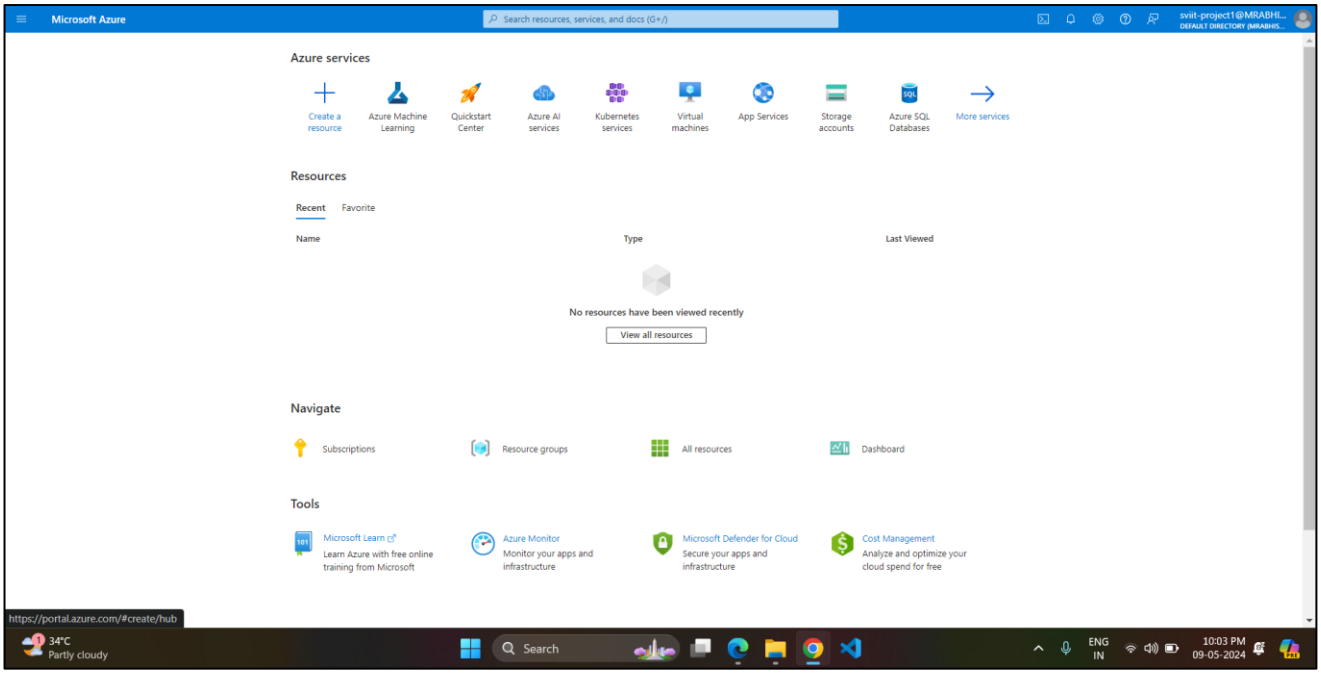
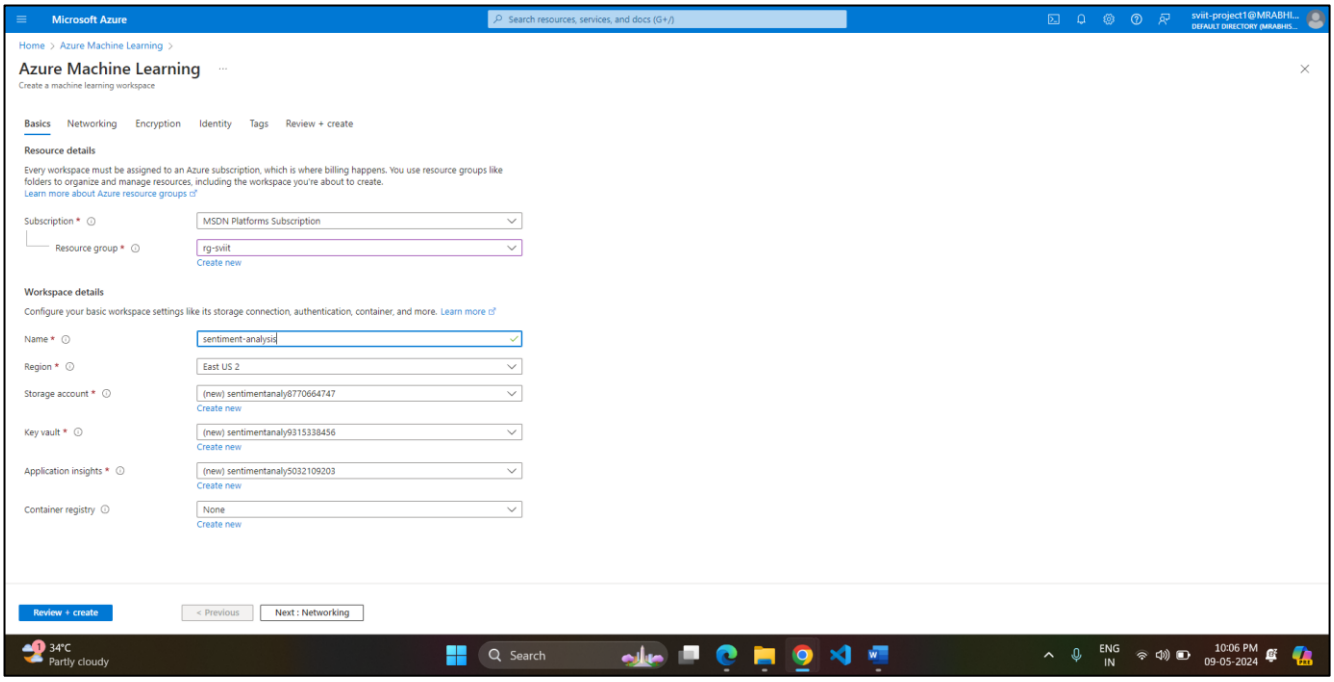
Sentiment Analysis using Azure Machine Learning

Create an Azure Machine Learning workspace.

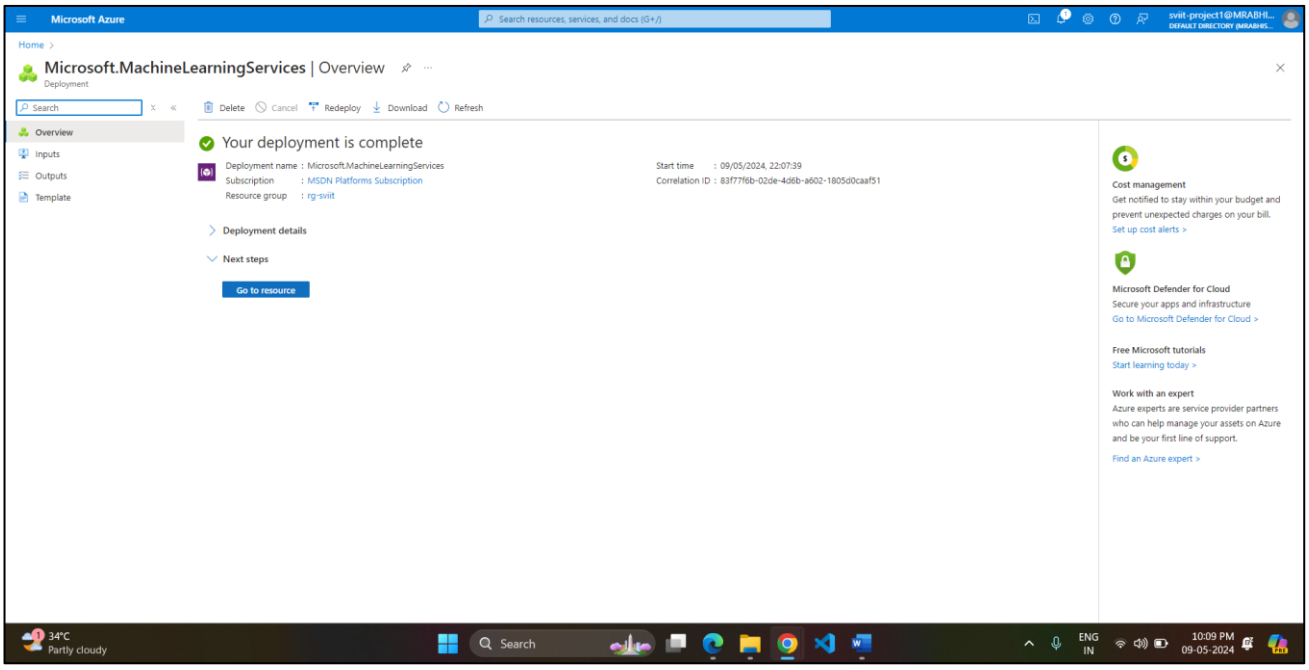
1. Sign into the Azure portal using your Microsoft credentials.

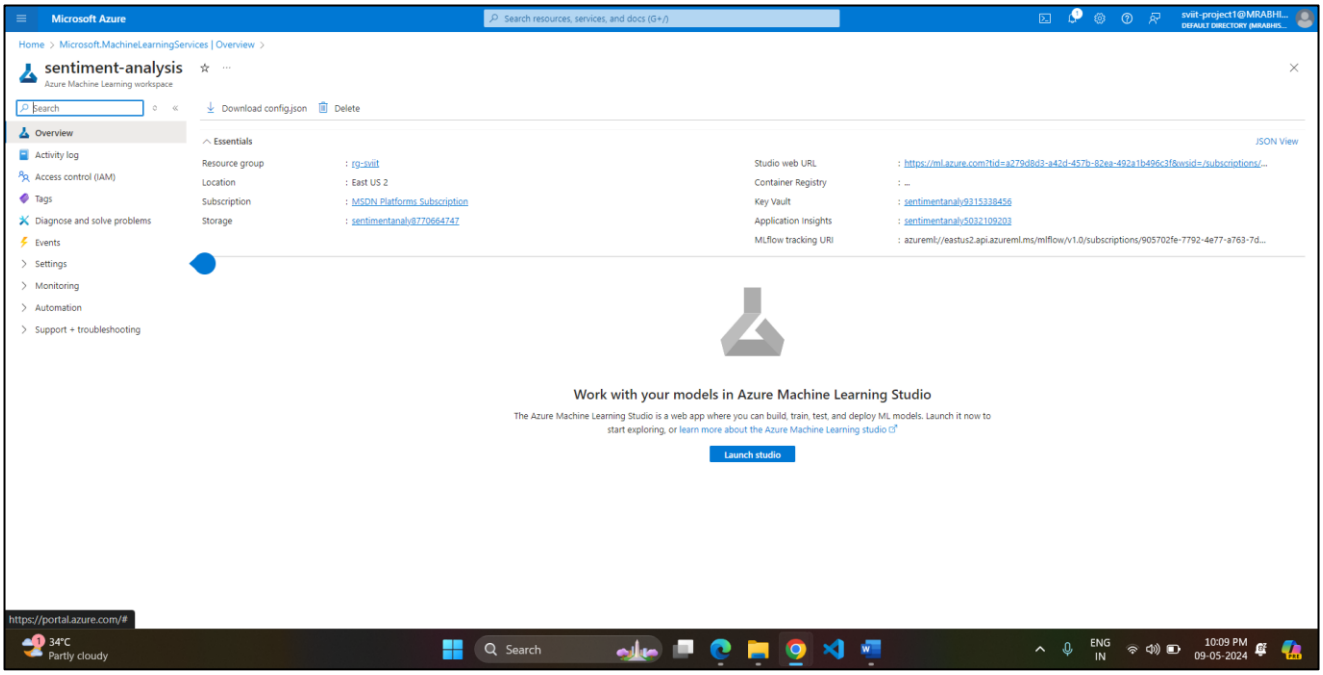


2. Select + **Create a resource**, search for Machine Learning, and create a new **Azure Machine Learning** resource with an Azure Machine Learning plan. Use the following settings:
    - **Subscription**: Your Azure subscription.
    - **Resource group**: Create or select a resource group.
    - **Workspace name**: Enter a unique name for your workspace.
    - **Region**: Select the closest geographical region.
    - **Storage account**: Note the default new storage account that will be created for your workspace.
    - **Key vault**: Note the default new key vault that will be created for your workspace.
    - **Application insights**: Note the default new application insights resource that will be created for your workspace.
    - **Container registry**: None (one will be created automatically the first time you deploy a model to a container).

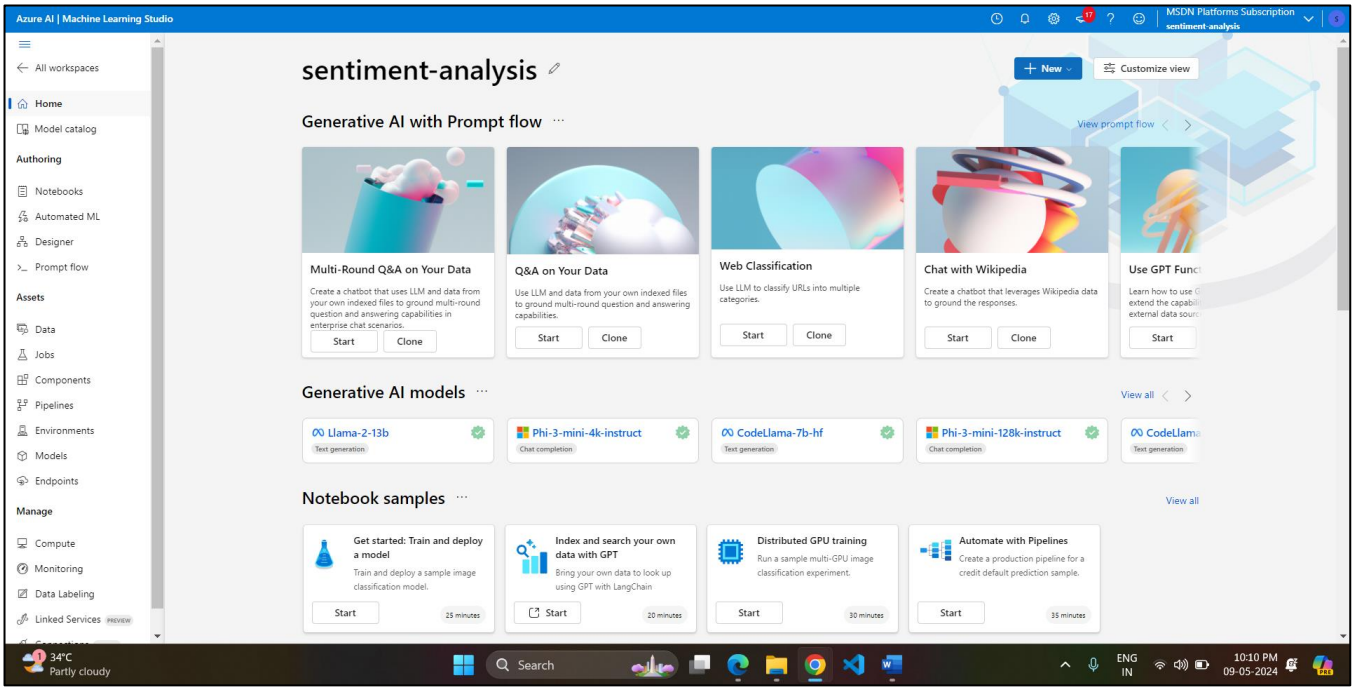


3. Select **Review + create**, then select **Create**. Wait for your workspace to be created (it can take a few minutes), and then go to the deployed resource.





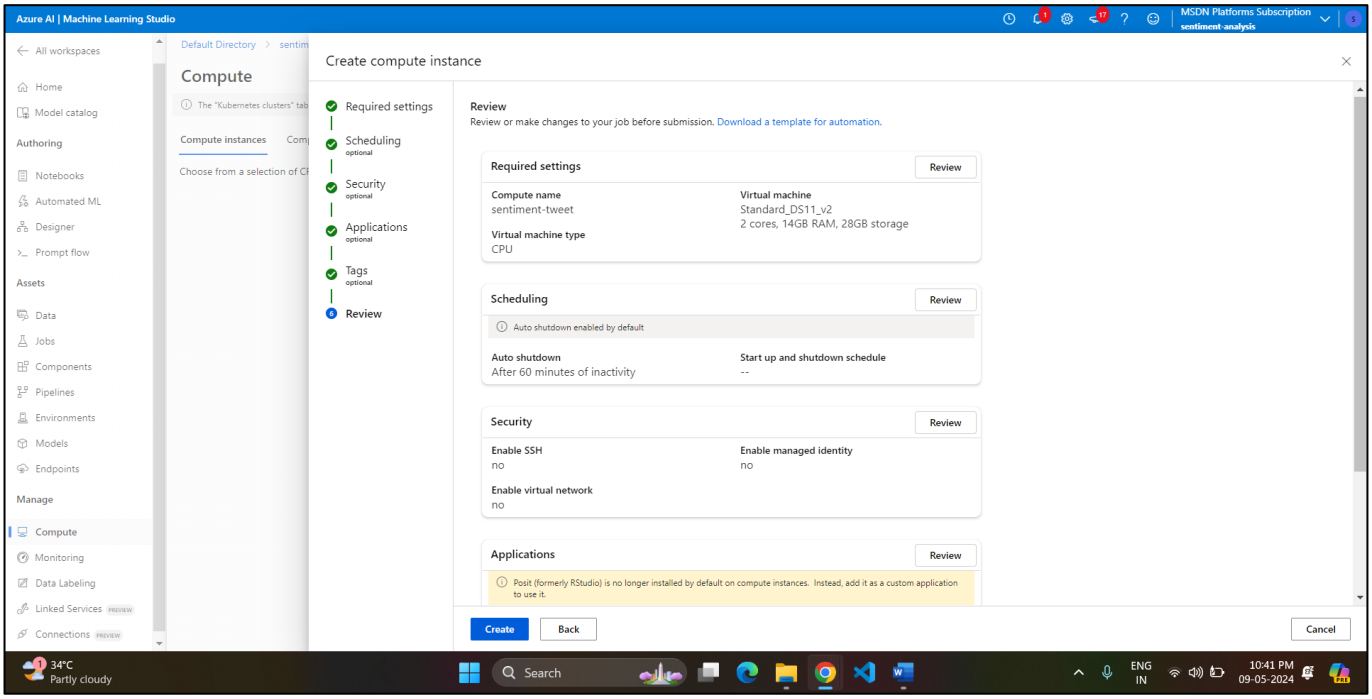
4. Select **Launch studio** (or open a new browser tab and navigate to https://ml.azure.com, and sign into Azure Machine Learning studio using your Microsoft account).



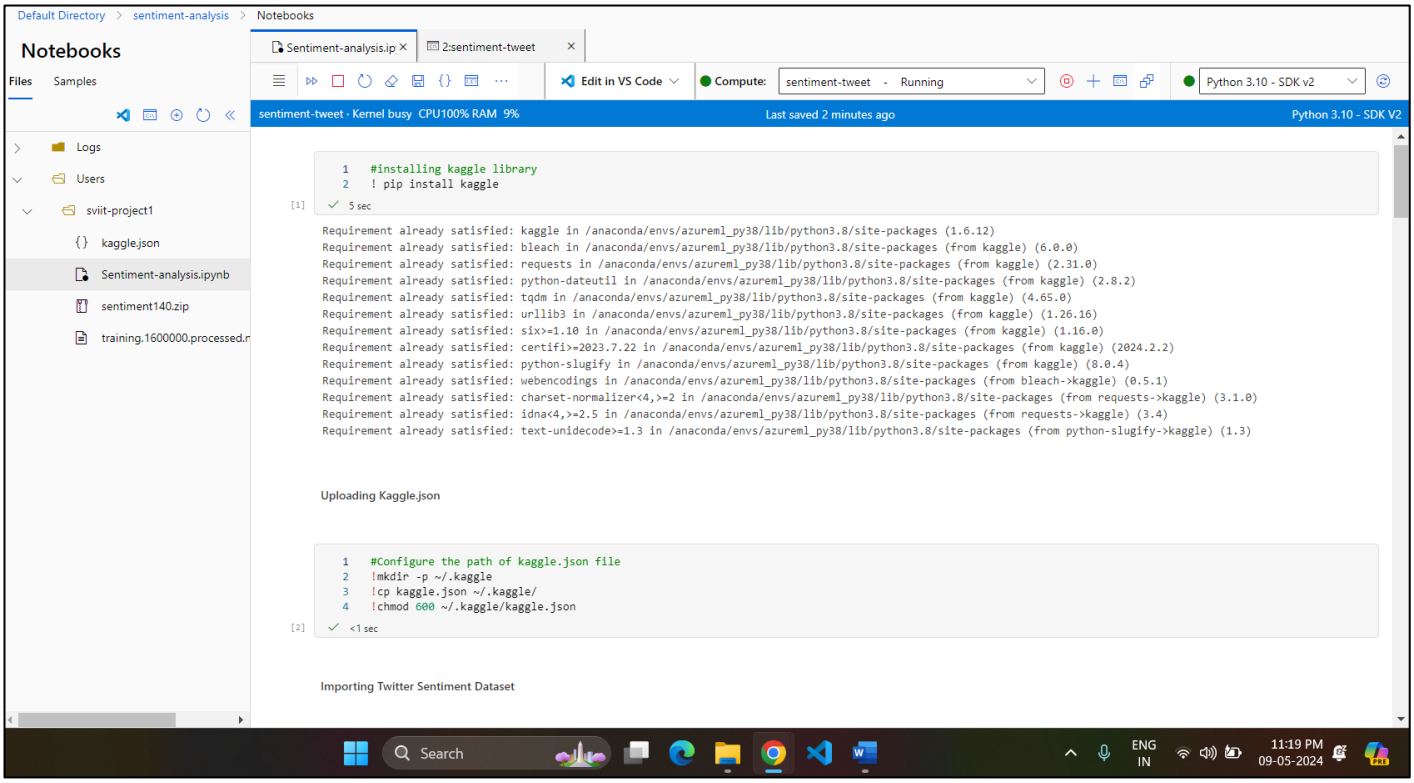
5. Close any messages that are displayed.

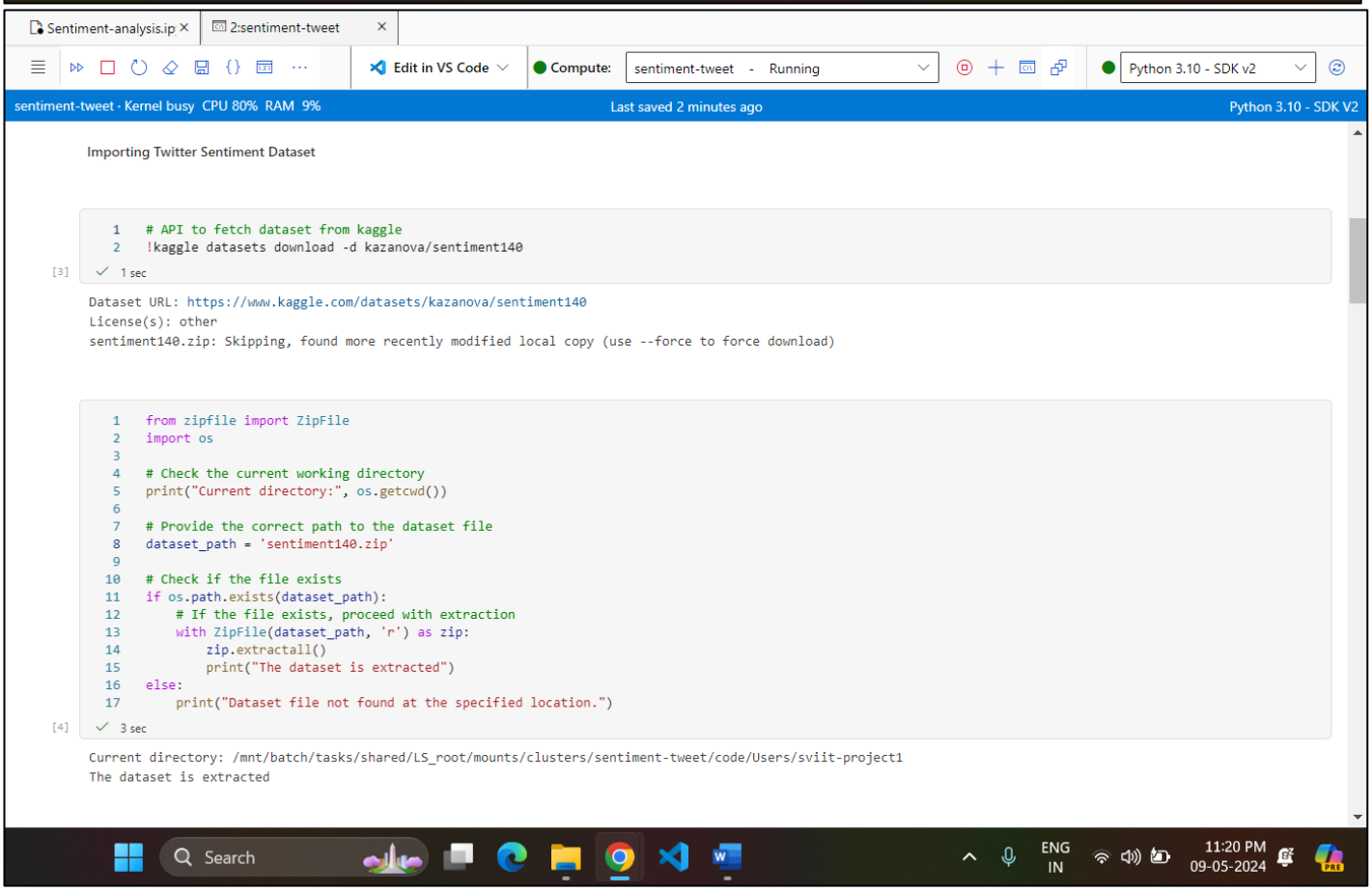
Create Compute

1. In Azure Machine Learning studio, select the ≡ icon (a menu icon that looks like a stack of three lines) at the top left to view the various pages in the interface (you may need to maximize the size of your screen). You can use these pages in the left hand pane to manage the resources in your workspace. Select the **Compute** page (under **Manage**).



Creating and Running Model in Notebook


Default Directory > sentiment-analysis > Notebooks
Notebooks
Files
Samples
Logs
Users
sviit-project1
kaggle.json
Sentiment-analysis.ipynb
sentiment140.zip
training.1600000.processed.n
Sentiment-analysis.ip
2:sentiment-tweet
Edit in VS Code
Compute:
sentiment-tweet - Running
Python 3.10 - SDK v2
sentiment-tweet · Kernel busy CPU100% RAM 9%
Last saved 2 minutes ago
Python 3.10 - SDK V2
#installing kaggle library
! pip install kaggle
5 sec
Requirement already satisfied: kaggle in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (1.6.12)
Requirement already satisfied: bleach in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (6.0.0)
Requirement already satisfied: requests in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (2.31.0)
Requirement already satisfied: python-dateutil in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (2.8.2)
Requirement already satisfied: tqdm in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (4.65.0)
Requirement already satisfied: urllib3 in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (1.26.16)
Requirement already satisfied: six>=1.10 in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (1.16.0)
Requirement already satisfied: certifi>=2023.7.22 in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (2024.2.2)
Requirement already satisfied: python-slugify in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from kaggle) (8.0.4)
Requirement already satisfied: webencodings in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from bleach->kaggle) (0.5.1)
Requirement already satisfied: charset-normalizer<4,>=2 in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from requests->kaggle) (3.1.0)
Requirement already satisfied: idna<4,>=2.5 in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from requests->kaggle) (3.4)
Requirement already satisfied: text-unidecode>=1.3 in /anaconda/envs/azureml_py38/lib/python3.8/site-packages (from python-slugify->kaggle) (1.3)
Uploading Kaggle.json
#Configure the path of kaggle.json file
!mkdir -p ~/.kaggle
!cp kaggle.json ~/.kaggle/
!chmod 600 ~/.kaggle/kaggle.json
<1 sec
Importing Twitter Sentiment Dataset
Search
ENG
IN
11:19 PM
09-05-2024


Sentiment-analysis.ip
2:sentiment-tweet
Edit in VS Code
Compute:
sentiment-tweet - Running
Python 3.10 - SDK v2
sentiment-tweet · Kernel busy CPU 80% RAM 9%
Last saved 2 minutes ago
Python 3.10 - SDK V2
Importing Twitter Sentiment Dataset
API to fetch dataset from kaggle
!kaggle datasets download -d kazanova/sentiment140
1 sec
Dataset URL: https://www.kaggle.com/datasets/kazanova/sentiment140
License(s): other
sentiment140.zip: Skipping, found more recently modified local copy (use --force to force download)
from zipfile import ZipFile
import os
# Check the current working directory
print("Current directory:", os.getcwd())
# Provide the correct path to the dataset file
dataset_path = 'sentiment140.zip'
# Check if the file exists
if os.path.exists(dataset_path):
# If the file exists, proceed with extraction
with ZipFile(dataset_path, 'r') as zip:
zip.extractall()
print("The dataset is extracted")
else:
print("Dataset file not found at the specified location.")
3 sec
Current directory: /mnt/batch/tasks/shared/LS_root/mounts/clusters/sentiment-tweet/code/Users/sviit-project1
The dataset is extracted
Search
ENG
IN
11:20 PM
09-05-2024

Sentiment-analysis.ip | 2:sentiment-tweet

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel busy CPU100% RAM 9% | Last saved 3 minutes ago | Python 3.10 - SDK V2

Importing the Dependencies

```
[15]
import sys
print(sys.executable)
```
✓ <1 sec

```
/anaconda/envs/azureml_py310_sdkv2/bin/python
```

```
[16]
!{sys.executable} -m pip install nltk
```
✓ 4 sec

```
Requirement already satisfied: nltk in /anaconda/envs/azureml_py310_sdkv2/lib/python3.10/site-packages (3.8.1)
Requirement already satisfied: click in /anaconda/envs/azureml_py310_sdkv2/lib/python3.10/site-packages (from nltk) (8.0.4)
Requirement already satisfied: joblib in /anaconda/envs/azureml_py310_sdkv2/lib/python3.10/site-packages (from nltk) (1.2.0)
Requirement already satisfied: regex>=2021.8.3 in /anaconda/envs/azureml_py310_sdkv2/lib/python3.10/site-packages (from nltk) (2024.4.28)
Requirement already satisfied: tqdm in /anaconda/envs/azureml_py310_sdkv2/lib/python3.10/site-packages (from nltk) (4.65.0)
```

```
[13]
import nltk
```
✓ 6 sec

```
import numpy as np
import pandas as pd
import re
from nltk.corpus import stopwords
from nltk.stem.porter import PorterStemmer
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
```

Search | ENG IN | 11:21 PM 09-05-2024

Sentiment-analysis.ip | 2:sentiment-tweet

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel busy CPU 80% RAM 9% | Last saved 3 minutes ago | Python 3.10 - SDK V2

```
[14]
import numpy as np
import pandas as pd
import re
from nltk.corpus import stopwords
from nltk.stem.porter import PorterStemmer
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score
```
✓ <1 sec

```
[17]
nltk.download('stopwords')
```
✓ <1 sec

```
[nltk_data] Downloading package stopwords to
[nltk_data]     /home/azureuser/nltk_data...
[nltk_data]   Unzipping corpora/stopwords.zip.
True
```

```
[18]
# Printing the stopwords in English
print(stopwords.words('english'))
```
✓ <1 sec

```
['i', 'me', 'my', 'myself', 'we', 'our', 'ours', 'ourselves', 'you', "you're", "you've", "you'll", "you'd", 'your', 'yours', 'yourself', 'yourselves', 'he', 'him',
'his', 'himself', 'she', "she's", 'her', 'hers', 'herself', 'it', "it's", 'its', 'itself', 'they', 'them', 'their', 'theirs', 'themselves', 'what', 'which', 'who',
'whom', 'this', 'that', "that'll", 'these', 'those', 'am', 'is', 'are', 'was', 'were', 'be', 'been', 'being', 'have', 'has', 'had', 'having', 'do', 'does', 'did',
'doing', 'a', 'an', 'the', 'and', 'but', 'if', 'or', 'because', 'as', 'until', 'while', 'of', 'at', 'by', 'for', 'with', 'about', 'against', 'between', 'into',
'through', 'during', 'before', 'after', 'above', 'below', 'to', 'from', 'up', 'down', 'in', 'out', 'on', 'off', 'over', 'under', 'again', 'further', 'then',
'once', 'here', 'there', 'when', 'where', 'why', 'how', 'all', 'any', 'both', 'each', 'few', 'more', 'most', 'other', 'some', 'such', 'no', 'nor', 'not', 'only',
'own', 'same', 'so', 'than', 'too', 'very', 's', 't', 'can', 'will', 'just', 'don', "don't", 'should', "should've", 'now', 'd', 'll', 'm', 'o', 're', 've', 'y',
'ain', 'aren', "aren't", 'couldn', "couldn't", 'didn', "didn't", 'doesn', "doesn't", 'hadn', "hadn't", 'hasn', "hasn't", 'haven', "haven't", 'isn', "isn't", 'ma',
'mightn', "mightn't", 'mustn', "mustn't", 'needn', "needn't", 'shan', "shan't", 'shouldn', "shouldn't", 'wasn', "wasn't", 'weren', "weren't", 'won', "won't",
'wouldn', "wouldn't"]
```

Search | ENG IN | 11:21 PM 09-05-2024

Sentiment-analysis.ip | 2:sentiment-tweet

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sentiment-tweet · Kernel busy CPU100% RAM 9% | Last saved 5 minutes ago | Python 3.10 - SDK V2

Data Processing

```
#Loading the data from csv file to pandas DataFrame
twitter_data = pd.read_csv('training.1600000.processed.noemoticon.csv', encoding = 'ISO-8859-1')
```

[20] ✓ 8 sec

```
# Checking the number of rows and columns
twitter_data.shape
```

[21] ✓ <1 sec

```
(1599999, 6)
```

```
# Printing the first five rows of the dataset
twitter_data.head()
```

[22] ✓ <1 sec

	0	1467810369	Mon Apr 06 22:19:45 PDT 2009	NO_QUERY	_TheSpecialOne_	@switchfoot http://twitpic.com/2y1zl - Awww, that's a bummer. You shoulda got David Carr of Third Day to do it. ;D
0	0	1467810672	Mon Apr 06 22:19:49 PDT 2009	NO_QUERY	scotthamilton	is upset that he can't update his Facebook by ...
1	0	1467810917	Mon Apr 06 22:19:53 PDT 2009	NO_QUERY	mattycus	@Kenichan I dived many times for the ball. Man...
2	0	1467811184	Mon Apr 06 22:19:57 PDT 2009	NO_QUERY	ElleCTF	my whole body feels itchy and like its on fire
3	0	1467811193	Mon Apr 06 22:19:57 PDT 2009	NO_QUERY	Karoli	@nationwideclass no, it's not behaving at all....
4	0	1467811372	Mon Apr 06 22:20:00 PDT 2009	NO_QUERY	joy_wolf	@Kwesidei not the whole crew

Search | ENG IN | 11:21 PM 09-05-2024

Sentiment-analysis.ip | 2:sentiment-tweet

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel busy CPU 80% RAM 9% | Last saved 5 minutes ago | Python 3.10 - SDK V2

```
# Naming the columns and reading the dataset again

column_names = ['target','id','date','flag','user','text']
twitter_data = pd.read_csv('training.1600000.processed.noemoticon.csv', names = column_names, encoding = 'ISO-8859-1')
```

[24] ✓ 7 sec

```
twitter_data.shape
```

[25] ✓ <1 sec

```
(1600000, 6)
```

```
twitter_data.head()
```

[26] ✓ <1 sec

	target	id	date	flag	user	text
0	0	1467810369	Mon Apr 06 22:19:45 PDT 2009	NO_QUERY	_TheSpecialOne_	@switchfoot http://twitpic.com/2y1zl - Awww, t...
1	0	1467810672	Mon Apr 06 22:19:49 PDT 2009	NO_QUERY	scotthamilton	is upset that he can't update his Facebook by ...
2	0	1467810917	Mon Apr 06 22:19:53 PDT 2009	NO_QUERY	mattycus	@Kenichan I dived many times for the ball. Man...
3	0	1467811184	Mon Apr 06 22:19:57 PDT 2009	NO_QUERY	ElleCTF	my whole body feels itchy and like its on fire
4	0	1467811193	Mon Apr 06 22:19:57 PDT 2009	NO_QUERY	Karoli	@nationwideclass no, it's not behaving at all....

```
# Counting the number of missing values in the dataset
twitter_data.isnull().sum()
```

[27] ✓ <1 sec

Search | ENG IN | 11:22 PM 09-05-2024

Sentiment-analysis.ip × | 2:sentiment-tweet ×

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel busy CPU100% RAM 9% | Last saved 6 minutes ago | Python 3.10 - SDK V2

```
[27] ✓ <1 sec
1  # Counting the number of missing values in the dataset
2  twitter_data.isnull().sum()
```

```
target    0
id        0
date      0
flag      0
user      0
text      0
dtype: int64
```

```
[28] ✓ <1 sec
1  # Checing the distribution of target column
2  twitter_data['target'].value_counts()
```

```
target
0    800000
4    800000
Name: count, dtype: int64
```

```
[29] ✓ <1 sec
1  #Converting the target value from "4" to "1"
2  twitter_data.replace({'target':{4:1}}, inplace=True)
```

```
[30] ✓ <1 sec
1  twitter_data['target'].value_counts()
```

```
target
0    800000
1    800000
Name: count, dtype: int64
```

Search | ENG IN | 11:22 PM 09-05-2024

Sentiment-analysis.ip × | 2:sentiment-tweet ×

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel idle CPU 40% RAM 13% | Last saved 2 minutes ago | Python 3.10 - SDK V2

```
[31] ✓ <1 sec
1  #Stemming
2  port_stem = PorterStemmer()
```

```
[32] ✓ <1 sec
1  def stemming(content):
2
3      stemmed_content = re.sub('[^a-zA-Z]',' ', content)
4      stemmed_content = stemmed_content.lower()
5      stemmed_content = stemmed_content.split()
6      stemmed_content = [port_stem.stem(word) for word in stemmed_content if not word in stopwords.words('english')]
7      stemmed_content = ' '.join(stemmed_content)
8
9      return stemmed_content
```

```
[33] ✓ 49 min 50 sec
1  twitter_data['stemmed_content'] = twitter_data['text'].apply(stemming)
```

```
[34] ✓ <1 sec
1  twitter_data.head()
```

	target	id	date	flag	user	text	stemmed_content
0	0	1467810369	Mon Apr 06 22:19:45 PDT 2009	NO_QUERY	_TheSpecialOne_	@switchfoot http://twitpic.com/2y1zl - Awww, t...	switchfoot http twitpic com zl awww bummer sho...
1	0	1467810672	Mon Apr 06 22:19:49 PDT 2009	NO_QUERY	scotthamilton	is upset that he can't update his Facebook by ...	upset updat facebook text might cri result sch...
2	0	1467810917	Mon Apr 06 22:19:53 PDT 2009	NO_QUERY	mattycus	@Kenichan I dived many times for the ball. Man...	kenichan dive mani time ball manag save rest g...
3	0	1467811184	Mon Apr 06 22:19:57 PDT 2009	NO_QUERY	ElleCTF	my whole body feels itchy and like its on fire	whole bodi feel itchi like fire
4	0	1467811193	Mon Apr 06 22:19:57 PDT 2009	NO_QUERY	Karoli	@nationwideclass no, it's not behaving at all....	nationwideclass behav mad see

Search | ENG IN | 12:17 AM 10-05-2024

Sentiment-analysis.ip × | 2:sentiment-tweet ×

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel idle CPU 40% RAM 13% | Last saved 2 minutes ago | Python 3.10 - SDK V2

```
[35]  print(twitter_data['stemmed_content'])
```
✓ <1 sec

```
0          switchfoot http twitpic com zl awww bummer sho...
1          upset updat facebook text might cri result sch...
2          kenichan dive mani time ball manag save rest g...
3                        whole bodi feel itchi like fire
4                          nationwideclass behav mad see
                           ...
1599995                     woke school best feel ever
1599996    thewdb com cool hear old walt interview http b...
1599997                    readi mojo makeov ask detail
1599998    happi th birthday boo alll time tupac amaru sh...
1599999    happi charitytuesday thenspcc sparkschar speak...
Name: stemmed_content, Length: 1600000, dtype: object
```

```
[36]  print(twitter_data['target'])
```
✓ <1 sec

```
0          0
1          0
2          0
3          0
4          0
          ..
1599995    1
1599996    1
1599997    1
1599998    1
1599999    1
Name: target, Length: 1600000, dtype: int64
```

Search | ENG IN | 12:17 AM 10-05-2024

Sentiment-analysis.ip × | 2:sentiment-tweet ×

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel idle CPU 0% RAM 13% | Last saved 2 minutes ago | Python 3.10 - SDK V2

```
[37]  # Separating the data and label
      X = twitter_data['stemmed_content'].values
      Y = twitter_data['target'].values
```
✓ <1 sec

```
[38]  print(X)
```
✓ <1 sec

```
['switchfoot http twitpic com zl awww bummer shoulda got david carr third day'
 'upset updat facebook text might cri result school today also blah'
 'kenichan dive mani time ball manag save rest go bound' ...
 'readi mojo makeov ask detail'
 'happi th birthday boo alll time tupac amaru shakur'
 'happi charitytuesday thenspcc sparkschar speakinguph h']
```

```
[39]  print(Y)
```
✓ <1 sec

```
[0 0 0 ... 1 1 1]
```

Splitting the data to training data and test data

```
[40]  X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2, stratify=Y, random_state=2)
```
✓ <1 sec

```
      print(X.shape, X_train.shape, X_test.shape)
```

Search | ENG IN | 12:18 AM 10-05-2024

Sentiment-analysis.ip | 2:sentiment-tweet

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel idle CPU 0% RAM 13% | Last saved 2 minutes ago | Python 3.10 - SDK V2

Splitting the data to training data and test data

```
[40] 1  X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2, stratify=Y, random_state=2)
     ✓ <1 sec
```

```
[41] 1  print(X.shape, X_train.shape, X_test.shape)
     ✓ <1 sec
```

```
(1600000,) (1280000,) (320000,)
```

```
[42] 1  print(X_train)
     ✓ <1 sec
```

```
['watch saw iv drink lil wine' 'hatermagazin'
 'even though favourit drink think vodka coke wipe mind time think im gonna find new drink'
 ... 'eager monday afternoon'
 'hope everyon mother great day wait hear guy store tomorrow'
 'love wake folger bad voic deeper']
```

```
[43] 1  print(X_test)
     ✓ <1 sec
```

```
['mmangen fine much time chat twitter hubbi back summer amp tend domin free time'
 'ah may show w ruth kim amp geoffrey sanhueza'
 'ishatara mayb bay area thang dammit' ...
 'destini nevertheless hooray member wonder safe trip' 'feel well'
 'supersandro thank']
```

Sentiment-analysis.ip | 2:sentiment-tweet

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel idle CPU 0% RAM 13% | Last saved 3 minutes ago | Python 3.10 - SDK V2

Converting the Textual data to Numerical data

```
[44] 1  vectorizer = TfidfVectorizer()
     2
     3  X_train = vectorizer.fit_transform(X_train)
     4  X_test = vectorizer.transform(X_test)
     ✓ 18 sec
```

```
[45] 1  print(X_train)
     ✓ <1 sec
```

```
  (1279997, 5685)       0.48650358607431304
  (1279998, 385313)     0.4103285865588191
  (1279998, 275288)     0.38703346602729577
  (1279998, 162047)     0.34691726958159064
  (1279998, 156297)     0.3137096161546449
  (1279998, 153281)     0.28378968751027456
  (1279998, 435463)     0.2851807874350361
  (1279998, 124765)     0.32241752985927996
  (1279998, 169461)     0.2659980990397061
  (1279998, 93795)      0.21717768937055476
  (1279998, 412553)     0.2816582375021589
  (1279999, 96224)      0.5416162421321443
  (1279999, 135384)     0.6130934129868719
  (1279999, 433612)     0.3607341026233411
  (1279999, 435572)     0.31691096877786484
  (1279999, 31410)      0.248792678366695
  (1279999, 242268)     0.19572649660865402
```

```
1  print(X_test)
```

Sentiment-analysis.ip | 2:sentiment-tweet

Edit in VS Code | Compute: sentiment-tweet - Running | Python 3.10 - SDK v2

sentiment-tweet · Kernel idle CPU 0% RAM 13% | Last saved 4 minutes ago | Python 3.10 - SDK V2

Training the ML Model - Logistic Regression

```
[47] 1  model = LogisticRegression(max_iter=1000)
```
✓ 1 sec

```
[48] 1  model.fit(X_train, Y_train)
```
✓ 1 min 21 sec

```
LogisticRegression(max_iter=1000)
```

Model Evaluation - Accuracy Score

```
[50] 1  # Accuracy score on training data
     2  X_train_prediction = model.predict(X_train)
     3  training_data_accuracy = accuracy_score(Y_train,X_train_prediction)
```
✓ <1 sec

```
[51] 1  print('Accuracy score on the training data:', training_data_accuracy)
```
✓ <1 sec

```
Accuracy score on the training data: 0.81018984375
```

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Sentiment-analysis.ip | 2:sentiment-tweet

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Model Evaluation - Accuracy Score

```
[50] 1  # Accuracy score on training data
     2  X_train_prediction = model.predict(X_train)
     3  training_data_accuracy = accuracy_score(Y_train,X_train_prediction)
```
✓ <1 sec

```
[51] 1  print('Accuracy score on the training data:', training_data_accuracy)
```
✓ <1 sec

```
Accuracy score on the training data: 0.81018984375
```

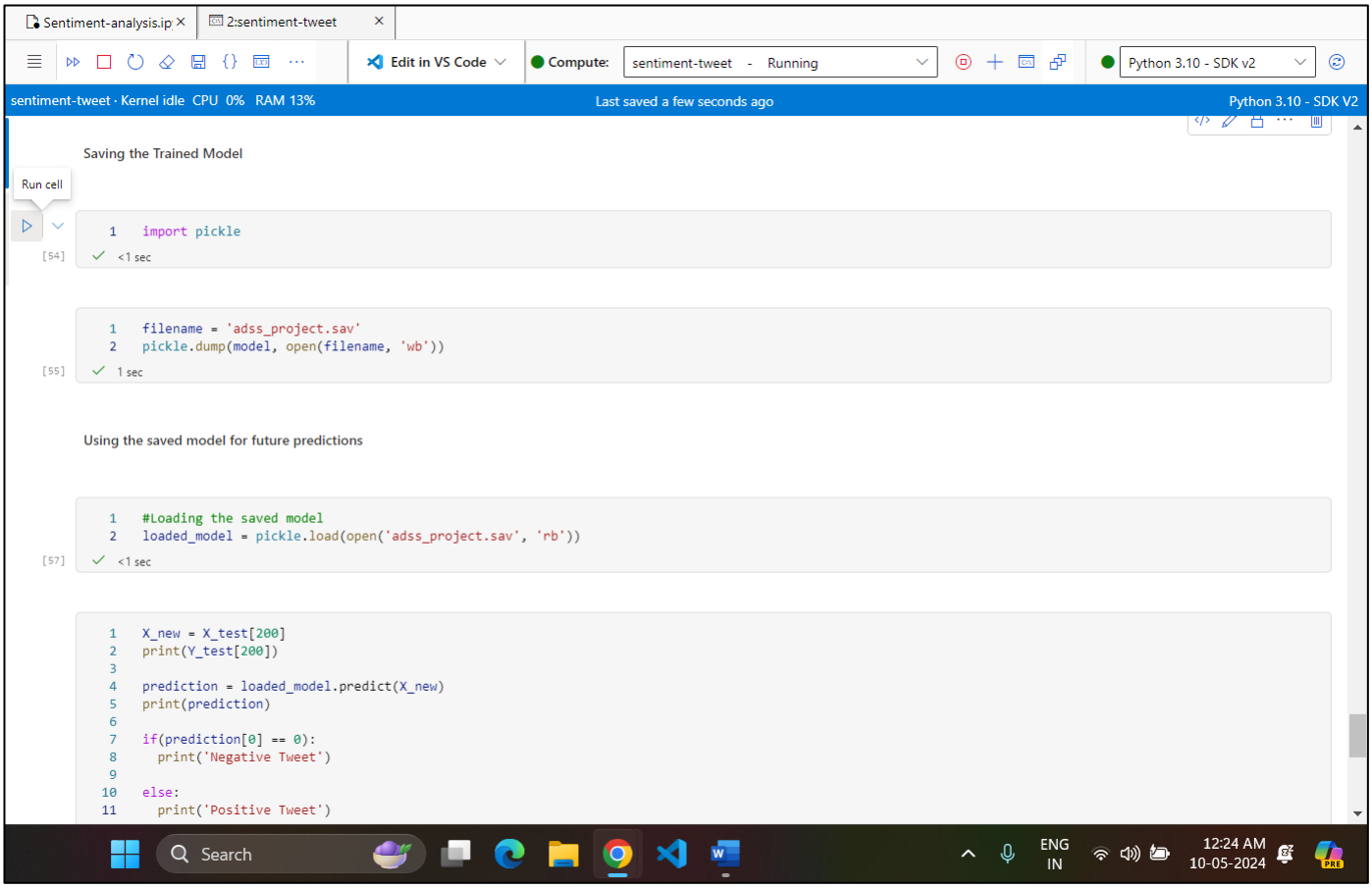
```
[52] 1  # Accuracy score on testing data
     2  X_test_prediction = model.predict(X_test)
     3  testing_data_accuracy = accuracy_score(Y_test,X_test_prediction)
```
✓ <1 sec

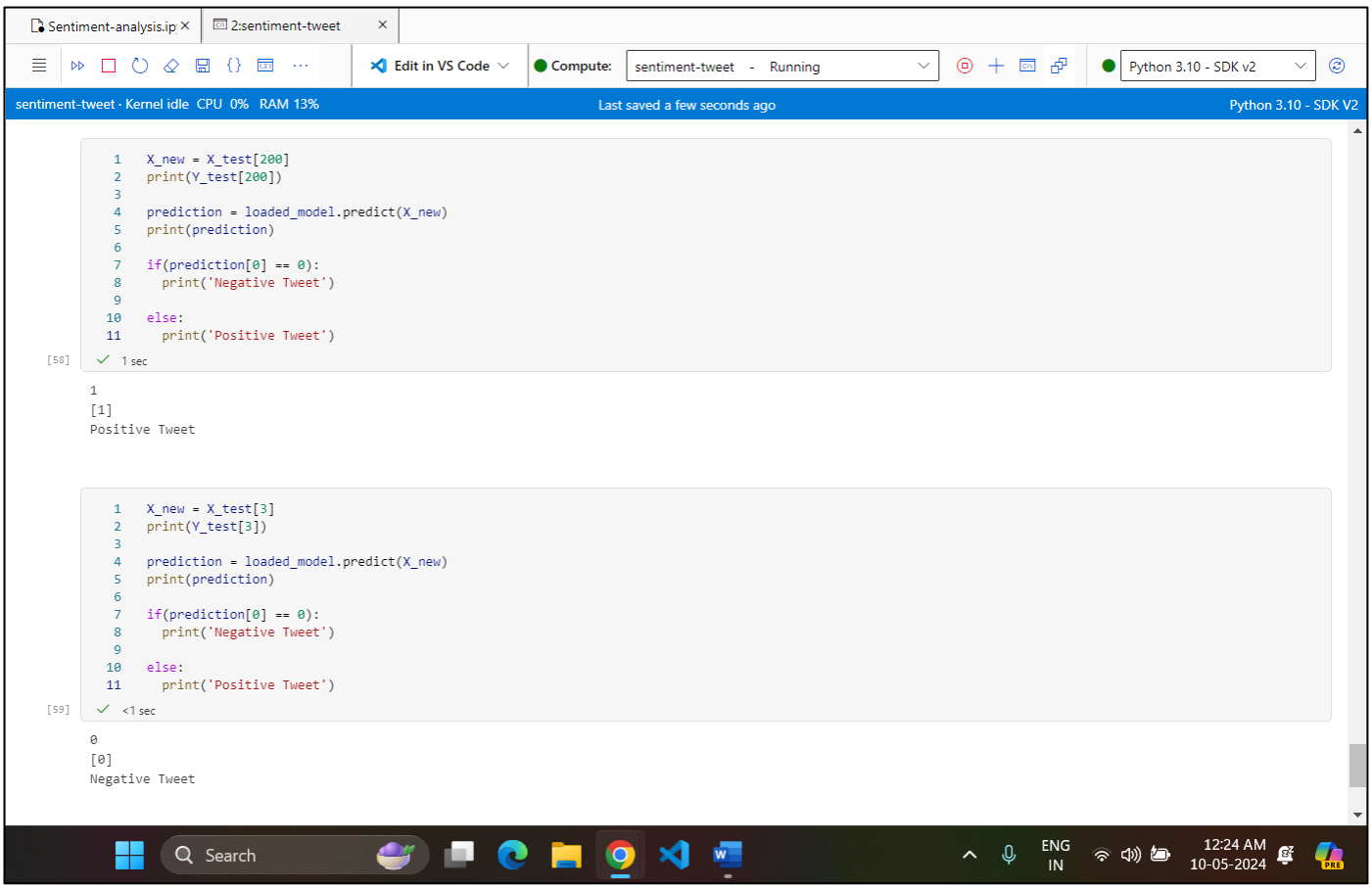
```
[53] 1  print('Accuracy score on the testing data:', testing_data_accuracy)
```
✓ <1 sec

```
Accuracy score on the testing data: 0.7780375
```

Model Accuracy = 77.8%

Search | ENG IN | 12:19 AM 10-05-2024


Sentiment-analysis.ip
2:sentiment-tweet
Edit in VS Code
Compute:
sentiment-tweet - Running
Python 3.10 - SDK v2
sentiment-tweet · Kernel idle CPU 0% RAM 13%
Last saved a few seconds ago
Python 3.10 - SDK V2
Saving the Trained Model
Run cell
import pickle
[54] <1 sec
filename = 'adss_project.sav'
pickle.dump(model, open(filename, 'wb'))
[55] 1 sec
Using the saved model for future predictions
#Loading the saved model
loaded_model = pickle.load(open('adss_project.sav', 'rb'))
[57] <1 sec
X_new = X_test[200]
print(Y_test[200])
prediction = loaded_model.predict(X_new)
print(prediction)
if(prediction[0] == 0):
print('Negative Tweet')
else:
print('Positive Tweet')
Search
ENG
IN
12:24 AM
10-05-2024


Sentiment-analysis.ip
2:sentiment-tweet
Edit in VS Code
Compute:
sentiment-tweet - Running
Python 3.10 - SDK v2
sentiment-tweet · Kernel idle CPU 0% RAM 13%
Last saved a few seconds ago
Python 3.10 - SDK V2
X_new = X_test[200]
print(Y_test[200])
prediction = loaded_model.predict(X_new)
print(prediction)
if(prediction[0] == 0):
print('Negative Tweet')
else:
print('Positive Tweet')
[58] 1 sec
1
[1]
Positive Tweet
X_new = X_test[3]
print(Y_test[3])
prediction = loaded_model.predict(X_new)
print(prediction)
if(prediction[0] == 0):
print('Negative Tweet')
else:
print('Positive Tweet')
[59] <1 sec
0
[0]
Negative Tweet
Search
ENG
IN
12:24 AM
10-05-2024

```python
from sklearn import metrics

#create confusion matrix
c_matrix = metrics.confusion_matrix(Y_test,X_test_prediction)
print(c_matrix)
```

[83] ✓ <1 sec

```
[[121409  38591]
 [ 32277 127723]]
```