Project: Module 4

we are going to use request library to fetch the data then we need JSON libraray for response data parsing.

In [11]:
```
#import libraries to handle request to api
import requests
import json
import pprint
# base currency or reference currency
base="USD"

# required currency for plot
out_curr="MYR"

# exchange data from a date
start_date="2021-01-01"

# exchange data till a date
end_date="2023-03-04"

# api url for request
url = 'https://api.exchangerate.host/timeseries?base={0}&start_date={1}&end_date={2}&s
response = requests.get(url)

# retrive response in json format
data = response.json()

pprint.pprint(data["rates"])
```

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extract datas and their corresponding data from the response.

In [12]:

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# create an empty array to store date and exchange rates
rates=[]
# extract dates and rates from each item of dictionary or json in the above created li
for i,j in data["rates"].items():
      rates.append([i,j[out_curr]])
print(rates)
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```

make a Dataframe form the above data.

In [13]:

```python
# create an data frame
import pandas as pd
df=pd.DataFrame(rates)
# define column names explicitely
df.columns=["date","rate"]
df
```

Out[13]:

	date	rate
0	2021-01-01	4.050499
1	2021-01-02	4.050499
2	2021-01-03	4.022499
3	2021-01-04	4.006499
4	2021-01-05	4.017501
...	...	...
361	2021-12-28	4.177184
362	2021-12-29	4.179208
363	2021-12-30	4.172408
364	2021-12-31	4.175359
365	2022-01-01	4.175760

366 rows × 2 columns

graph from the above extracted data.

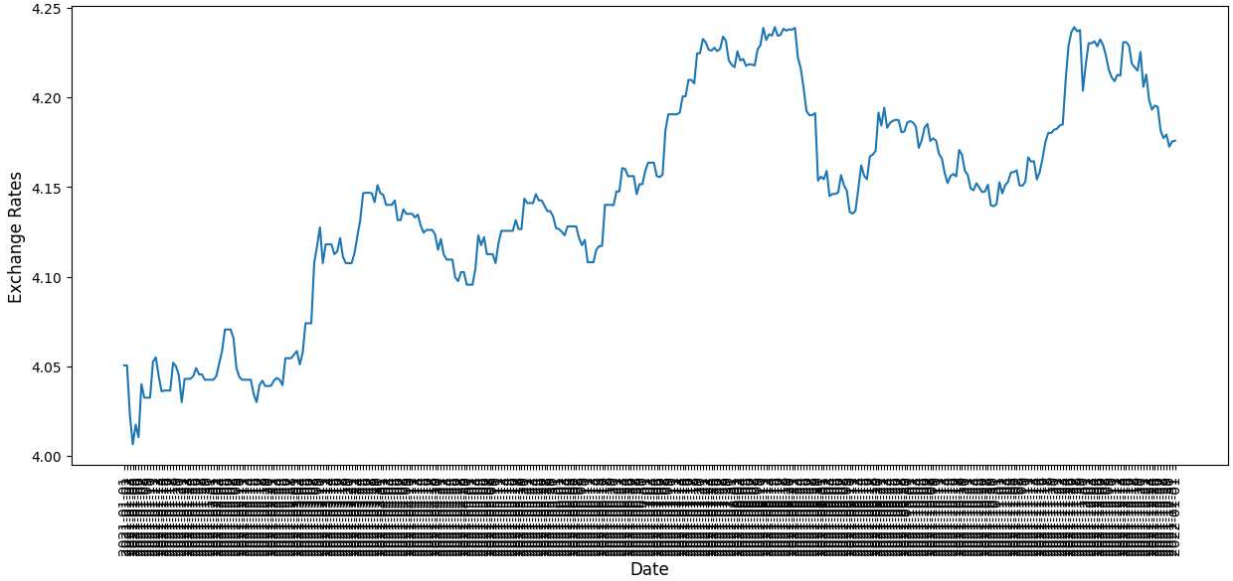
In [14]:

```
import matplotlib.pyplot as plt

# Put dates on the x-axis
x = df['date']
# Put exchange rates on the y-axis
y = df['rate']
# Specify the width and height of a figure in unit inches
fig = plt.figure(figsize=(15,6))
# Rotate the date ticks on the x-axis by degrees
plt.xticks(rotation=90)
# Set title on the axis
plt.xlabel('Date', fontsize=12)
plt.ylabel('Exchange Rates', fontsize=12)
# Plot the data
plt.plot(x,y)
```

Out[14]:

```
[<matplotlib.lines.Line2D at 0x79482c5ef250>]
```


4.25
4.20
4.15
4.10
4.05
4.00
Exchange Rates
Date