```python
import requests
from twilio.rest import Client

VIRTUAL_TWILIO_NUMBER = "your virtual twilio number"
VERIFIED_NUMBER = "your own phone number verified with Twilio"

STOCK_NAME = "TSLA"
COMPANY_NAME = "Tesla Inc"

STOCK_ENDPOINT = "https://www.alphavantage.co/query"
NEWS_ENDPOINT = "https://newsapi.org/v2/everything"

STOCK_API_KEY = "***************"
NEWS_API_KEY = "********"
TWILIO_SID = "***********"
TWILIO_AUTH_TOKEN = "***********"

## STEP 1: Use https://www.alphavantage.co/documentation/#daily
# When stock price increase/decreases by 5% between yesterday and the day before yesterday then print(" Get News").

#Get yesterday's closing stock price
stock_params = {
    "function": "TIME_SERIES_DAILY",
    "symbol": STOCK_NAME,
    "apikey": STOCK_API_KEY,
}

response = requests.get(STOCK_ENDPOINT, params=stock_params)
data = response.json()["Time Series (Daily)"]
data_list = [value for (key, value) in data.items()]
yesterday_data = data_list[0]
yesterday_closing_price = yesterday_data["4. close"]
print(yesterday_closing_price)

#Get the day before yesterday's closing stock price
day_before_yesterday_data = data_list[1]
```

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37 day_before_yesterday_closing_price =
   day_before_yesterday_data["4. close"]
38 print(day_before_yesterday_closing_price)
39
40 #Find the positive difference between 1 and 2. e.g.
   40 - 20 = -20, but the positive difference is 20.
   Hint: https://www.w3schools.com/python/ref_func_abs.
   asp
41 difference = float(yesterday_closing_price) - float(
   day_before_yesterday_closing_price)
42 up_down = None
43 if difference > 0:
44     up_down = "🔺"
45 else:
46     up_down = "🔻"
47
48 #Work out the percentage difference in price between
   closing price yesterday and closing price the day
   before yesterday.
49 diff_percent = round((difference / float(
   yesterday_closing_price)) * 100)
50 print(diff_percent)
51
52
53     ## STEP 2: Instead of printing ("Get News"),
   actually get the first 3 news pieces for the
   COMPANY_NAME.
54
55 #Instead of printing ("Get News"), use the News API
   to get articles related to the COMPANY_NAME.
56 #If difference percentage is greater than 5 then
   print("Get News").
57 if abs(diff_percent) > 1:
58     news_params = {
59         "apiKey": NEWS_API_KEY,
60         "qInTitle": COMPANY_NAME,
61     }
62
63     news_response = requests.get(NEWS_ENDPOINT,
   params=news_params)
64     articles = news_response.json()["articles"]
```

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65
66      #Use Python slice operator to create a list that
    contains the first 3 articles. Hint: https://
    stackoverflow.com/questions/509211/understanding-
    slice-notation
67      three_articles = articles[:3]
68      print(three_articles)
69
70      ## STEP 3: Use Twilio to send a seperate message
    with each article's title and description to your
    phone number.
71
72      #Create a new list of the first 3 article's
    headline and description using list comprehension.
73      formatted_articles = [f"{STOCK_NAME}: {up_down}{
    diff_percent}%\nHeadline: {article['title']}. \n
    Brief: {article['description']}" for article in
    three_articles]
74      print(formatted_articles)
75      #Send each article as a separate message via
    Twilio.
76      client = Client(TWILIO_SID, TWILIO_AUTH_TOKEN)
77
78      #TODO 8. - Send each article as a separate
    message via Twilio.
79      for article in formatted_articles:
80          message = client.messages.create(
81              body=article,
82              from_="+181791*****",
83              to="*******",
84          )
85
```