Laboratorio 4b

Explore REST APIs with API Simulator and Postman

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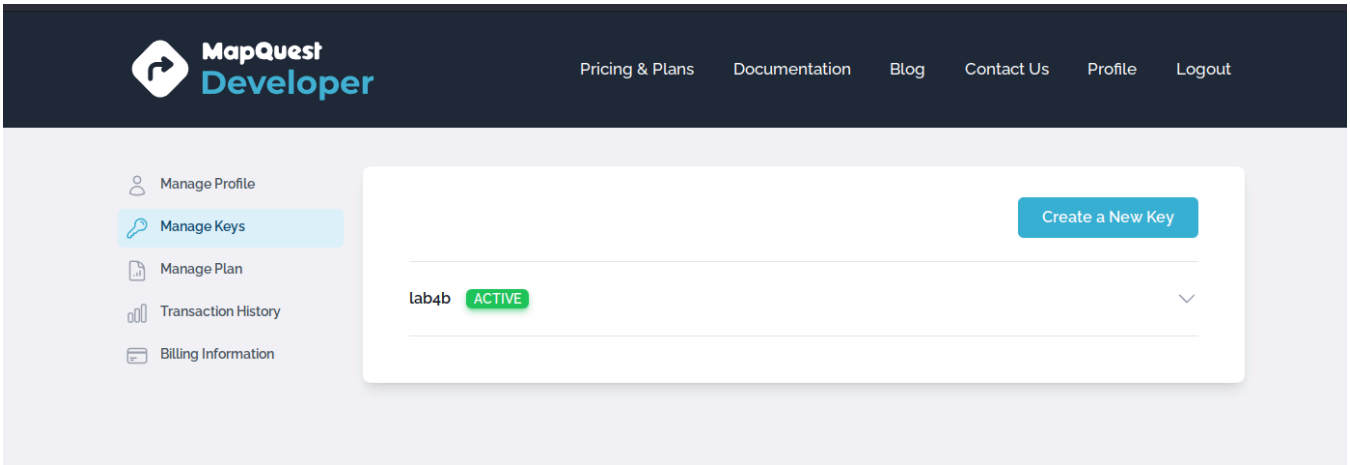
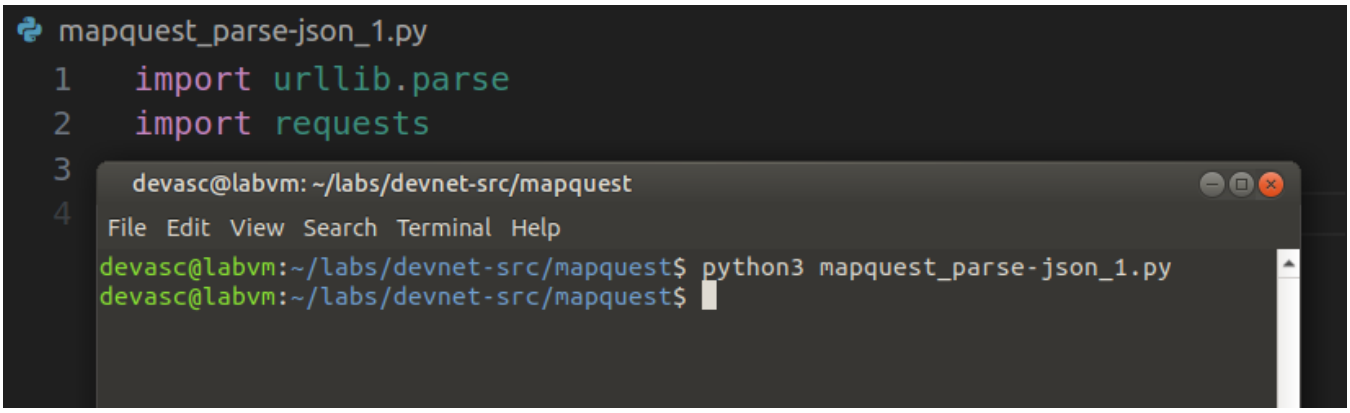
Parte 1: Inicializamos la VM de DEVASC.

Parte 2 y 3: Conseguimos un apikey

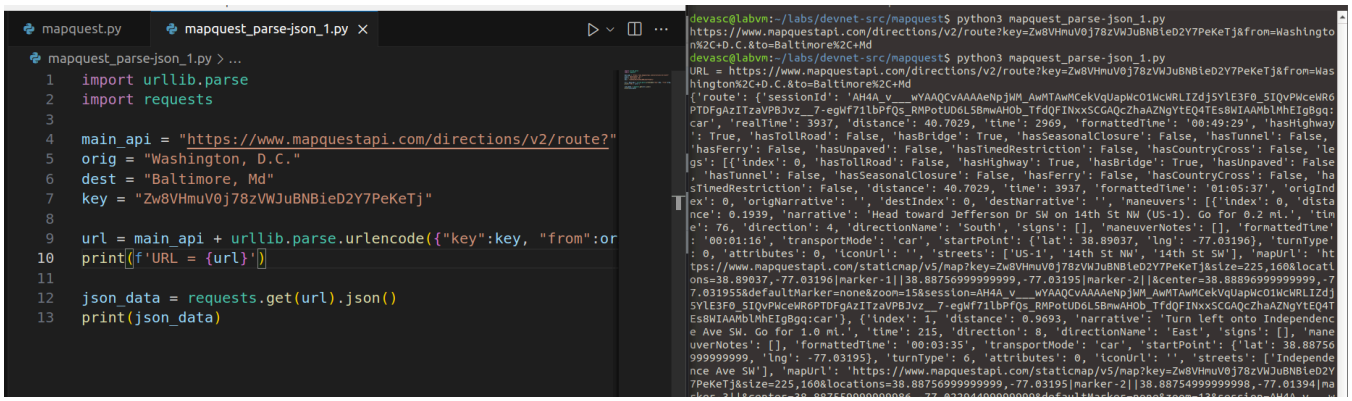


Parte 4: Creamos un script

Todo ok



Hacemos un request, para ver si todo funciona.



```python
import urllib.parse
import requests

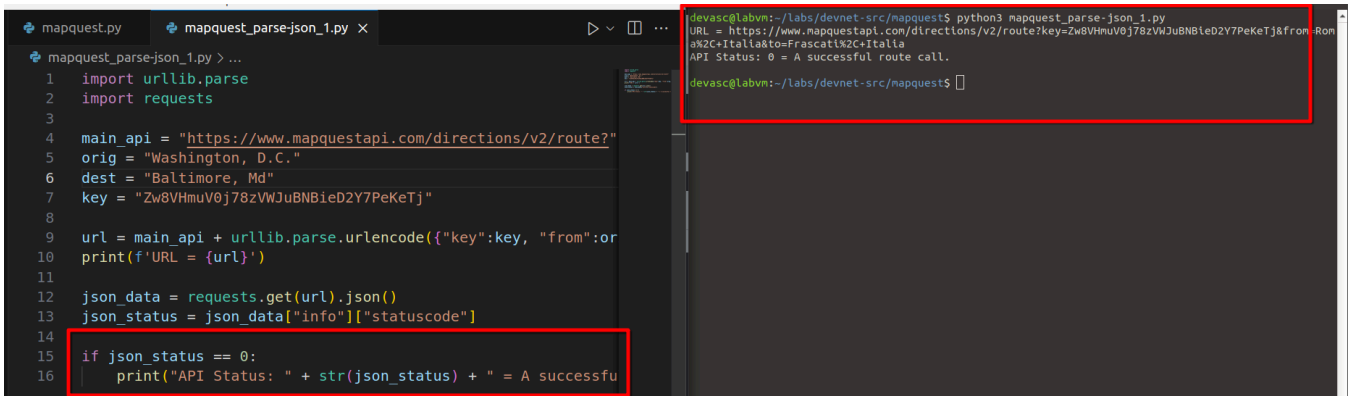
main_api = "https://www.mapquestapi.com/directions/v2/route?"
orig = "Washington, D.C."
dest = "Baltimore, Md"
key = "Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj"

url = main_api + urllib.parse.urlencode({"key":key, "from":or
print(f'URL = {url}')

json_data = requests.get(url).json()
print(json_data)
```

```
devasc@labvm:~/labs/devnet-src/mapquest$ python3 mapquest_parse-json_1.py
https://www.mapquestapi.com/directions/v2/route?key=Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj&from=Washingto
n%2C+D.C.&to=Baltimore%2C+Md
devasc@labvm:~/labs/devnet-src/mapquest$ python3 mapquest_parse-json_1.py
URL = https://www.mapquestapi.com/directions/v2/route?key=Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj&from=Was
hington%2C+D.C.&to=Baltimore%2C+Md
{'route': {'sessionId': 'AH4A_v___wYAAQCvAAAAeNpjWM_AwMTAwMCekVqUapWcO1WcWRLIZdjSYlE3F0_5IQvPWceWR6
PTDFgAzITzaVPBJvz__7-egWf71lbPfQs_RMPotUD6L5BmwAHOb_TfdQFINxxSCGAQcZhaAZNgYtEQ4TEs8WIAAMblMhEIgBgq:
car', 'realTime': 3937, 'distance': 40.7029, 'time': 2969, 'formattedTime': '00:49:29', 'hasHighway
': True, 'hasTollRoad': False, 'hasBridge': True, 'hasSeasonalClosure': False, 'hasTunnel': False,
'hasFerry': False, 'hasUnpaved': False, 'hasTimedRestriction': False, 'hasCountryCross': False, 'le
gs': [{'index': 0, 'hasTollRoad': False, 'hasHighway': True, 'hasBridge': True, 'hasUnpaved': False
, 'hasTunnel': False, 'hasSeasonalClosure': False, 'hasFerry': False, 'hasCountryCross': False, 'ha
sTimedRestriction': False, 'distance': 40.7029, 'time': 3937, 'formattedTime': '01:05:37', 'origInd
ex': 0, 'origNarrative': '', 'destIndex': 0, 'destNarrative': '', 'maneuvers': [{'index': 0, 'dista
nce': 0.1939, 'narrative': 'Head toward Jefferson Dr SW on 14th St NW (US-1). Go for 0.2 mi.', 'tim
e': 76, 'direction': 4, 'directionName': 'South', 'signs': [], 'maneuverNotes': [], 'formattedTime'
: '00:01:16', 'transportMode': 'car', 'startPoint': {'lat': 38.89037, 'lng': -77.03196}, 'turnType'
: 0, 'attributes': 0, 'iconUrl': '', 'streets': ['US-1', '14th St NW', '14th St SW'], 'mapUrl': 'ht
tps://www.mapquestapi.com/staticmap/v5/map?key=Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj&size=225,160&locati
ons=38.89037,-77.03196|marker-1||38.88756999999999,-77.03195|marker-2||&center=38.88896999999999,-7
7.031955&defaultMarker=none&zoom=15&session=AH4A_v___wYAAQCvAAAAeNpjWM_AwMTAwMCekVqUapWcO1WcWRLIZdj
5YlE3F0_5IQvPWceWR6PTDFgAzITzaVPBJvz__7-egWf71lbPfQs_RMPotUD6L5BmwAHOb_TfdQFINxxSCGAQcZhaAZNgYtEQ4T
Es8WIAAMblMhEIgBgq:car'}, {'index': 1, 'distance': 0.9693, 'narrative': 'Turn left onto Independenc
e Ave SW. Go for 1.0 mi.', 'time': 215, 'direction': 8, 'directionName': 'East', 'signs': [], 'mane
uverNotes': [], 'formattedTime': '00:03:35', 'transportMode': 'car', 'startPoint': {'lat': 38.88756
999999999, 'lng': -77.03195}, 'turnType': 6, 'attributes': 0, 'iconUrl': '', 'streets': ['Independe
nce Ave SW'], 'mapUrl': 'https://www.mapquestapi.com/staticmap/v5/map?key=Zw8VHmuV0j78zVWJuBNBieD2Y
7PeKeTj&size=225,160&locations=38.88756999999999,-77.03195|marker-2||38.887549999999998,-77.01394|na
```

Agregamos una capa de control de posibles problemas



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dest = "Baltimore, Md"
key = "Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj"

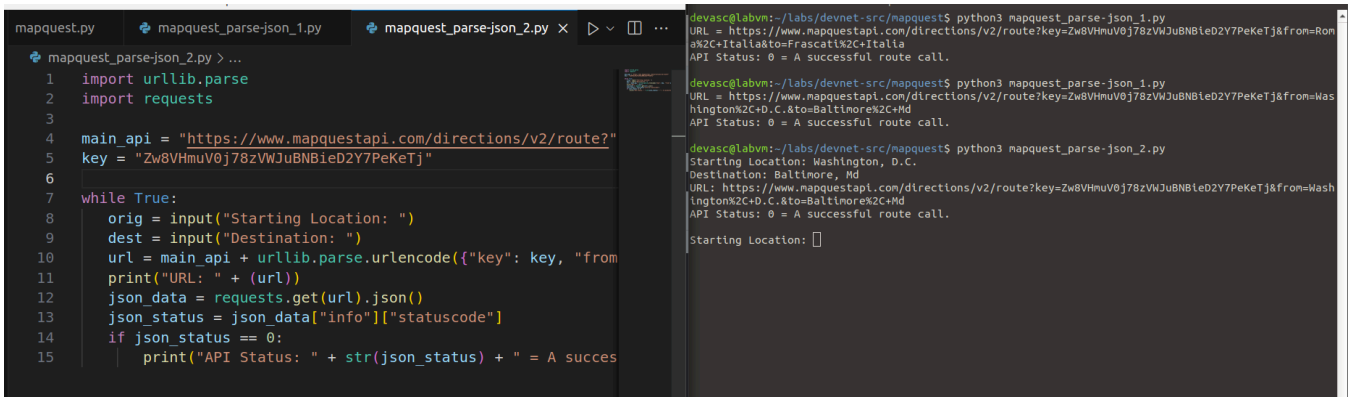
url = main_api + urllib.parse.urlencode({"key":key, "from":or
print(f'URL = {url}')

json_data = requests.get(url).json()
json_status = json_data["info"]["statuscode"]

if json_status == 0:
    print("API Status: " + str(json_status) + " = A successfu
```

```
devasc@labvm:~/labs/devnet-src/mapquest$ python3 mapquest_parse-json_1.py
URL = https://www.mapquestapi.com/directions/v2/route?key=Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj&from=Rom
a%2C+Italia&to=Frascati%2C+Italia
API Status: 0 = A successful route call.

devasc@labvm:~/labs/devnet-src/mapquest$
```



```python
import urllib.parse
import requests

main_api = "https://www.mapquestapi.com/directions/v2/route?"
key = "Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj"

while True:
    orig = input("Starting Location: ")
    dest = input("Destination: ")
    url = main_api + urllib.parse.urlencode({"key": key, "from
    print("URL: " + (url))
    json_data = requests.get(url).json()
    json_status = json_data["info"]["statuscode"]
    if json_status == 0:
        print("API Status: " + str(json_status) + " = A succes
```

```
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a%2C+Italia&to=Frascati%2C+Italia
API Status: 0 = A successful route call.

devasc@labvm:~/labs/devnet-src/mapquest$ python3 mapquest_parse-json_1.py
URL = https://www.mapquestapi.com/directions/v2/route?key=Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj&from=Was
hington%2C+D.C.&to=Baltimore%2C+Md
API Status: 0 = A successful route call.

devasc@labvm:~/labs/devnet-src/mapquest$ python3 mapquest_parse-json_2.py
Starting Location: Washington, D.C.
Destination: Baltimore, Md
URL: https://www.mapquestapi.com/directions/v2/route?key=Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj&from=Wash
ington%2C+D.C.&to=Baltimore%2C+Md
API Status: 0 = A successful route call.

Starting Location:
```
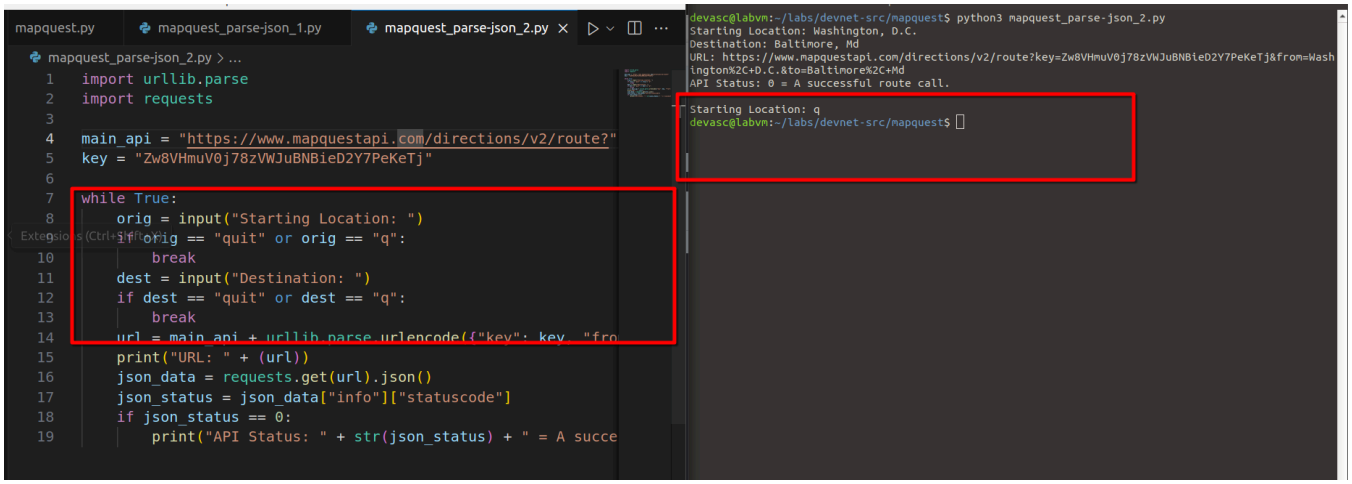

Añadimos una opción para salir:



Introducimos la URL generada en el navegador

Continuando con todos los pasos, trabajamos con el json de la respuesta llegando a este script final:

```
import urllib.parse
import requests

main_api = "https://www.mapquestapi.com/directions/v2/route?"
key = "Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj"


while True:
    orig = input("Starting Location: ")
    if orig == "quit" or orig == "q":
        break
    dest = input("Destination: ")
    if dest == "quit" or dest == "q":
        break
    url = main_api + urllib.parse.urlencode({"key":key, "from":orig, "to":dest})
    json_data = requests.get(url).json()
    print("URL: " + (url))
    json_data = requests.get(url).json()
    json_status = json_data["info"]["statuscode"]
    if json_status == 0:
        print("API Status: " + str(json_status) + " = A successful route call.\n")
        print("=============================================")
        print("Directions from " + (orig) + " to " + (dest))
        print("Trip Duration:   " + (json_data["route"]["formattedTime"]))
        print("Kilometers:      " + str("{:.2f}".format((json_data["route"]["distance"])*
        # print("Fuel Used (Ltr): " + str("{:.2f}".format((json_data["route"]["fuelUsed"]
        print("=============================================")
        for each in json_data["route"]["legs"][0]["maneuvers"]:
            print((each["narrative"]) + " (" + str("{:.2f}".format((each["distance"])*1.6
        print("=============================================\n")
    elif json_status == 402:
        print("**********************************************")
        print("Status Code: " + str(json_status) + "; Invalid user inputs for one or both
        print("**********************************************\n")
    elif json_status == 611:
        print("**********************************************")
        print("Status Code: " + str(json_status) + "; Missing an entry for one or both lo
        print("**********************************************\n")
    else:
```

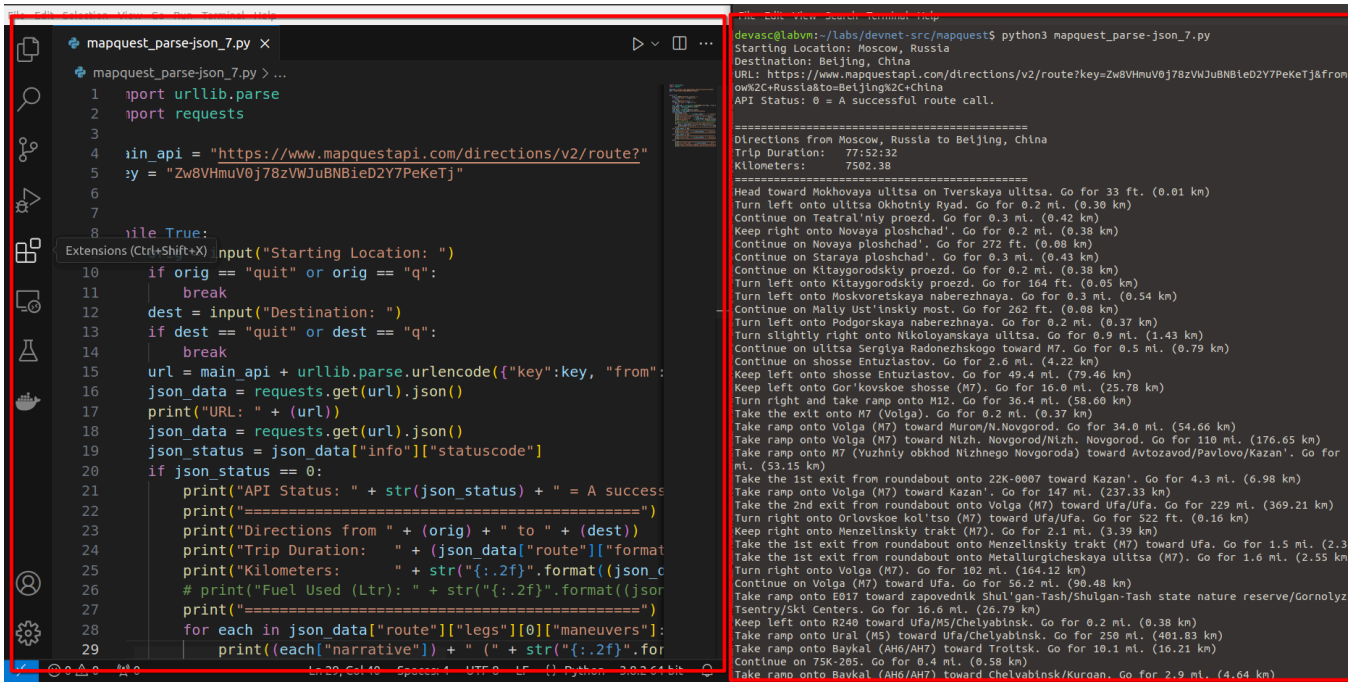
```
        print("*************************************************************************")
        print("For Staus Code: " + str(json_status) + "; Refer to:")
        print("https://developer.mapquest.com/documentation/directions-api/status-codes")
        print("*************************************************************************\n")
```

Comenté una línea, pues fuelUsed y ano está dispobnible en su API.

El output es así:

```
Starting Location: Moscow, Russia
Destination: Beijing, China
URL: https://www.mapquestapi.com/directions/v2/route?key=Zw8VHmuV0j78zVWJuBNBieD2Y7PeKeTj&
API Status: 0 = A successful route call.

=============================================
Directions from Moscow, Russia to Beijing, China
Trip Duration:   77:52:32
Kilometers:      7502.38
=============================================
Head toward Mokhovaya ulitsa on Tverskaya ulitsa. Go for 33 ft. (0.01 km)
Turn left onto ulitsa Okhotniy Ryad. Go for 0.2 mi. (0.30 km)
Continue on Teatral'niy proezd. Go for 0.3 mi. (0.42 km)
Keep right onto Novaya ploshchad'. Go for 0.2 mi. (0.38 km)
Continue on Novaya ploshchad'. Go for 272 ft. (0.08 km)
Continue on Staraya ploshchad'. Go for 0.3 mi. (0.43 km)
<<MUCHO TEXTO>>
Turn right. Go for 0.1 mi. (0.22 km)
Continue straight ahead. Go for 6.3 mi. (10.11 km)
Turn left. Go for 15.1 mi. (24.27 km)
Turn left. Go for 128 mi. (205.66 km)
Turn left. Go for 0.5 mi. (0.88 km)
Turn right toward 110. Go for 58.0 mi. (93.43 km)
Turn left onto 110. Go for 47.8 mi. (76.92 km)
Turn left onto 110. Go for 22.4 mi. (36.05 km)
Turn left onto 110. Go for 42.3 mi. (68.14 km)
Turn sharp right onto 207. Go for 18.0 mi. (28.91 km)
Continue on 110. Go for 107 mi. (171.78 km)
Continue on Gulouxi ST. Go for 0.1 mi. (0.21 km)
Turn right toward XI'Anmen ST. Go for 1.9 mi. (3.07 km)
Turn left onto XI'Anmen ST. Go for 0.2 mi. (0.29 km)
Turn right onto Fuyuo ST. Go for 1.1 mi. (1.79 km)
Turn left onto West Chang'an Ave. Go for 0.5 mi. (0.82 km)
Turn right onto West Chang'an Ave. Go for 0.1 mi. (0.20 km)
Arrive at West Chang'an Ave. (0.00 km)
=============================================

Starting Location: q
```

He recortado el texto pues es inmensa la respuesta, aquí una iamgen:



Dando por finalizado el Lab4b.