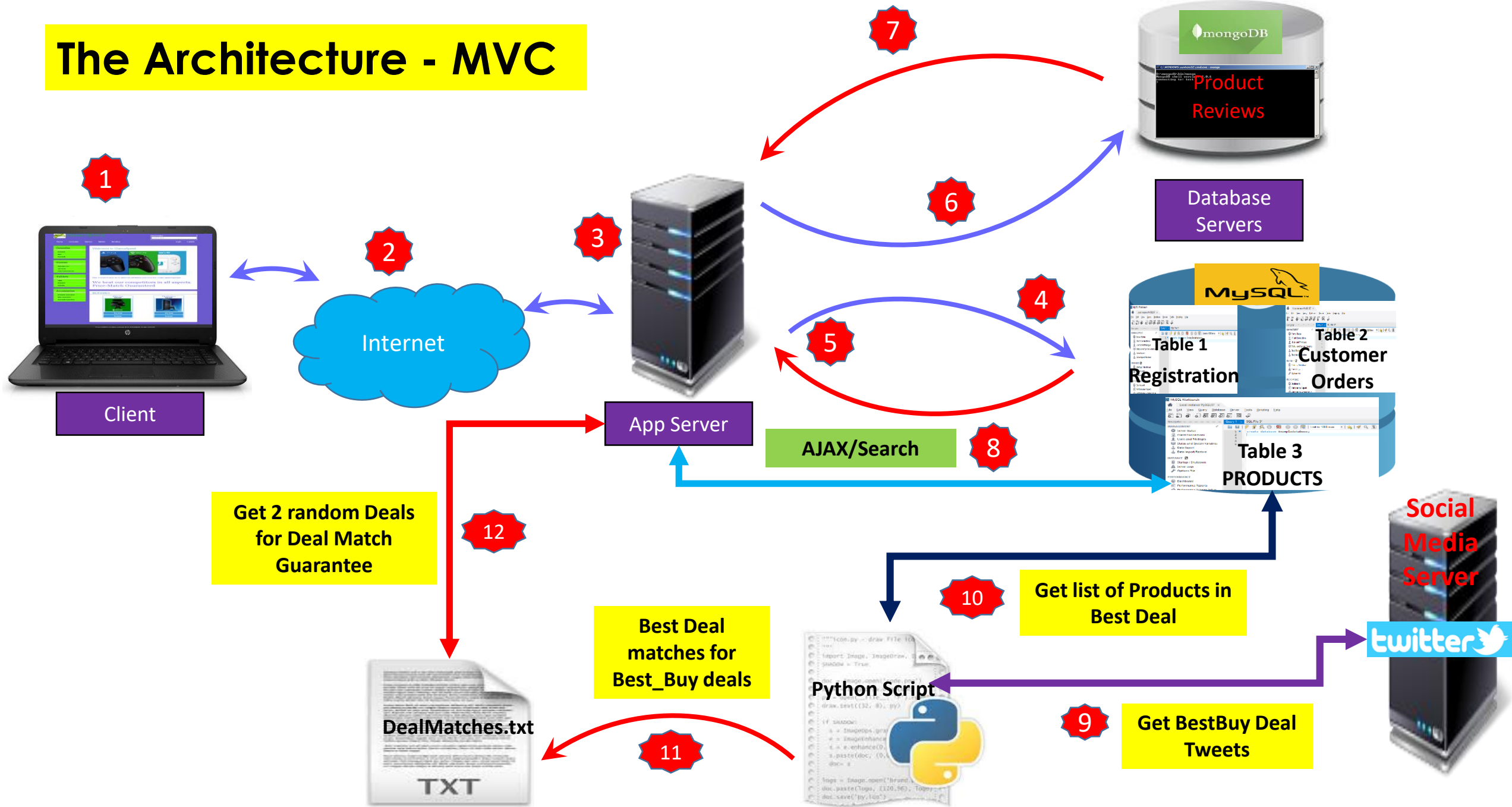


TUTORIAL #6

PYTHON-TWITTER-API

DR. ATEF BADER

The Architecture - MVC



1.Python – Overview:

- Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable.
- It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.
- Python is Interpreted: Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.
- Python is Interactive: You can actually sit at a Python prompt and interact with the interpreter directly to write your programs.
- Python is Object-Oriented: Python supports Object-Oriented style or technique of programming that encapsulates code within objects.
- Python is a Beginner's Language: Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.


Let us See an Example of Python Code:

```
print "Hello, Python!"
```

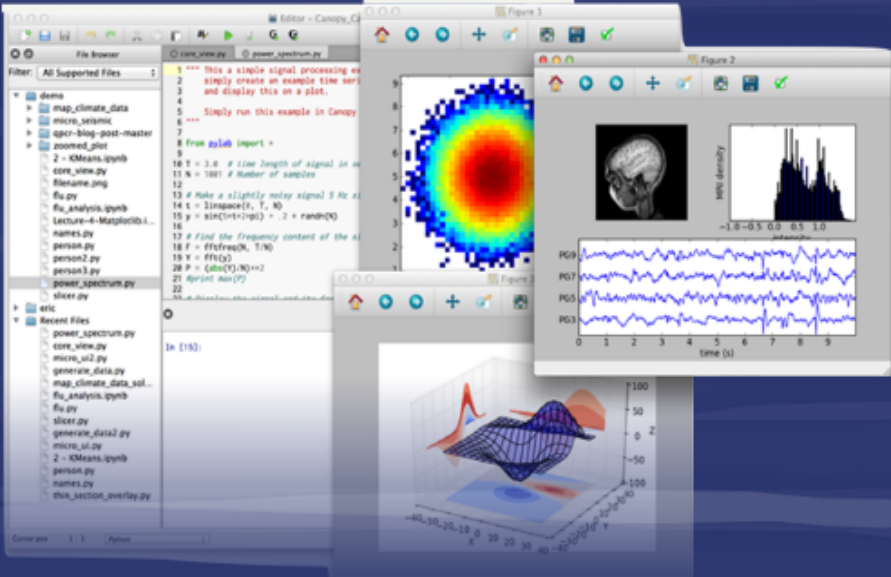
2.Enthought Canopy:


Easy Python Deployment Plus Integrated Analysis Environment for Scientific Computing, Data Analysis and Engineering.

DOWNLOADS: [Canopy](#) | [PyXLL](#) | [View cart \(\\$0 \)](#) | [Create Account or Log In](#)



PRODUCTS TRAINING CONSULTING COMPANY CONTACT





- One-Click Python Deployment
- Analysis Environment
- Development Platform
- Integrated Training on Demand

Get Canopy >

Python Training on Demand

Enthought Canopy

Python for Excel

Software Consulting

2. Enthought Canopy – Download:

- Go to <https://store.enthought.com/downloads/#default> and click on the ‘Download Canopy’ button to download Enthought Canopy.

Download Canopy

v. 1.7.4 · released July 21, 2016

439.8 MB MD5: 06789a12d906fa83f6e1558615b722de

Windows Linux Mac 64-bit 32-bit

ENTHOUGHT CANOPY

Enthought Canopy: Easy Python Deployment Plus Integrated Analysis Environment for Scientific Computing, Data Analysis and Engineering

FREE for all users: Canopy Express, which includes access to 200+ of Canopy's most popular Python packages for scientific computing, data analysis, and engineering PLUS Canopy's integrated analysis environment. Get started today with easy deployment of pre-built, tested, and dependency-aware packages such as **NumPy**, **SciPy**, **Pandas**, **Matplotlib**, **IPython** and more.

DOWNLOAD Canopy

By downloading Canopy you acknowledge your acceptance of all the terms and conditions of the applicable license.

Want to Get Even More From Canopy?

See our [subscription options](#) to unlock additional features such as:

- An extended library of over 450 pre-built and tested packages, with easy updates and customized package installation through Canopy's Graphical Package Manager

Python Training from the Pros

With Canopy you'll have a robust environment and tools for working in Python. Now learn how to maximize your results with training from Enthought's experts.

Online Courses

Online Python Training designed for the unique needs of scientists, engineers, analysts and quants.

ENTHOUGHT TRAINING ON DEMAND [See Courses](#)

Live Classroom Training

Open and custom classes at locations across the United States and Western Europe:

- [Python for Scientists, Analysts and Engineers](#)
- [Python for Data Science](#)
- [Python Foundations](#)

Click on
'DOWNLOAD
Canopy'

2. Enthought Canopy – Download :

To start the Installation , go to the folder where Enthought Canopy has been downloaded and double click on “canopy-1.7.4-win-64.msi” Installation File.

The screenshot shows the Enthought Canopy website. At the top, there's a navigation bar with the Enthought logo and links for PRODUCTS, TRAINING, CONSULTING, COMPANY, and CONTACT. Below the navigation bar, the main content area is divided into sections. On the left, there's a 'Download Canopy' section with a 'v. 1.7.4 · released July 21, 2016' note. It features a 'DOWNLOAD Canopy' button and a description of Canopy Express. On the right, there's a 'Python Training from the Pros' section with a 'See Courses' button. A purple callout box on the right side of the page says 'Double click on the downloaded canopy installation File'. A purple arrow points from this callout box to the 'canopy-1.7.4-win-64.msi' file in the Windows taskbar at the bottom. The taskbar also shows a 'Show all' button and a close button (X).

DOWNLOADS: [Canopy](#) | [PyXLL](#) | [View cart \(\\$0 \)](#) | [Create Account or Log In](#)

ENTHOUGHT
SCIENTIFIC COMPUTING SOLUTIONS

PRODUCTS TRAINING CONSULTING COMPANY CONTACT

Download Canopy

v. 1.7.4 · released July 21, 2016

Windows Linux Mac 64-bit 32-bit

439.8 MB MD5: 06789a12d906fa83f6e1558615b722de

Enthought Canopy: Easy Python Deployment Plus Integrated Analysis Environment for Scientific Computing, Data Analysis and Engineering

FREE for all users: Canopy Express, which includes access to 200+ of Canopy's most popular Python packages for scientific computing, data analysis, and engineering PLUS Canopy's integrated analysis environment. Get started today with easy deployment of pre-built, tested, and dependency-aware packages such as NumPy, SciPy, Pandas, Matplotlib, IPython and more.

Want to Get Even More From Canopy?

Python Training from the Pros

With Canopy you'll have a robust environment and tools for working in Python. Now learn how to maximize your results with training from Enthought's experts.

Online Courses

Online Python Training designed for the unique needs of scientists, engineers, analysts and quants.

See Courses

Live Classroom Training

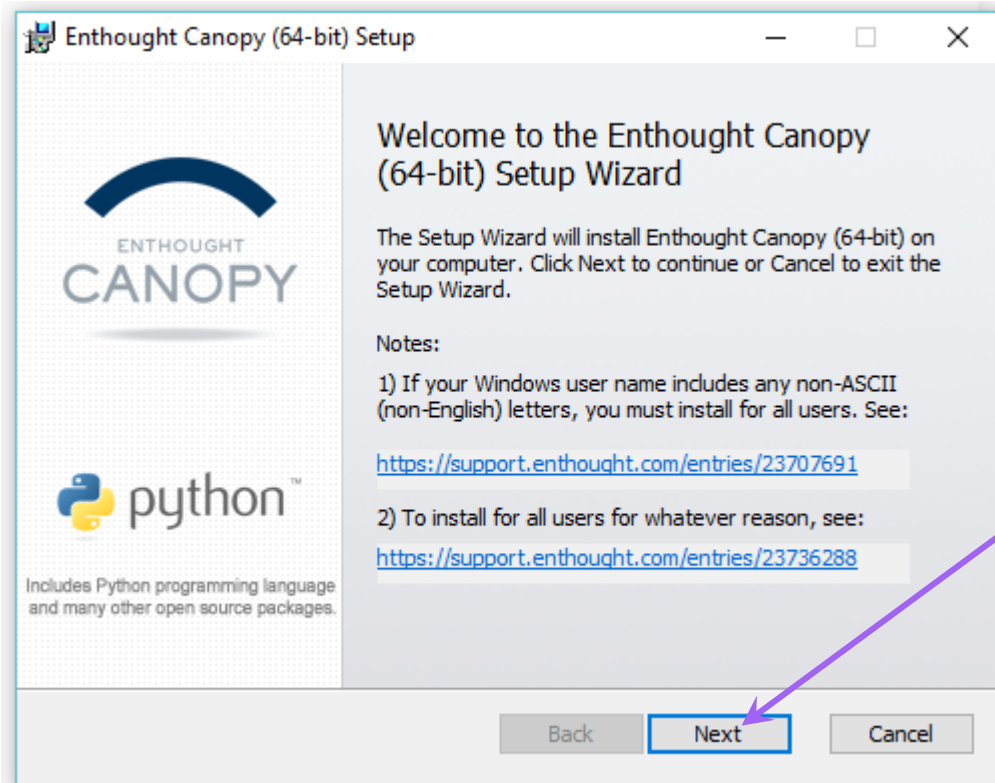
Group and custom classes at locations

canopy-1.7.4-win-64.msi

Show all X

3. Enthought Canopy – Setup :

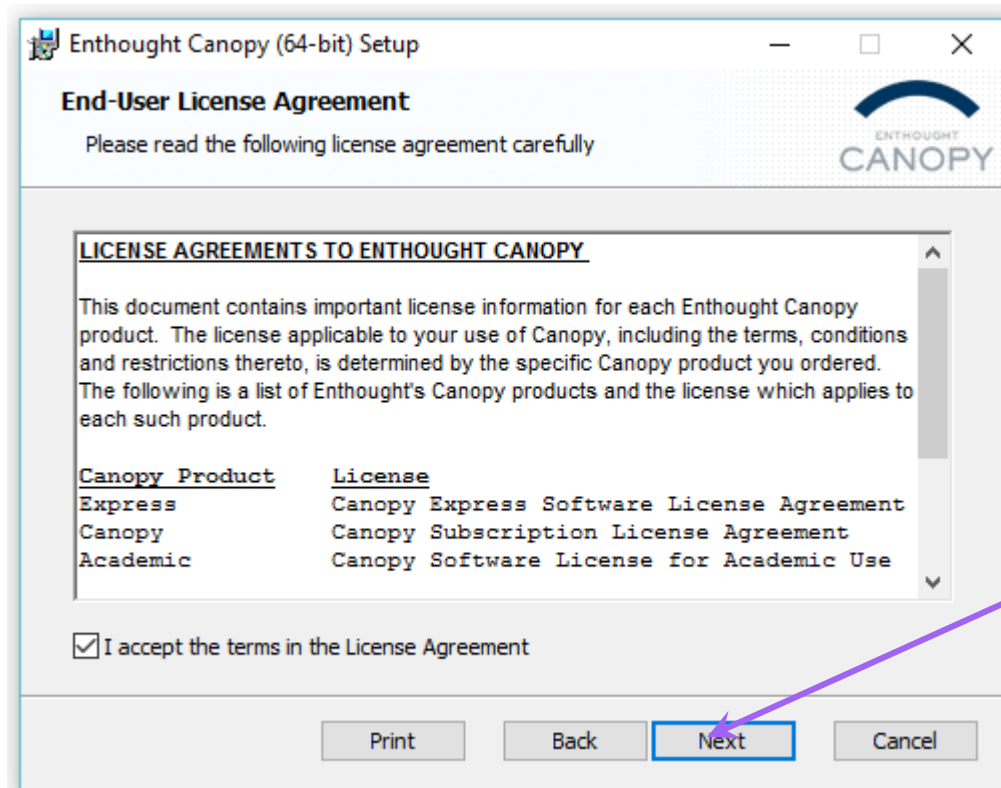
- Once Double clicked on the Installation file.
- This should open the “Enthought Canopy Setup” wizard as shown below.
- Click on ‘Next’ to proceed with Installation.



Click ‘Next’ to proceed with Installation.

3. Enthought Canopy – Setup :

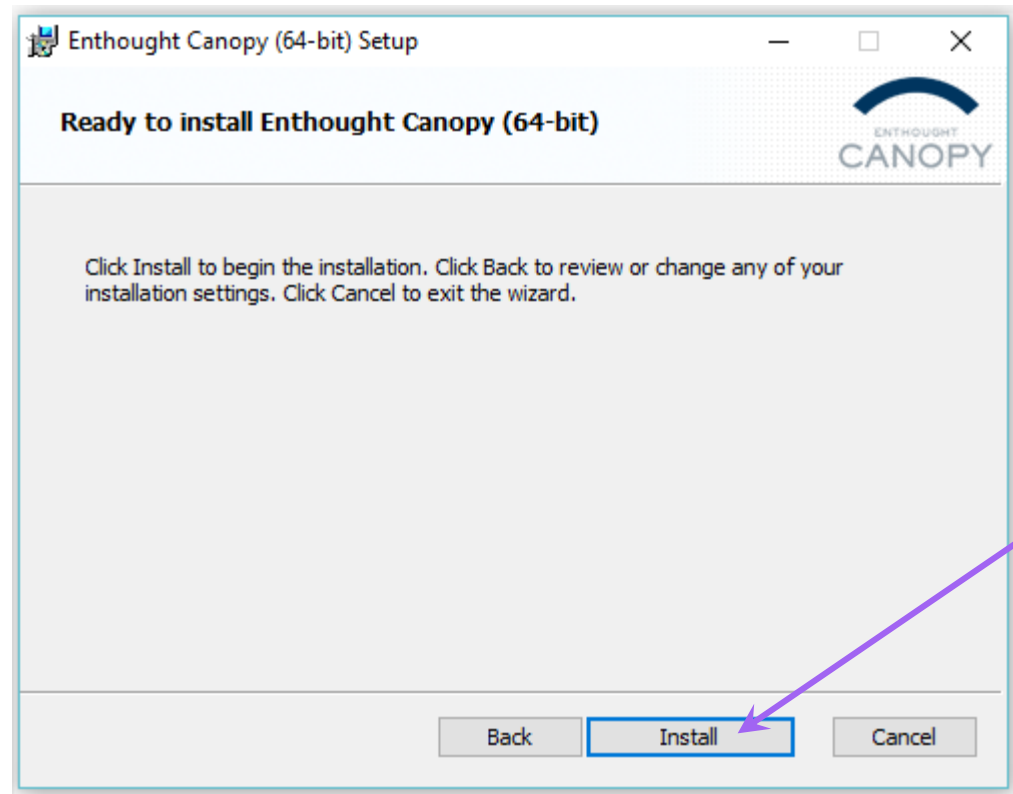
- Accept the License agreement and proceed by Clicking on 'Next' Button.



Accept the license agreement and click next

3. Enthought Canopy – Setup :

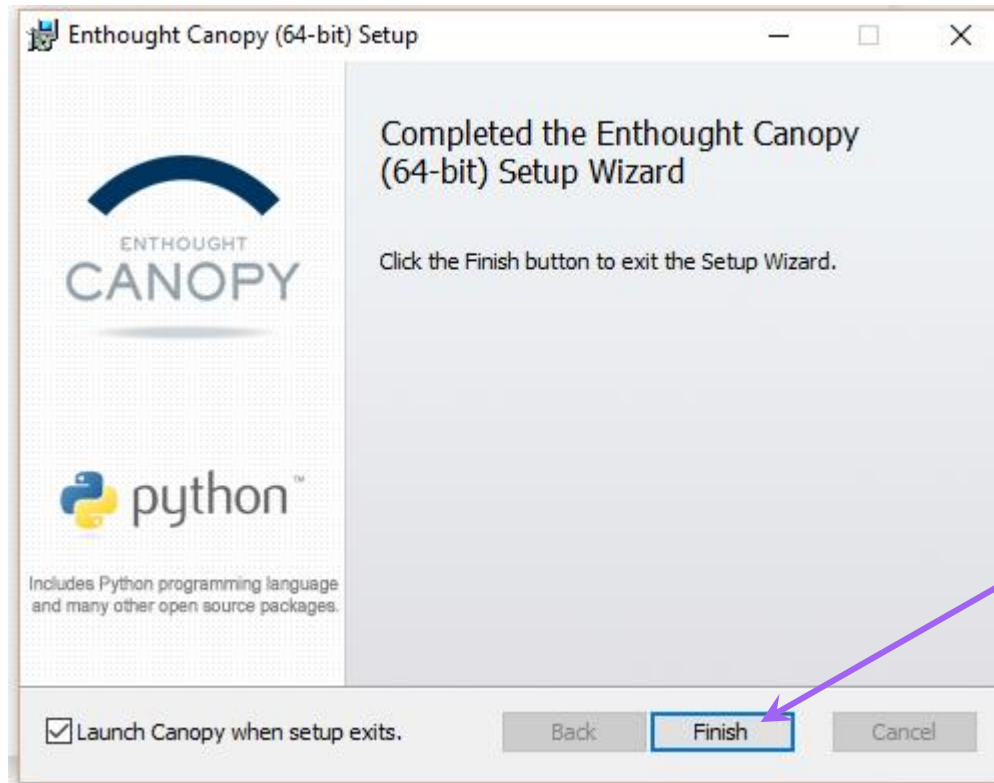
- Click Install Button to Install Enthought Canopy in your System.



Click Install Button
to install canopy

3. Enthought Canopy – Setup :

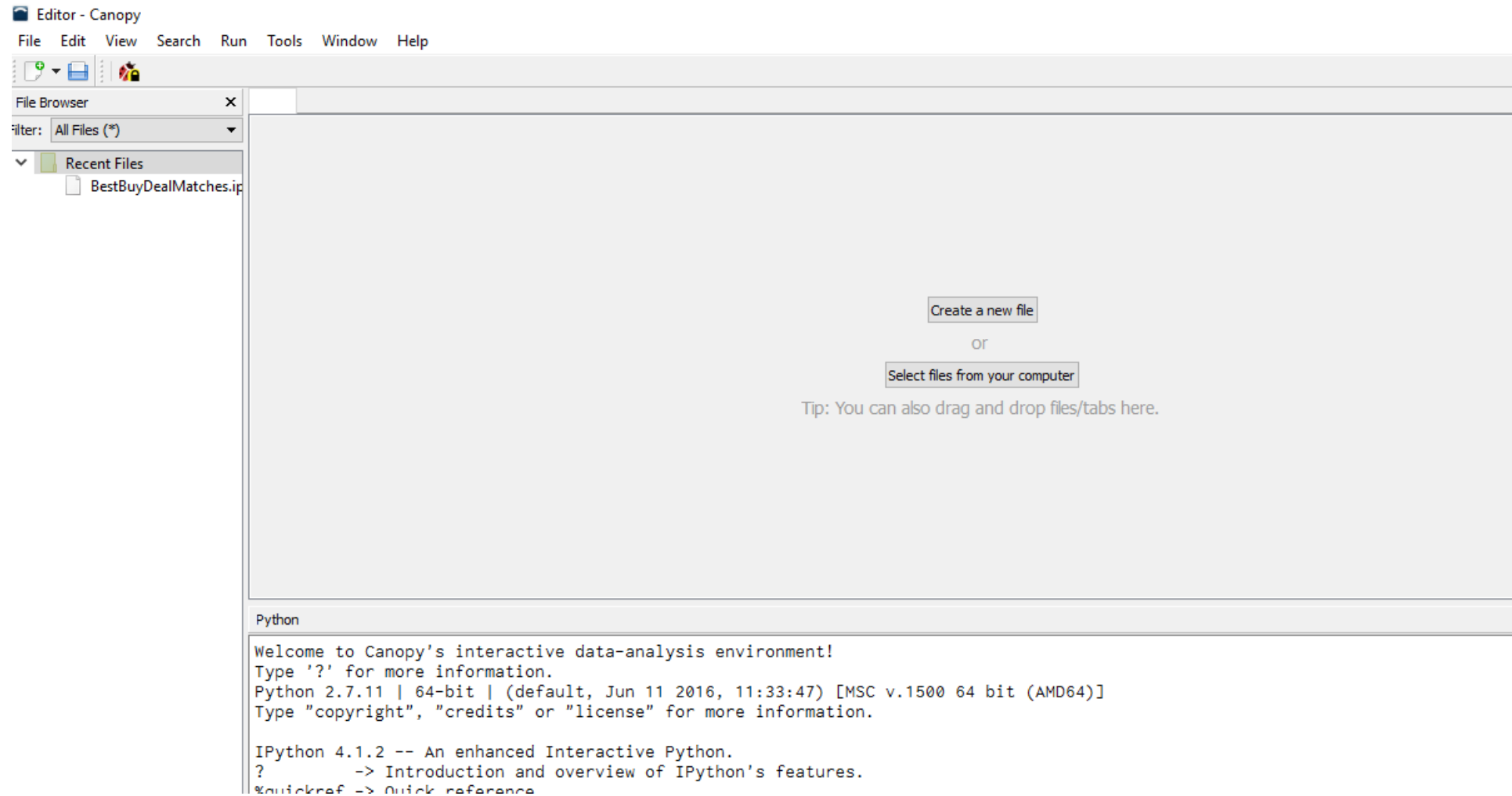
- Once the Installation is complete, click on 'Finish' to complete the process



Once the canopy setup is installed click finish button to complete the installation process

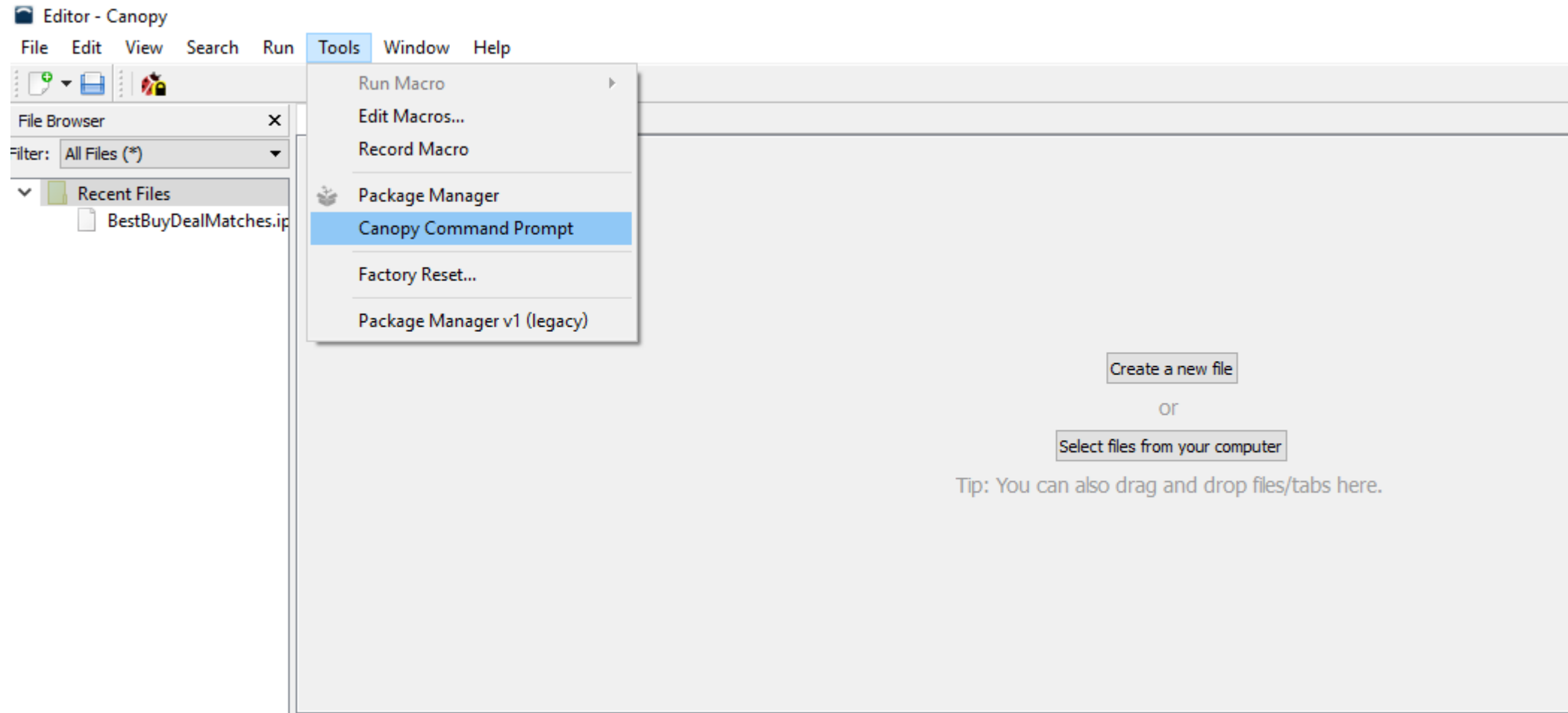
4 .Enthought Canopy:

- Open Enthought Canopy From your Desktop



5.Canopy Command Prompt

- Click Tools->Canopy Command Prompt to open command prompt from canopy



5. Twitter API Download

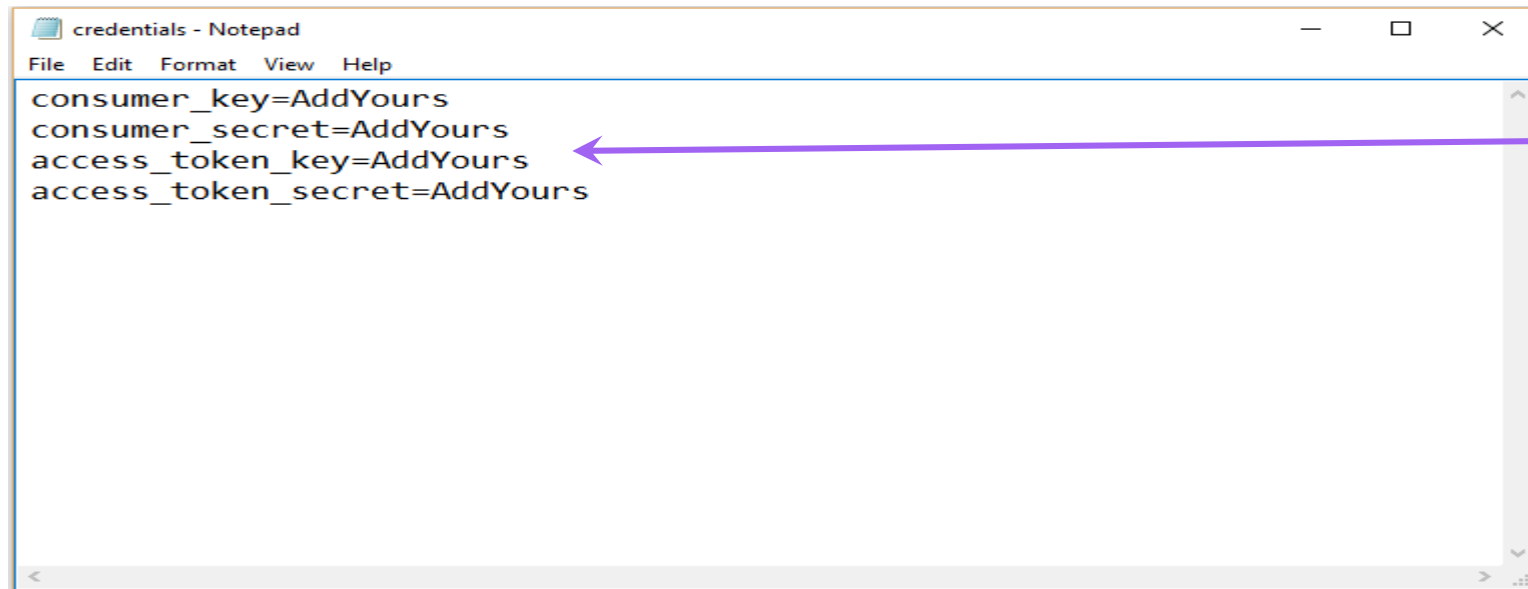
- Twitter API is a library that allows python code to be connected with twitter and get tweets
- **pip** is a package management system used to install and manage software packages written in **Python**
- Install Twitter API using the command **pip install TwitterAPI** in your canopy prompt

```
Canopy Command Prompt
(Canopy 64bit) C:\apache-tomcat-7.0.34\webapps\GameSpeedServletCSS_SAX_MySql_MongoDBAnalytics_AJAX_Twitter_Tutorial>pip install TwitterAPI
Collecting TwitterAPI
  Using cached TwitterAPI-2.4.2.tar.gz
Requirement already satisfied (use --upgrade to upgrade): requests in c:\user\lib\site-packages (from TwitterAPI)
Collecting requests_oauthlib (from TwitterAPI)
  Using cached requests_oauthlib-0.7.0-py2.py3-none-any.whl
Collecting oauthlib>=0.6.2 (from requests_oauthlib->TwitterAPI)
  Using cached oauthlib-2.0.0.tar.gz
Installing collected packages: oauthlib, requests-oauthlib, TwitterAPI
  Running setup.py install for oauthlib ... done
  Running setup.py install for TwitterAPI ... done
Successfully installed TwitterAPI-2.4.2 oauthlib-2.0.0 requests-oauthlib-0.7.0
```

Download Twitter
API using pip

6. Twitter API Creating New Application

- Create an account on <http://twitter.com>
- Generate authentication tokens by following the instructions in <https://dev.twitter.com/docs/auth/tokens-devtwittercom>
- Add your tokens to the key/token to a file called credentials.txt
- Save credentials.txt file inside your application folder where you save python script



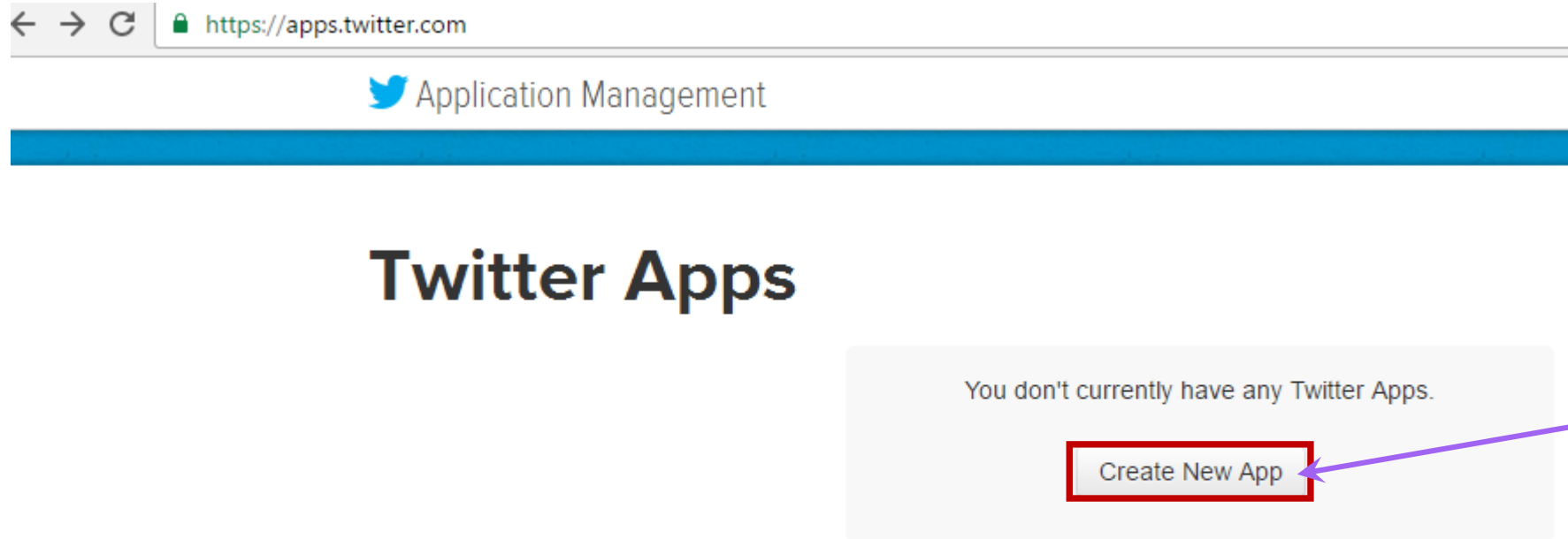
```
credentials - Notepad
File Edit Format View Help
consumer_key=AddYours
consumer_secret=AddYours
access_token_key=AddYours
access_token_secret=AddYours
```

Add your
authentication token
here

6. Twitter API Creating New Application

Create an account on <http://twitter.com>

Go to <https://apps.twitter.com/> and click button create new app



Create new App by
clicking here

6. Twitter API Creating New Application

- Give the application name and description and click Create your twitter application

Description *

Your application description, which will be shown in user-facing authorization screens. Between 10 and 200 characters max.

Website *

Your application's publicly accessible home page, where users can go to download, make use of, or find out more information about your application. This fully-qualified URL is used in the source attribution for tweets created by your application and will be shown in user-facing authorization screens.
(If you don't have a URL yet, just put a placeholder here but remember to change it later.)

Callback URL

Where should we return after successfully authenticating? [OAuth 1.0a](#) applications should explicitly specify their `oauth_callback` URL on the request token step, regardless of the value given here. To restrict your application from using callbacks, leave this field blank.

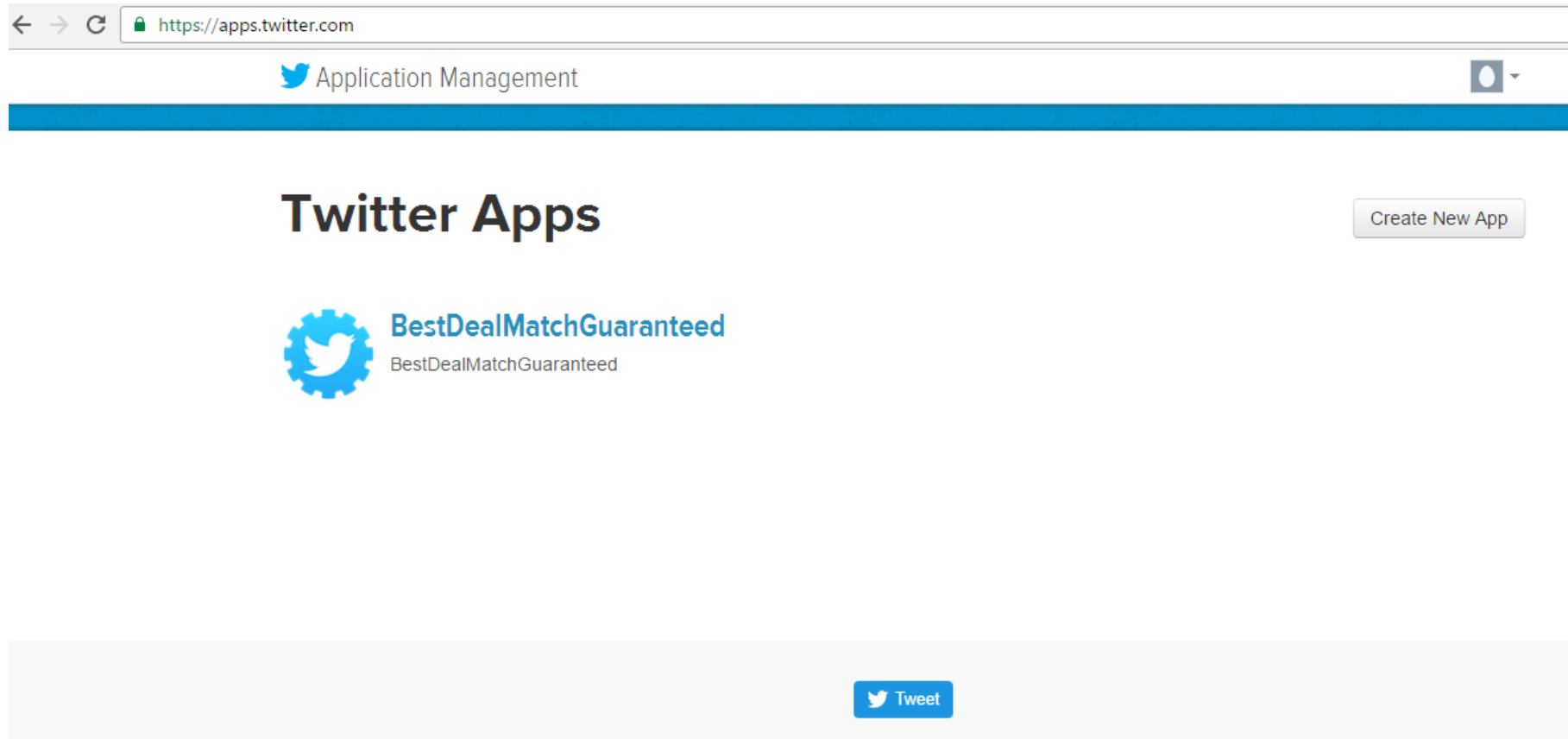
Developer Agreement

☒ Yes, I have read and agree to the [Twitter Developer Agreement](#).

Create your Twitter application

6. Twitter API Creating New Application

- Your Application will be created now you can generate access tokens



7. Generating Access tokens for twitter application


- Click on the application you created
- Click on keys and access tokens tab to create your access tokens

<https://apps.twitter.com/app/13053109/show>

Application Management

BestDealMatchGuaranteed [Test OAuth](#)

[Details](#) [Settings](#) [Keys and Access Tokens](#) [Permissions](#)

 BestDealMatchGuaranteed
<https://apps.twitter.com/app>

Organization

Information about the organization or company associated with your application. This information is optional.

Organization	None
Organization website	None

Application Settings

Your application's Consumer Key and Secret are used to [authenticate](#) requests to the Twitter Platform.

Access level	Read and write (modify app permissions)
--------------	---

7 .Generating Access tokens for twitter Application:

At the bottom of the next page, you will see a section labeled “**your access token**”:

Your access token

It looks like you haven't authorized this application for your own Twitter account yet. For your convenience, we give you the opportunity to create your OAuth access token here, so you can start signing your requests right away. The access token generated will reflect your application's current permission level.

Click on the “**Create my access token**” button, and an authorized access token and secret will be generated for your account and the current application. These values may be used to [authorize requests to the Twitter API](#).

Your access token

Use the access token string as your “oauth_token” and the access token secret as your “oauth_token_secret” to sign requests with your own Twitter account. Do not share your oauth_token_secret with anyone.

Access token

ddddd-xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Access token secret

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

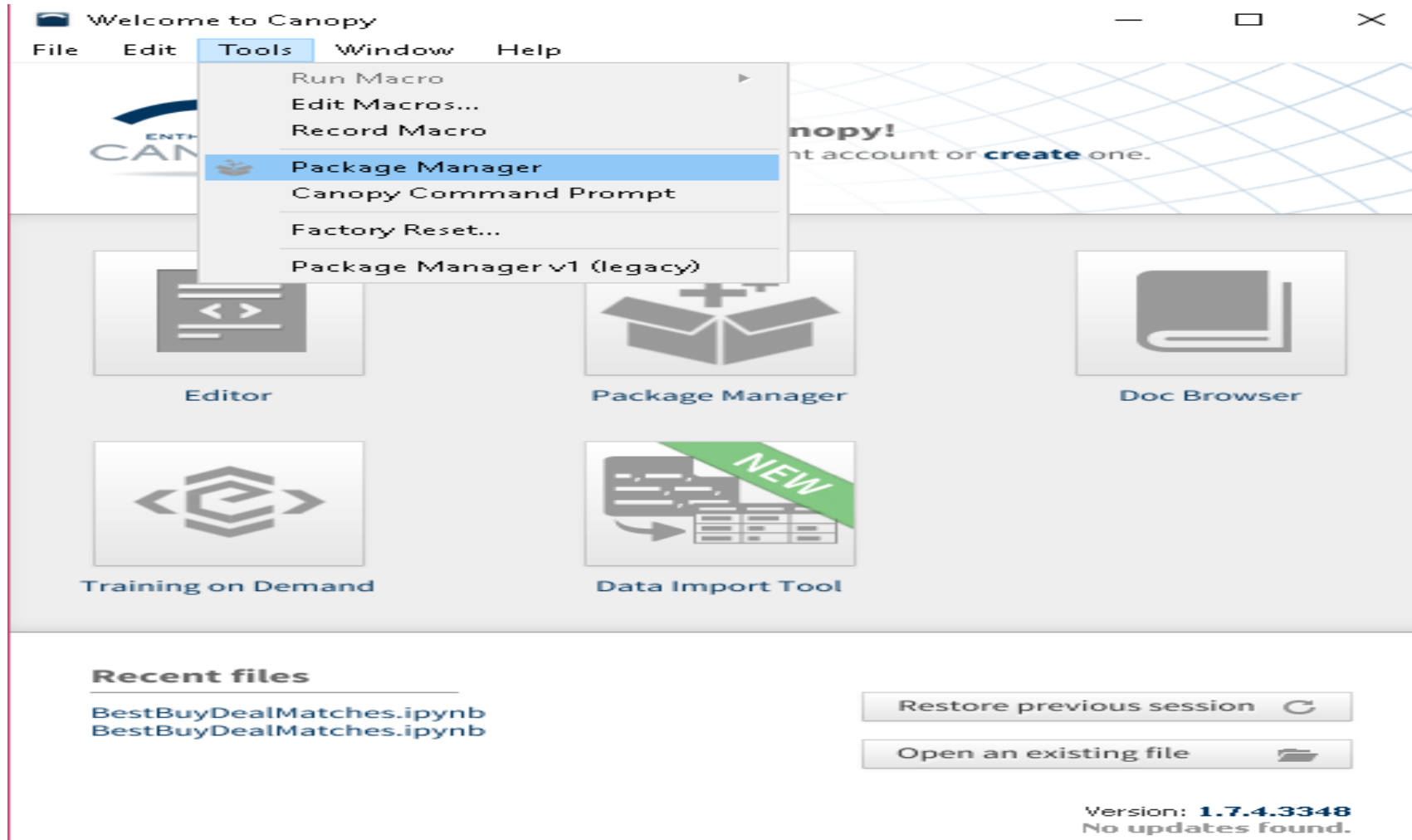
Access level

Read-only

[Recreate my access token](#)

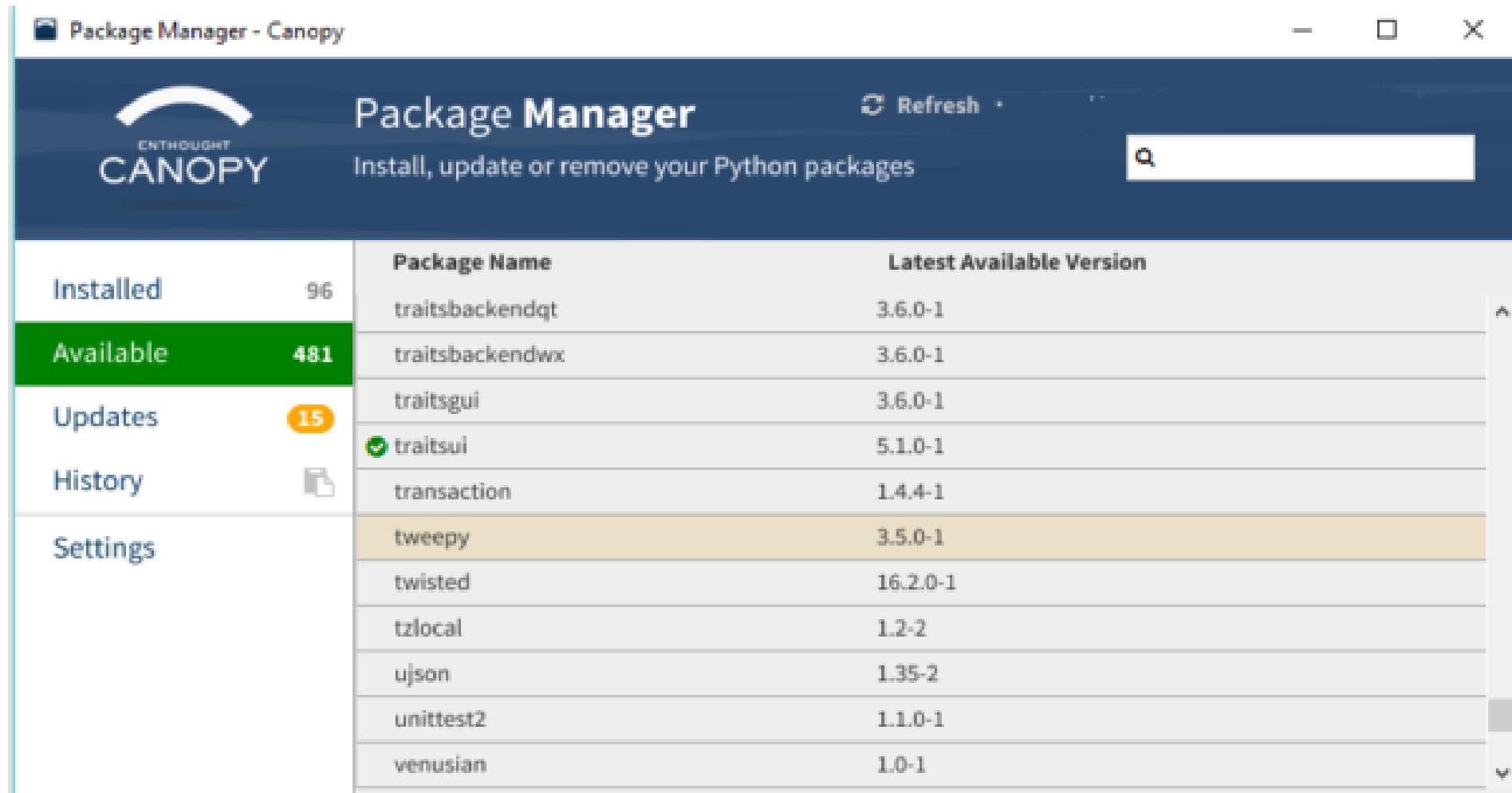
8 Download MySQL Connector from Enthought Canopy

- Click on Tools->Package Manager



8 Download MySQL Connector from Enthought Canopy

- Package Manager shows the List of Available Python packages which are Available.

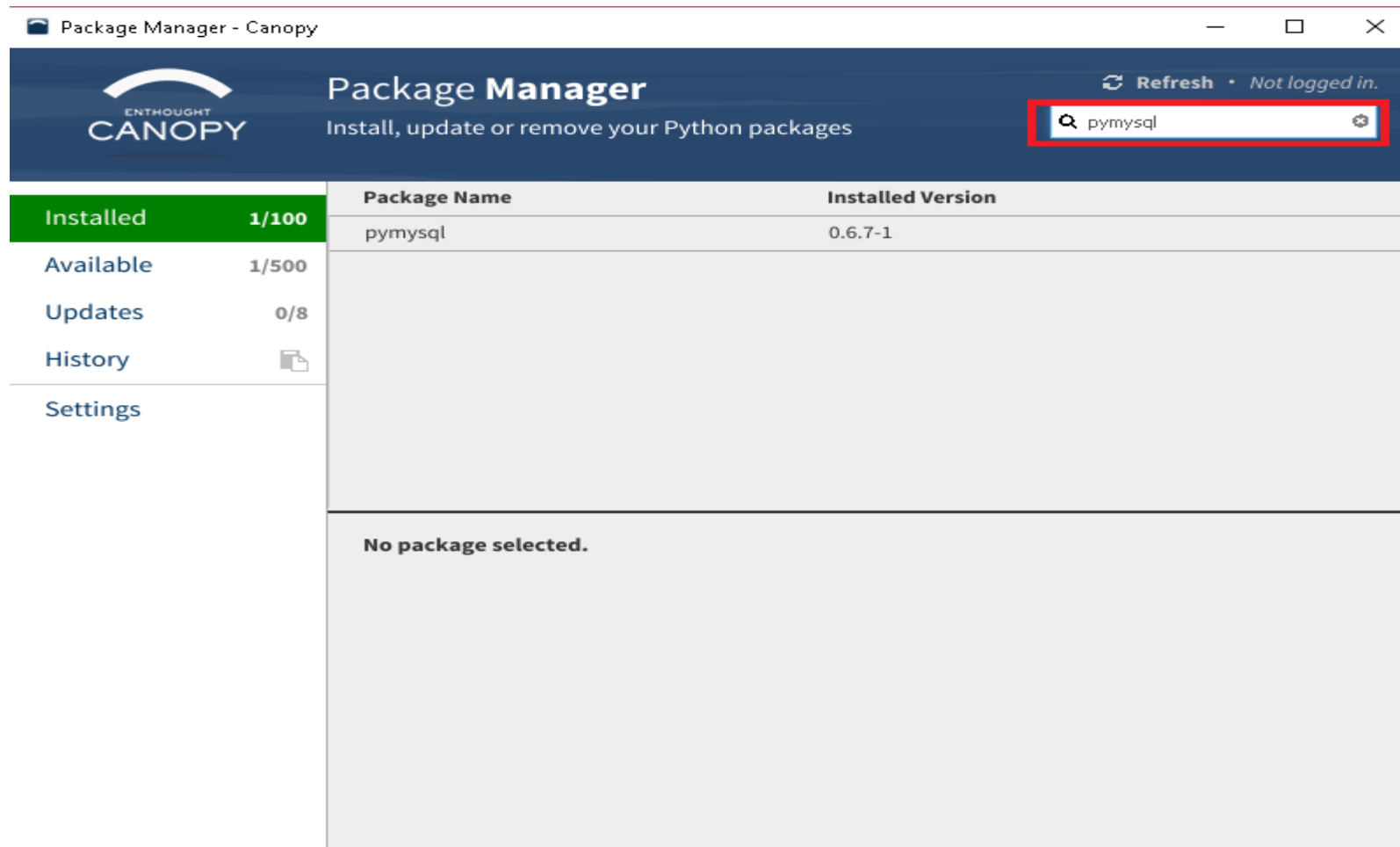


The screenshot shows the 'Package Manager - Canopy' window. The interface has a dark blue header with the Enthought Canopy logo, the title 'Package Manager', a subtitle 'Install, update or remove your Python packages', a 'Refresh' button, and a search bar. On the left, there is a sidebar with navigation links: 'Installed' (96), 'Available' (481, highlighted in green), 'Updates' (15), 'History', and 'Settings'. The main area displays a table of available packages.

Package Name	Latest Available Version
traitsbackendqt	3.6.0-1
traitsbackendwx	3.6.0-1
traitsgui	3.6.0-1
✔ traitsui	5.1.0-1
transaction	1.4.4-1
tweepy	3.5.0-1
twisted	16.2.0-1
tzlocal	1.2-2
ujson	1.35-2
unittest2	1.1.0-1
venusian	1.0-1

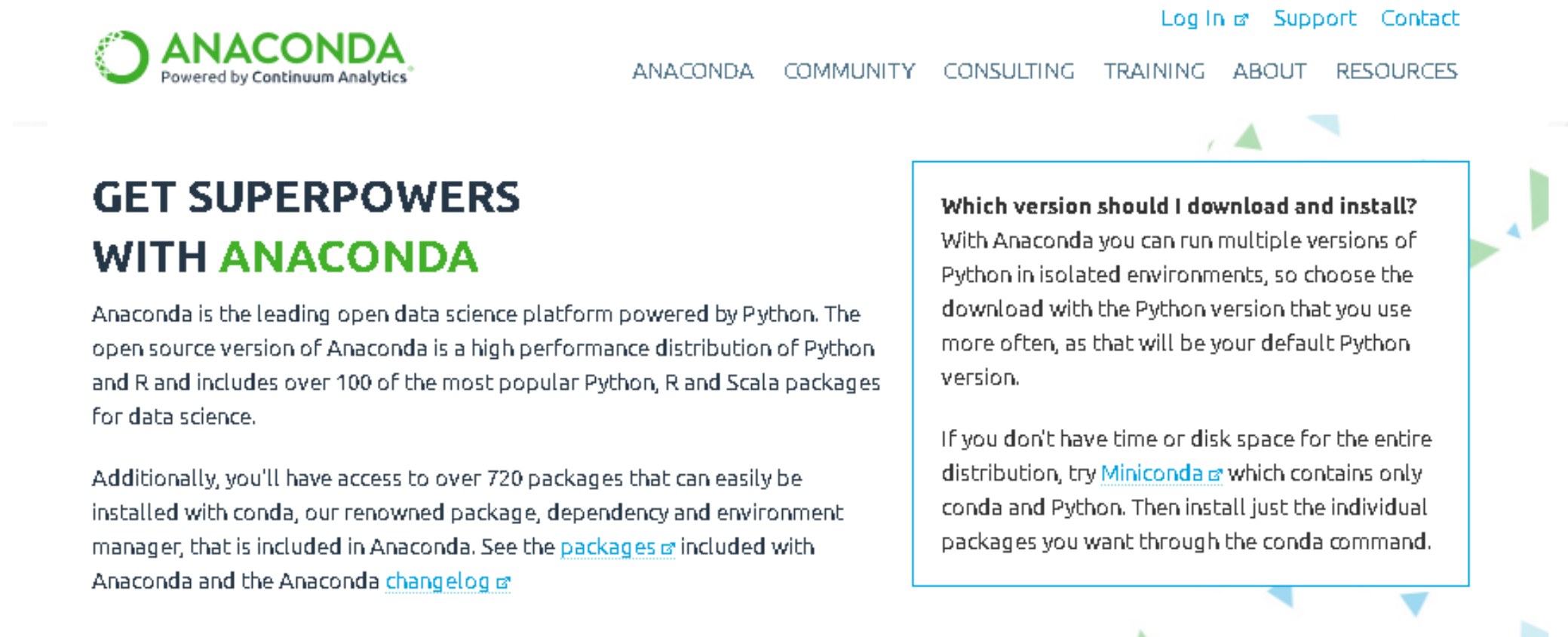
8 Download MySQL Connector from Enthought Canopy

- Search for pymysql in package search box
- Once pymysql is seen in the Package Manager List.
- Select the pymysql package and Click Install.



9. Anaconda:

- Anaconda is the leading open data science platform powered by Python.
- Anaconda Supports Python 3.5.
- Anaconda Installs Jupyter Notebook.



The image is a screenshot of the Anaconda website homepage. At the top right, there are links for 'Log In', 'Support', and 'Contact'. Below these, a navigation bar contains links for 'ANACONDA', 'COMMUNITY', 'CONSULTING', 'TRAINING', 'ABOUT', and 'RESOURCES'. The main heading reads 'GET SUPERPOWERS WITH ANACONDA'. Below this, a paragraph describes Anaconda as the leading open data science platform powered by Python, mentioning its open source nature, high performance, and support for Python, R, and Scala. Another paragraph mentions access to over 720 packages and the inclusion of conda, the package manager. A callout box on the right side of the page provides guidance on which version to download and install, suggesting Miniconda for users with limited time or disk space. The website features a clean, modern design with a green and blue color scheme and decorative geometric shapes.

ANACONDA
Powered by Continuum Analytics

[Log In](#) [Support](#) [Contact](#)

[ANACONDA](#) [COMMUNITY](#) [CONSULTING](#) [TRAINING](#) [ABOUT](#) [RESOURCES](#)

GET SUPERPOWERS WITH ANACONDA

Anaconda is the leading open data science platform powered by Python. The open source version of Anaconda is a high performance distribution of Python and R and includes over 100 of the most popular Python, R and Scala packages for data science.

Additionally, you'll have access to over 720 packages that can easily be installed with conda, our renowned package, dependency and environment manager, that is included in Anaconda. See the [packages](#) included with Anaconda and the Anaconda [changelog](#).

Which version should I download and install?
With Anaconda you can run multiple versions of Python in isolated environments, so choose the download with the Python version that you use more often, as that will be your default Python version.

If you don't have time or disk space for the entire distribution, try [Miniconda](#) which contains only conda and Python. Then install just the individual packages you want through the conda command.

9. Anaconda – Download:

- Go to <https://www.continuum.io/downloads> and click on the ‘64-BIT Installer’ button to download Anaconda which Supports Python 3.5 Version.

Download for Windows | Download for OSX | Download for Linux

Anaconda 4.2.0

For Windows

Anaconda is BSD licensed which gives you permission to use Anaconda commercially and for redistribution.

[Changelog](#)

1. Download the installer
2. Optional: Verify data integrity with [MD5 or SHA-256](#)
3. Double-click the .exe file to install Anaconda and follow the instructions on the screen

Behind a firewall? Use these [zipped Windows installers](#)

Python 3.5 version

64-BIT INSTALLER (391M)

32-BIT INSTALLER (333M)

Python 2.7 version

64-BIT INSTALLER (381M)

32-BIT INSTALLER (324M)

Click the “64-BIT Installer” Button

For older versions of Anaconda installers, see the [Anaconda installer archive](#)

For long-term support of the packages found in the Anaconda archives, please [contact us](#).

9. Download MySQL Connector from Anaconda :

- **Open Anaconda Prompt.**
- **pip** is a package management system used to install and manage software packages written in **Python**.
- Install MySQL **Connector** using the command **pip install mysql-connector** in your **Anaconda** prompt

Anaconda Prompt

```
C:\Users\Anaconda3) C:\Users>pip install mysql-connector
```

```
Collecting mysql-connector
```

```
  Downloading mysql-connector-2.1.4.zip (355kB)
```

```
    100% |#####| 358kB 666kB/s
```

```
Building wheels for collected packages: mysql-connector
```

```
  Running setup.py bdist_wheel for mysql-connector ... done
```

```
  Stored in directory: C:\Users\AppData\Local\pip\Cache\wheels\bc\4c\f0\522b6d8ef8c6256057bbdb60d7ce37af99dc09d4d1414bf62d
```

```
Successfully built mysql-connector
```

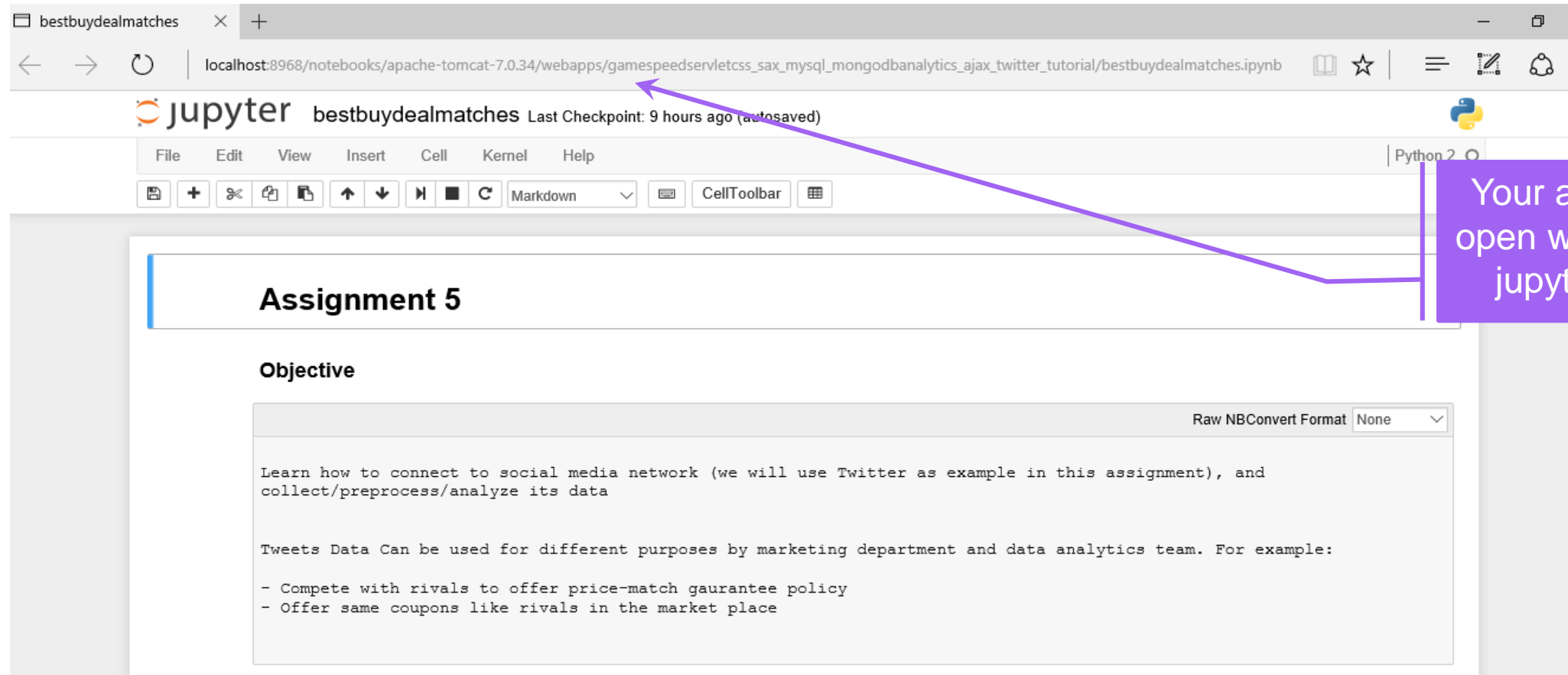
```
Installing collected packages: mysql-connector
```

```
Successfully installed mysql-connector-2.1.4
```

Download MySQL
Connector using pip

10.Jupyter Notebook:


- Jupyter notebook is a platform a server-client application that allows editing and running python notebook documents via a web browser



Your application will open with localhost in jupyter notebook

10. Opening Python file in canopy

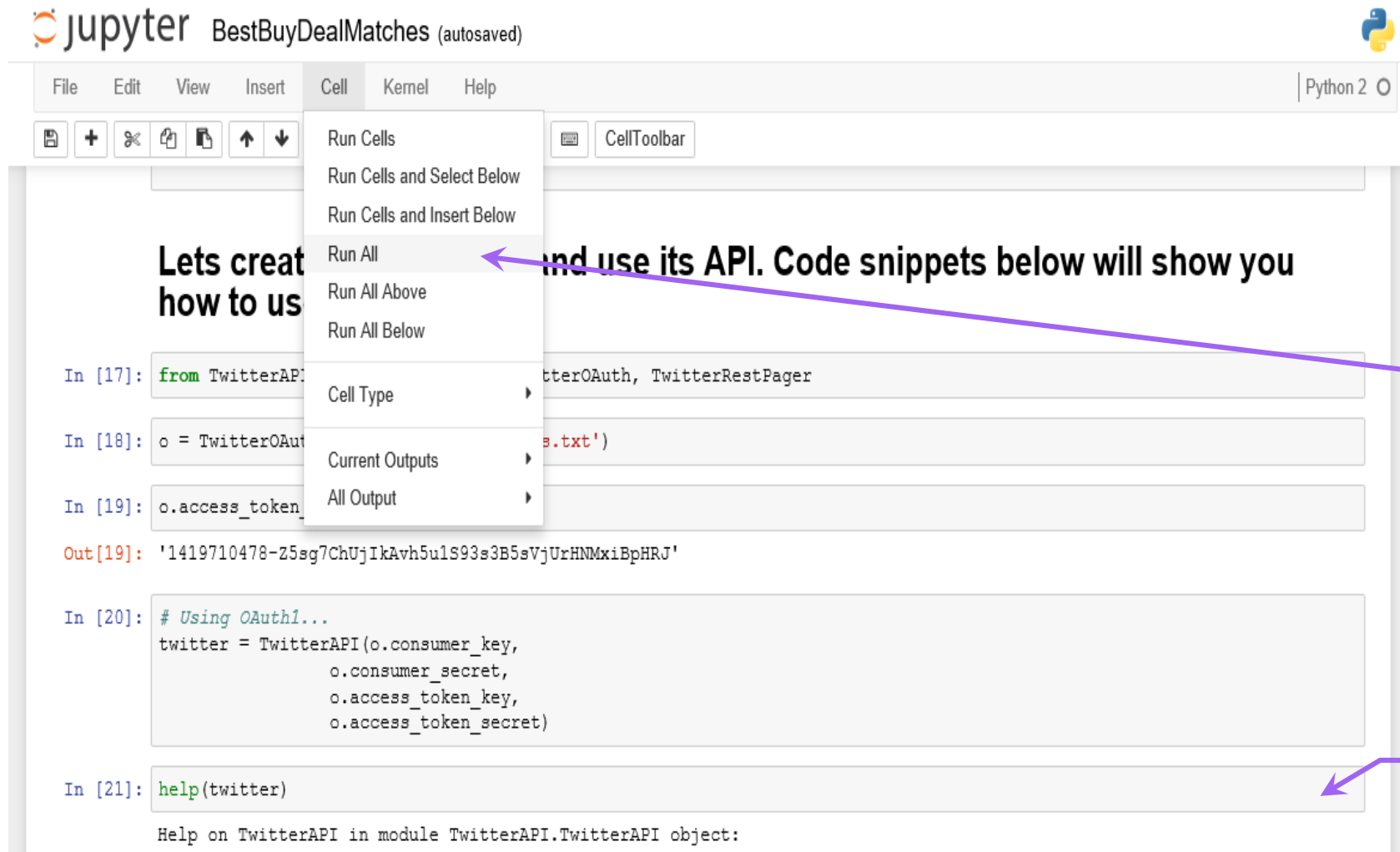
- Go to your python File location and double click the file it will open the .ipynb(Ipython Notebook) File in Jupyter Notebook.

Name	Date modified	Type	Size
.ipynb_checkpoints	11/3/2016 3:22 PM	File folder	
images	11/3/2016 3:22 PM	File folder	
WEB-INF	11/3/2016 3:22 PM	File folder	
 BestBuyDealMatches	11/3/2016 3:20 PM	IPython Notebook	91 KB
credentials	11/3/2016 12:48 PM	Text Document	1 KB
DealMatches	11/3/2016 3:19 PM	Text Document	1 KB
Footer	9/22/2016 9:48 AM	HTML File	1 KB
Header	10/27/2016 6:48 PM	HTML File	3 KB
javascript	10/27/2016 6:54 PM	JavaScript File	3 KB
LeftNavigationBar	9/22/2016 9:48 AM	HTML File	2 KB
ProductCatalog	11/1/2016 6:34 PM	XML Document	7 KB
style	9/22/2016 9:48 AM	Cascading Style S...	10 KB

Python file should have canopy symbol as default application to open with

11. Running Python Application

Select the cell for the python script you want to run and execute it



The screenshot shows the Jupyter Notebook interface with the title "BestBuyDealMatches (autosaved)". The "Cell" menu is open, displaying options: "Run Cells", "Run Cells and Select Below", "Run Cells and Insert Below", "Run All", "Run All Above", "Run All Below", "Cell Type", "Current Outputs", and "All Output". A purple arrow points from the "Run All" option to the text "and use its API. Code snippets below will show you". Below the menu, there are several code cells. The first cell (In [17]) contains the code: `from TwitterAPI import TwitterAPI, TwitterOAuth, TwitterRestPager`. The second cell (In [18]) contains the code: `o = TwitterOAuth(consumer_key=consumer_key, consumer_secret=consumer_secret, access_token_key=access_token_key, access_token_secret=access_token_secret)`. The third cell (In [19]) contains the code: `o.access_token_key = access_token_key`. The output of the third cell (Out[19]) is: `'1419710478-z5sg7ChUjIkAvh5u1S93s3B5sVjUrHNMxiBpHRJ'`. The fourth cell (In [20]) contains the code: `# Using OAuth1...
twitter = TwitterAPI(o.consumer_key,
 o.consumer_secret,
 o.access_token_key,
 o.access_token_secret)`. The fifth cell (In [21]) contains the code: `help(twitter)`. The output of the fifth cell is: `Help on TwitterAPI in module TwitterAPI.TwitterAPI object:`.

You can select run all cells or run cells based on code you want to run

Each cell is represented by a box

11. Running Python Application

Connect to Twitter using the Twitter API access tokens and keys you generated

Lets create twitter object and use its API. Code snippets below will show you how to use this API


```
In [117]: from TwitterAPI import TwitterAPI, TwitterOAuth, TwitterRestPager
```

```
In [118]: o = TwitterOAuth.read_file('credentials.txt')
```

```
In [*]: # Using OAuth1...|
twitter = TwitterAPI(o.consumer_key,
                    o.consumer_secret,
                    o.access_token_key,
                    o.access_token_secret)
```

```
In [121]: help(twitter)
```

Connecting to twitter
using access tokens
and key



11. Running Python Application

Getting the tweets from best buy twitter account

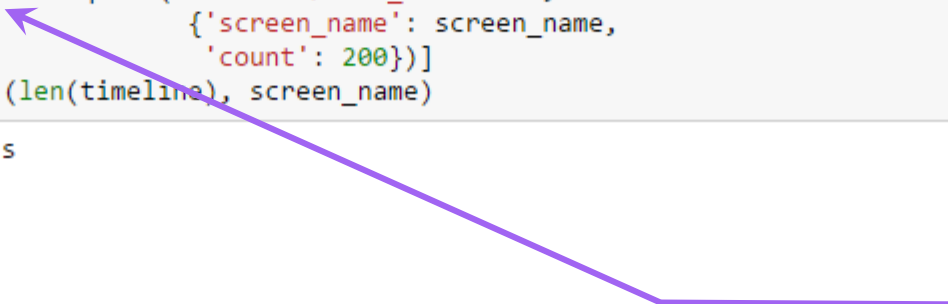
Limitations: Can only search 2 weeks in past But can get up to 3,200 most recent tweets of a user Rate limits! <https://dev.twitter.com/docs/rate-limiting/1.1/limits> e.g., 180 requests in 15 minute window

Get BestBuy timeline for the deals screen-name

This is the screen name for BestBuy_Deals

```
In [143]: # Get BestBuyDeals timeline = ''
screen_name = 'BestBuy_Deals'
timeline = [tweet for tweet in twitter.request('statuses/user_timeline',
                                              {'screen_name': screen_name,
                                               'count': 200})]
print 'got %d tweets for user %s' % (len(timeline), screen_name)

got 200 tweets for user BestBuy_Deals
```



Get all tweets for
Screen_Name
BestBuy_Deals

Find the deals in the BestBuy_Deal tweets that match products in BestDeal MySQL product table

```
In [66]: import re
import pymysql

cnx = pymysql.connect(user='root', password='root',
                      host='127.0.0.1',
                      database='exampledatabase')

cursor = cnx.cursor()

query = ("SELECT productid FROM Product")
cursor.execute(query)

dealMatchGauranteed=[]
for product in cursor:
    for tweet in timeline:
        deal = (tweet['text']).encode('ascii','ignore')
        if (len(re.findall(r'\s'+product[0]+'\\s',deal)) >= 1):
            dealMatchGauranteed = dealMatchGauranteed + [deal]
```

Match the Product in best buy tweets with the products we have in my sql database

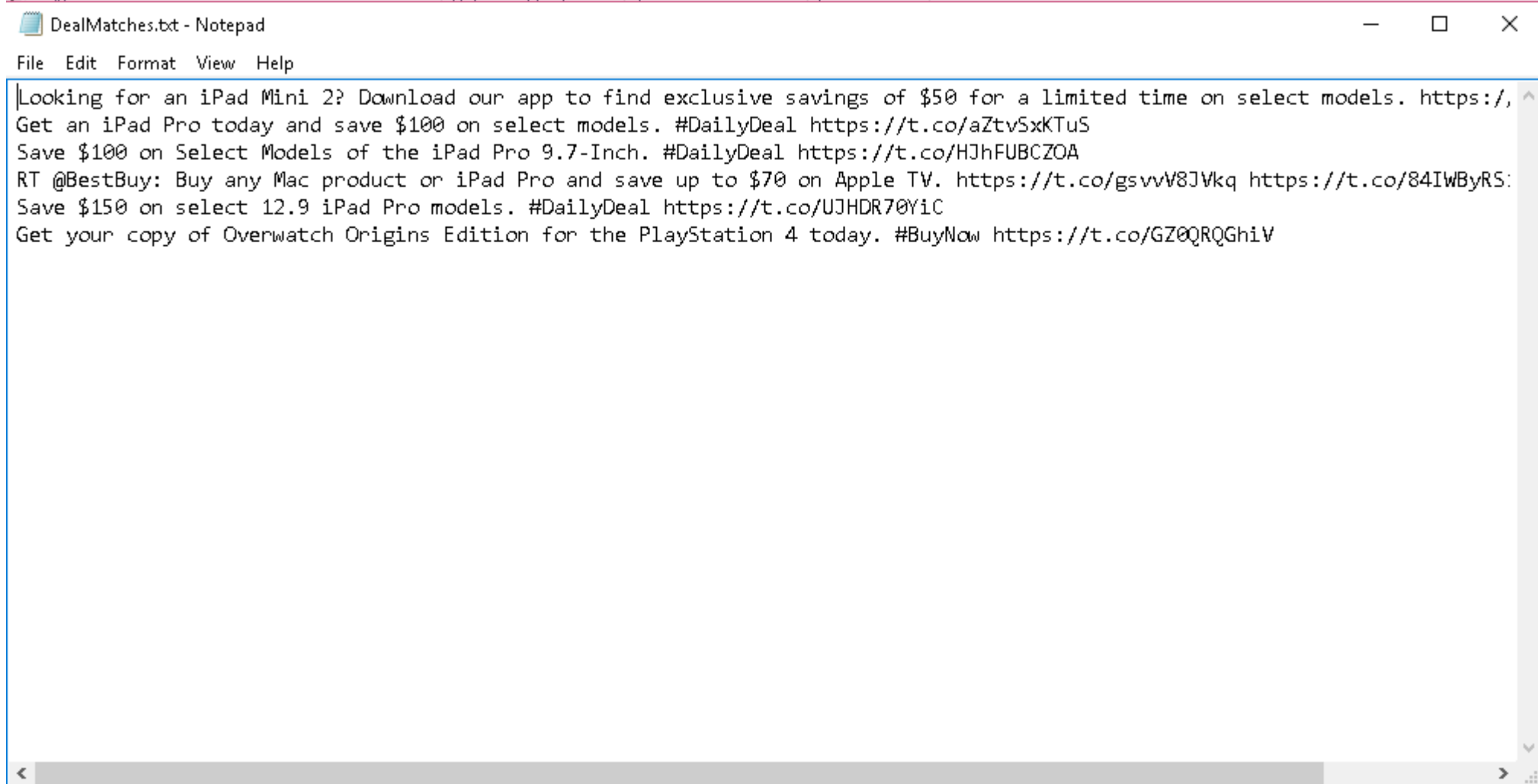
Following products tweets we got in best buy account that match with our records

```
In [37]: # Sanity Test that we got some deals
dealMatchGauranteed
```

```
Out[37]: ['Looking for an iPad Mini 2? Download our app to find exclusive savings of $50 for a limited time on select models. https://t.co/1Ae2078TAV',
'Get an iPad Pro today and save $100 on select models. #DailyDeal https://t.co/aZtvSXKTuS',
'Save $100 on Select Models of the iPad Pro 9.7-Inch. #DailyDeal https://t.co/HJhFUBCZOA',
'RT @BestBuy: Buy any Mac product or iPad Pro and save up to $70 on Apple TV. https://t.co/gsvvW8Jvkq https://t.co/84IWByRS1e',
'Save $150 on select 12.9 iPad Pro models. #DailyDeal https://t.co/UJH0R70Yic',
'Get your copy of Overwatch Origins Edition for the PlayStation 4 today. #BuyNow https://t.co/GZ0QRQGHiv']
```

11. Running Python Application

Save the tweets from python script to a file called DealMatches.txt



```
DealMatches.txt - Notepad
File Edit Format View Help
Looking for an iPad Mini 2? Download our app to find exclusive savings of $50 for a limited time on select models. https://, ^
Get an iPad Pro today and save $100 on select models. #DailyDeal https://t.co/aZtvSxKTuS
Save $100 on Select Models of the iPad Pro 9.7-Inch. #DailyDeal https://t.co/HJhFUBCZOA
RT @BestBuy: Buy any Mac product or iPad Pro and save up to $70 on Apple TV. https://t.co/gsvvV8JVkq https://t.co/84IWByRS:
Save $150 on select 12.9 iPad Pro models. #DailyDeal https://t.co/UJHDR70YiC
Get your copy of Overwatch Origins Edition for the PlayStation 4 today. #BuyNow https://t.co/GZ0QRQGhiV
```


12. Example : Display Tweets and Products

Get the tweets from DealMatches.txt and display in web page

Apple

Microsoft

Samsung

Accessories

Microsoft Accessories

Sony Accessories

Nintendo Accessories


We beat our competitors in all aspects.
Price-Match Guaranteed

Get your copy of Overwatch Origins Edition for the PlayStation 4 today. #BuyNow
<https://t.co/GZoQRQGhiV>

Get an iPad Pro today and save \$100 on select models. #DailyDeal
<https://t.co/aZtvSxKTuS>

Deal Matches

PlayStation 4
349.0\$




Buy Now

WriteReview

ViewReview

iPad Pro
189.0\$



Buy Now

WriteReview

ViewReview

Display the tweets for products that matches with best buy Products

Display the respective products that are available in best buy tweets

13. Example : Display Tweets and Products

If no tweets are found that match products from database display no offers found

Games


- Electronic Arts
- Activision
- Take-Two Interactive

Tablets

- Apple
- Microsoft
- Samsung

Accessories

- Microsoft Accessories
- Sony Accessories
- Nintendo Accessories



The world trusts us to deliver SPEEDY service for video-gaming fans

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No Offers Found

Deal Matches

No Deals Found

If no data for any product found in best buy twitter account display no offers found

14.What is PrintWriter in Servlet ?

- PrintWriter prints text data to character Stream.
- To send character data we use the PrintWriter object returned by `getWriter()`.
- Example:

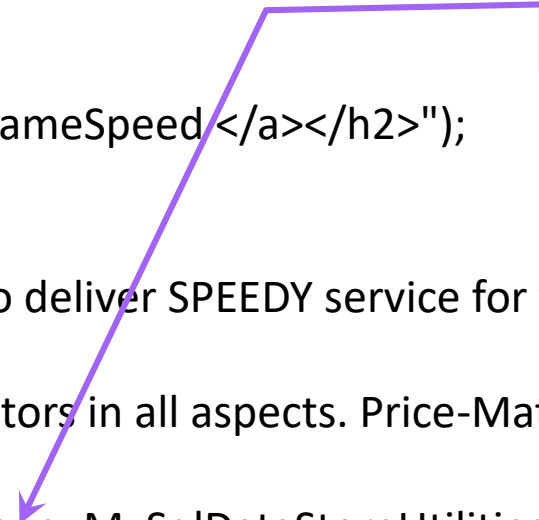
```
PrintWriter pw = response.getWriter();
```

- pw is an PrintWriter object.
- `response.getWriter();`
returns the object of PrintWriter Class in which `print(String args)` method is declared to print any thing on the browser's page as a response.

15. Sample Code Snippet for to Display Deals:

DealMatchesUtilities Servlet

```
public class DealMatchesUtilities extends HttpServlet {  
    public void doGet(...)  
    {  
        response.setContentType("text/html");  
        PrintWriter pw = response.getWriter();  
        HashMap<String,Product> selectedproducts=new HashMap<String,Product>();  
        try  
        {  
            pw.print("<div id='content'>");  
            pw.print("<div class='post'>");  
            pw.print("<h2 class='title'>");  
            pw.print("<a href='#'>Welcome to GameSpeed </a></h2>");  
            pw.print("<div class='entry'>");  
            pw.print("<br> <br>");  
            pw.print("<h2>The world trusts us to deliver SPEEDY service for video-gaming fans</h2>");  
            pw.print("<br> <br>");  
            pw.print("<h1>We beat our competitors in all aspects. Price-Match Guaranteed</h2>");  
            String line=null;  
            HashMap<String,Product> productmap=MySQLDataStoreUtilities.getData();  
        }  
    }  
}
```



Get all the products into
hashmap from Database

```

for(Map.Entry<String, Product> entry : productmap.entrySet())
{
    if(selectedproducts.size()<2 && !selectedproducts.containsKey(entry.getKey()))
    {
        BufferedReader reader = new BufferedReader(new FileReader (new
File(TOMCAT_HOME+"\\webapps\\GameSpeedServletCSS_SAX_MySql_MongoDBAnalytics_AJAX_Twitter_Tutorial\\DealM
atches.txt")));

        line=reader.readLine();
        if(line==null)
        { pw.print("<h2 align='center'>No Offers Found</h2>");break;}
        else
        {
            do {
                if(line.contains(entry.getKey()))
                {
                    pw.print("<h2>" + line + "</h2>");
                    pw.print("<br>");
                    selectedproducts.put(entry.getKey(),entry.getValue());
                    break;
                }
            }while((line = reader.readLine()) != null);
        }
    }
}

```

If no products found that matches with best buy display no offers found

Display the tweets for products that matches with best buy