manage deployments

Define details

Name

modeldeployment

Description (Optional)

Deployment space description

Deployment space tags (optional) ⓘ

Add a tag

The space is ready

Click **View new space** to view the space and associated assets.

✔ Step 1 of 1. Creating deployment space.

Close View new space

Upload space assets (optional)

Populate your space with assets exported from a project or space to a .zip file. You can add more assets after the space is created.

Cancel Create

30°C Cloudy

← → ↻ dataplatform.cloud.ibm.com/ml-runtime/spaces/3d7b865c-63f8-414a-9247-2d78f19081e5/overview?context=cpdaas

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IBM Watson Studio Search in your workspaces Buy ? Ashwini M S's Account Dallas AM

Deployments /

modeldeployment

Overview Assets Deployments Jobs Manage

Assets

No assets

There have been no assets added to this space.

View all

Deployments

All

0	0
✔ Deployed	✖ Failed

View deployments

Job runs

0	0
🔄 Active	✖ Failed last 24 hours

View jobs

Drop files here or browse for files to upload.

Stay on the page until upload completes. Incomplete uploads are cancelled.

30°C Cloudy

