Amazon Shopping Bot in Python

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Introduction

We chose to create a web crawler that is able to search amazon.com for any given product and display the output in an easy to read format. There are 2 python files that can be run.

1. term.py --- A terminal mode where more advanced users can tweak with settings and arguments. The user can also login to their amazon account here
2. gui.py --- A GUI mode where the user is presented with a simple search box that output is displayed below

Demo

Back-end

Our project uses a library called Selenium.

This package allows use to have automated web browsing in the background. This means we can scrap amazon.com for product and price data as well as simulate user input.

A webbrowser driver must first be setup in order go to websites and automate browsing. You can have a driver for almost any mainstream browser (Chrome, Firefox, Safari, Opera...even Microsoft Edge”

How search is handled in Selenium

```
def search(driver, userid, database, search_in = 0):

    if search_in == 0:
        userInput = input("Enter any item you would like to search for on Amazon : ")
    else:
        userInput = search_in

    # Add the search to user's search history in the database
    if database != 0:
        if userid != 1:
            shop_db = db_connector.connect()
            query = "INSERT INTO History(UserId, RecentSearches) VALUES (\'%s', '%s')" % (userid, str(userInput))
            shop_db.commit()

    driver.get('https://www.amazon.com')
    driver.implicitly_wait(5)

    search_box = driver.find_element_by_id("twotabsearchtextbox")
    search_box.send_keys(userInput)
    search_box.send_keys(Keys.RETURN)
```

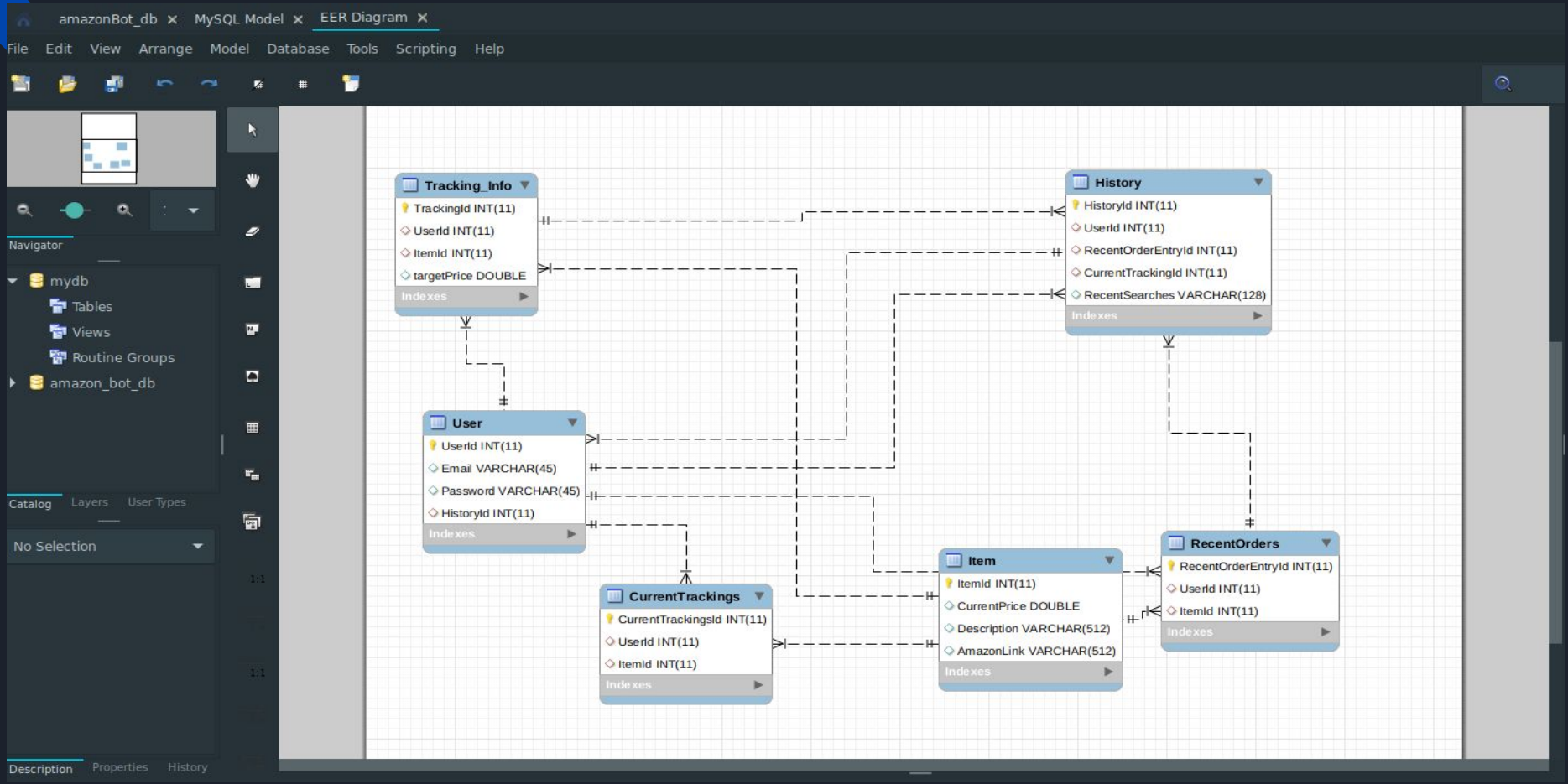
How output is parsed in Selenium

```
55
56  def getItemName(driver):
57      driver.implicitly_wait(10)
58      item = driver.find_elements_by_xpath("//*[@class='a-link-normal a-text-normal']")
59      if len(item) > 0:
60          return item[0].text,item[1].text,item[2].text
61
62
63      return "ITEM NOT FOUND"
64
65  def getItemPrice(driver):
66      driver.implicitly_wait(10)
67      priceWhole = driver.find_elements_by_class_name('a-price-whole')
68      priceDec = driver.find_elements_by_class_name('a-price-fraction')
69
70      if(len(priceWhole) > 0 and len(priceDec) > 0):
71          return priceWhole[0].text, priceDec[0].text, priceWhole[1].text, priceDec[1].tex
72
73      return "PRICE NOT FOUND"
74
```

Database

- Database managed in MySQL
- Client side
- Used to keep track of various information, such as :
  - Items being price tracked
  - Information about the item (Name, description, Amazon link, ect.)
  - Recently searched items
  - User login information

Database - Entity Relationship Diagram



Database Connection to the Driver Code

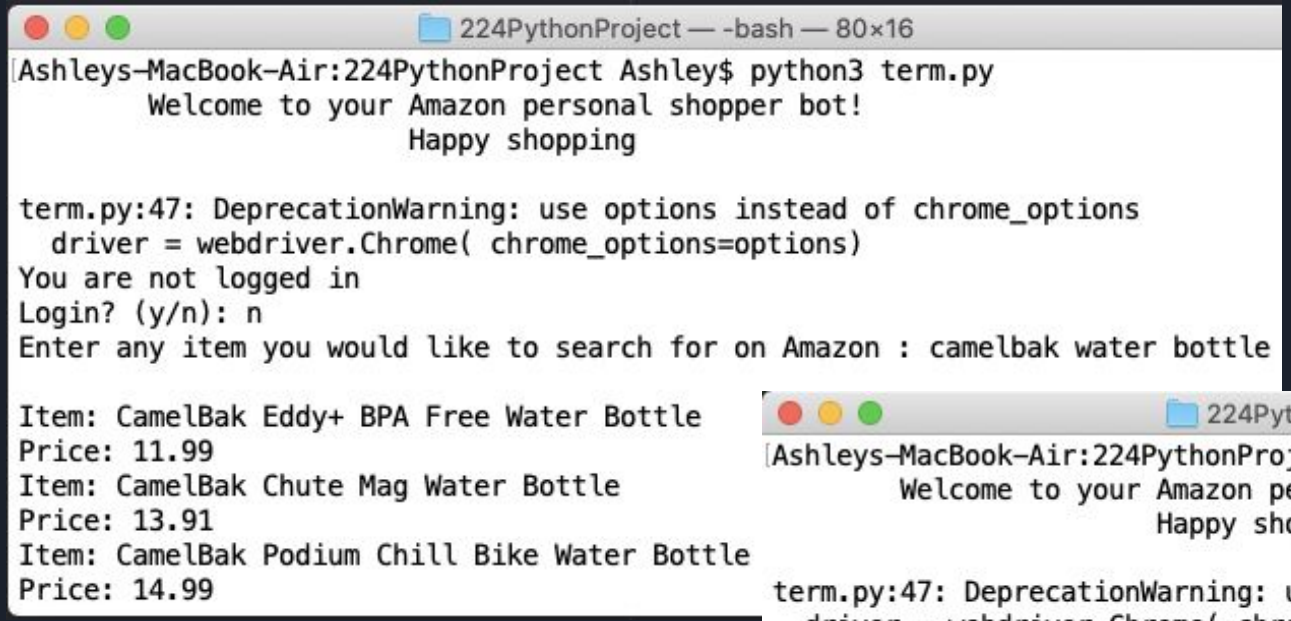
main.py

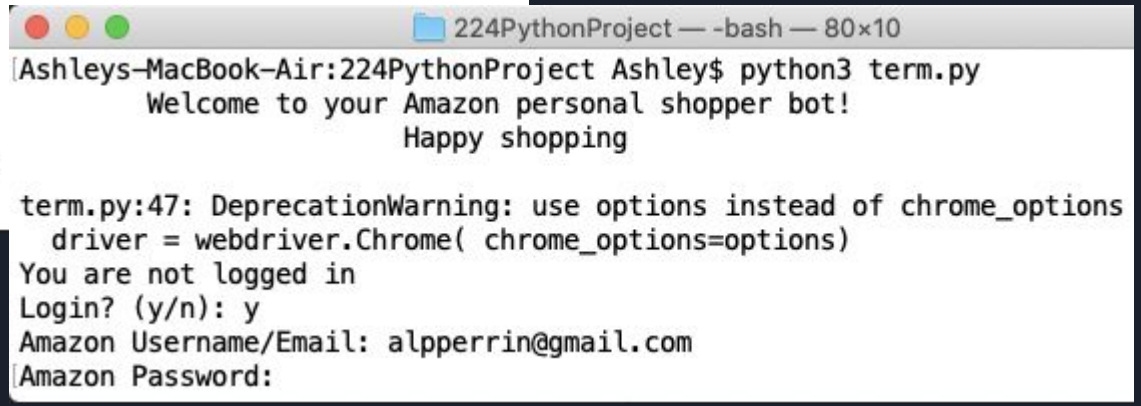
```
import db_connector

def main():
    shop_db = db_connector.connect()

    query = "INSERT INTO History(UserId, RecentSearches)
VALUES "('%s', '%s')" % (userid, item_name)

    shop_db.commit()
```

db_connector.py

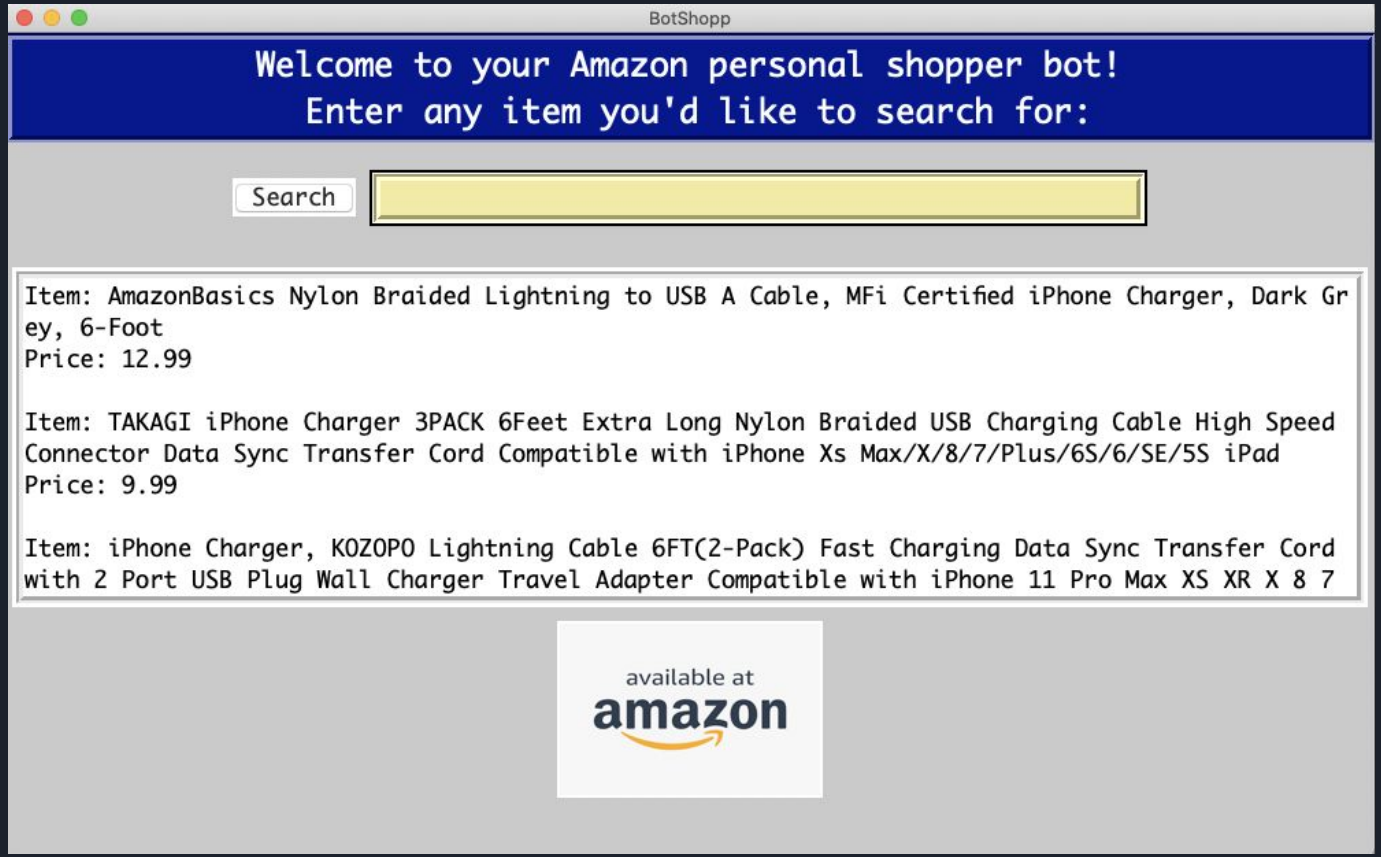
```
import mysql.connector

#NOTE: sudo apt-get install python3-mysql.connector



def connect():
    shop_db = mysql.connector.connect(host="127.0.0.1",
                                      database="amazon_bot_db",
                                      user="root",
                                      passwd="1890BTz!")
    print("Connected to " + str(shop_db))
    return shop_db
```

Early Stages;
Command line output from term.py





GUI


BotShopp
Welcome to your Amazon personal shopper bot!
Enter any item you'd like to search for:
Search
Item: AmazonBasics Nylon Braided Lightning to USB A Cable, MFi Certified iPhone Charger, Dark Gr
ey, 6-Foot
Price: 12.99
Item: TAKAGI iPhone Charger 3PACK 6Feet Extra Long Nylon Braided USB Charging Cable High Speed
Connector Data Sync Transfer Cord Compatible with iPhone Xs Max/X/8/7/Plus/6S/6/SE/5S iPad
Price: 9.99
Item: iPhone Charger, KOZOPO Lightning Cable 6FT(2-Pack) Fast Charging Data Sync Transfer Cord
with 2 Port USB Plug Wall Charger Travel Adapter Compatible with iPhone 11 Pro Max XS XR X 8 7
available at
amazon

Conclusion

To conclude, we all have had a great deal of fun trying out new things with this project. There were a few things we wanted to implement that we could not figure out how to do such as price tracking and login capabilities, but overall we are quite proud of our final product and would also like to answer any questions you guys may have.