03 | Databases, Scrapping, and APIs

Ivan Corneillet

Data Scientist

Learning Objectives

After this lesson, you should be able to:

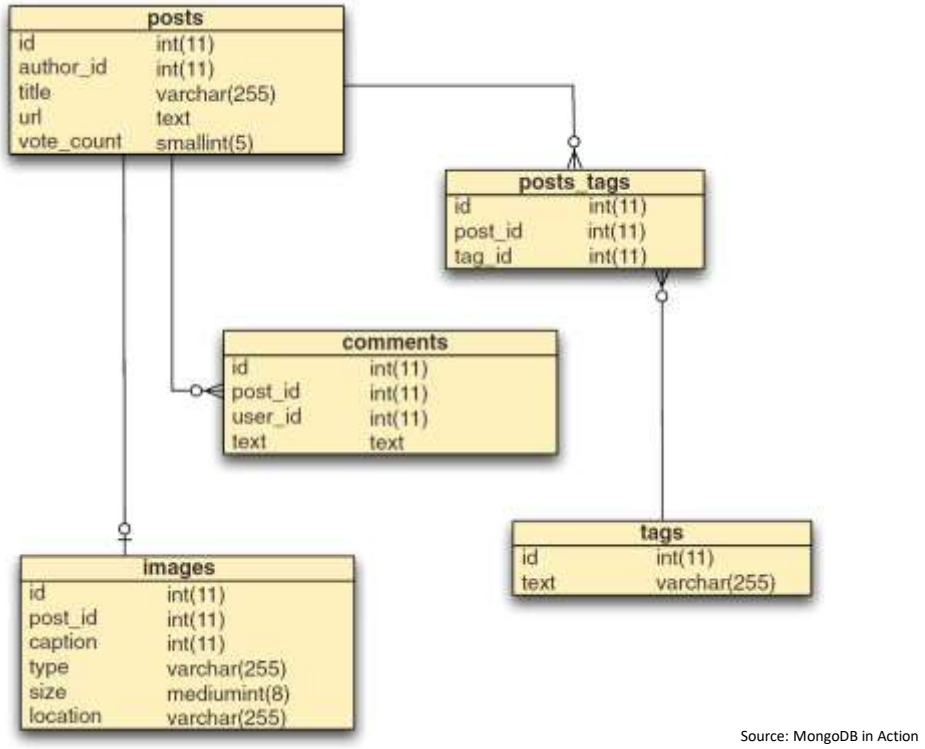
- Access SQL databases from *pandas*
- Describe how web scraping works, conceptually and explain practically how to web scraping works using Python
- Define how to approach scraping project data
- Describe APIs and how to make calls and consume API data

Here's what's happening today:

- RDBMS/SQL Databases
  - The `SELECT` statement
- Scrapping
- Application Programming Interfaces (APIs)

Relational Database Management Systems (RDBMS) and Structured Query Language (SQL)

A relational database links data entities and concepts. E.g., a relational data model for entries on a social news site



Source: MongoDB in Action

Relational databases are organized into *tables.* Each table has a specific *schema*, a set of rules for what goes in each table

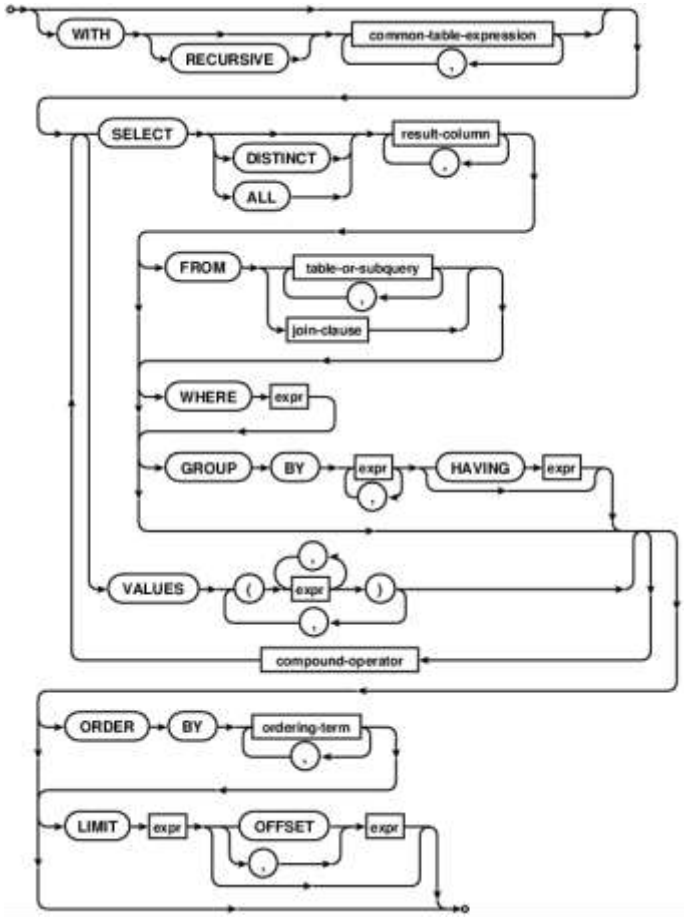
- Each table corresponding to one entity or concept
- A table is made up of rows and columns, similar to a *pandas* dataframe
- Schemas specify which columns are contained in the table and what type of data is in each column (e.g., text, integer, or date). This means you can't add text data to an integer column
- For this reason and many others, databases allow for stronger consistency of the data and are often a better solution for data storage

CRUD and SQL

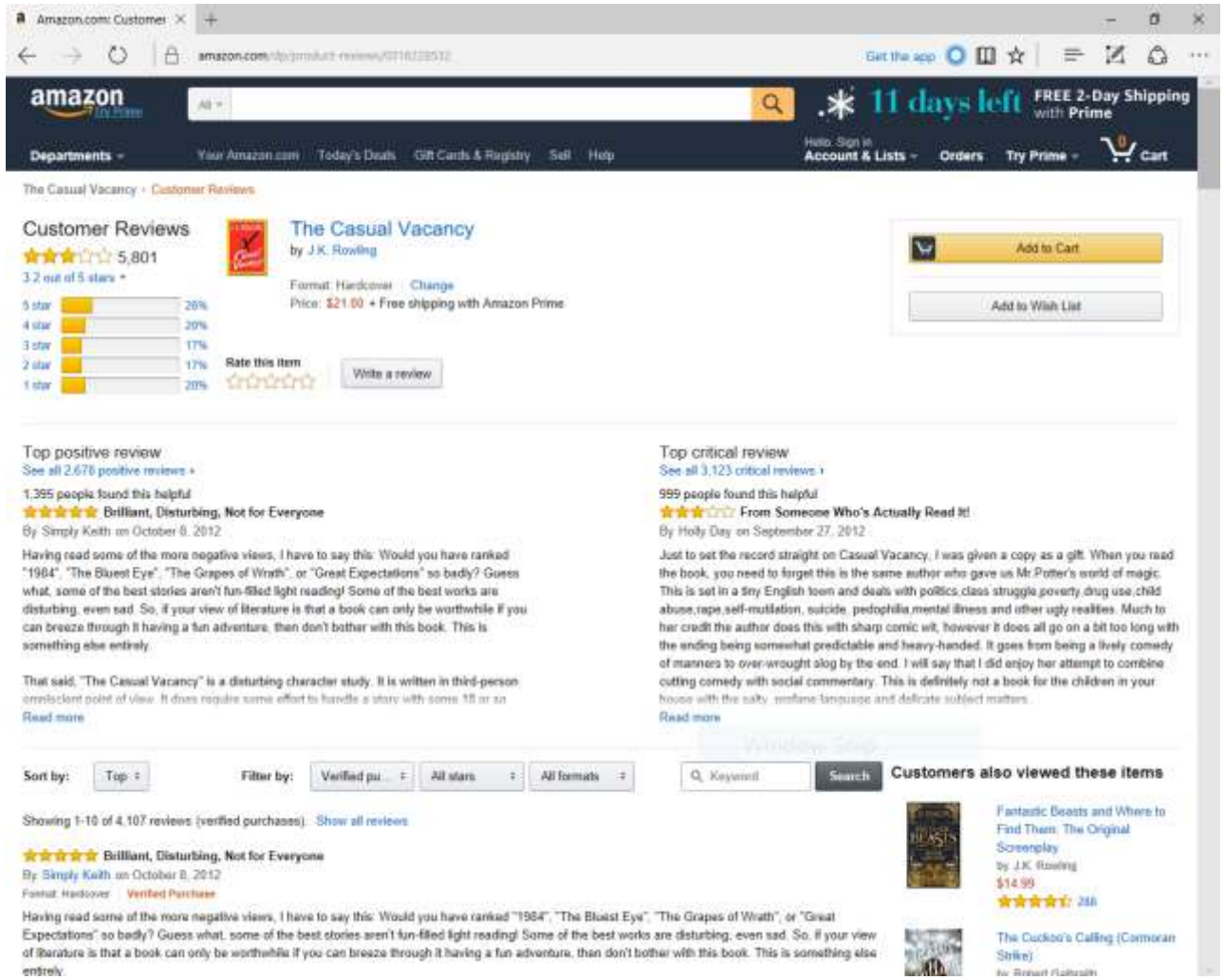
CRUD(*) **(*) the four basic functions of persistent storage**	**SQL Statement**	
Create	CREATE	Create or add new entries
Read	**SELECT**	Read, retrieve, search, or view existing entries
Update	UPDATE	Update or edit existing entries
Delete	DELETE	Delete/deactivate/remove existing entries

SQLite's **SELECT** Statement

(https://www.sqlite.org/lang_select.html)



Scraping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By Simply Keith on October 8, 2012
Having read some of the more negative views, I have to say this: Would you have ranked "1984", "The Bluest Eye", "The Grapes of Wrath", or "Great Expectations" so badly? Guess what, some of the best stories aren't fun-filled light reading! Some of the best works are disturbing, even sad. So, if your view of literature is that a book can only be worthwhile if you can breeze through it having a fun adventure, then don't bother with this book. This is something else entirely.
That said, "The Casual Vacancy" is a disturbing character study. It is written in third-person
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999 people found this helpful
From Someone Who's Actually Read It!
By Holly Day on September 27, 2012
Just to set the record straight on Casual Vacancy, I was given a copy as a gift. When you read the book, you need to forget this is the same author who gave us Mr.Potter's world of magic. This is set in a tiny English town and deals with politics,class struggle,poverty,drug use,child abuse,rape,self-mutilation, suicide, pedophilia,mental illness and other ugly realities. Much to her credit the author does this with sharp comic wit, however it does all go on a bit too long with the ending being somewhat predictable and heavy-handed. It goes from being a lively comedy of manners to over-wrought slog by the end. I will say that I did enjoy her attempt to combine cutting comedy with social commentary. This is definitely not a book for the children in your
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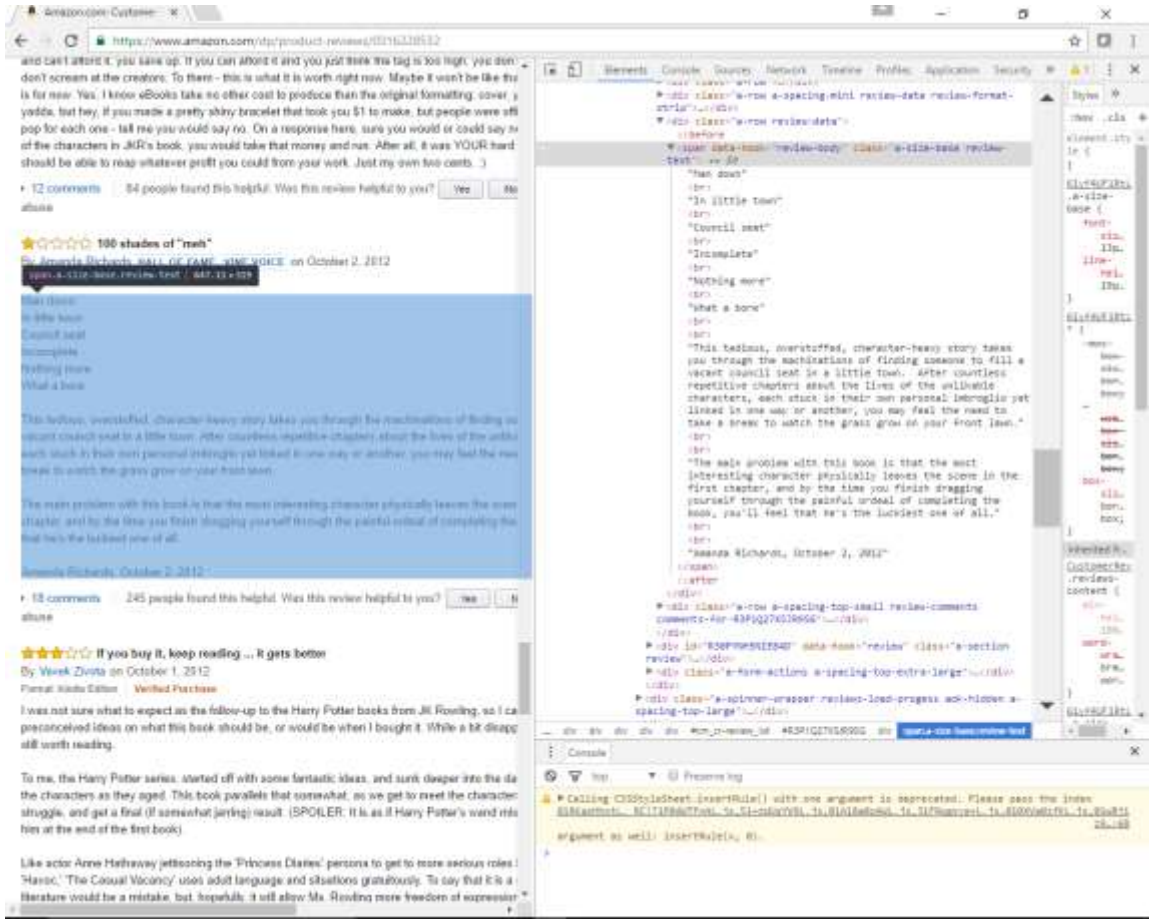
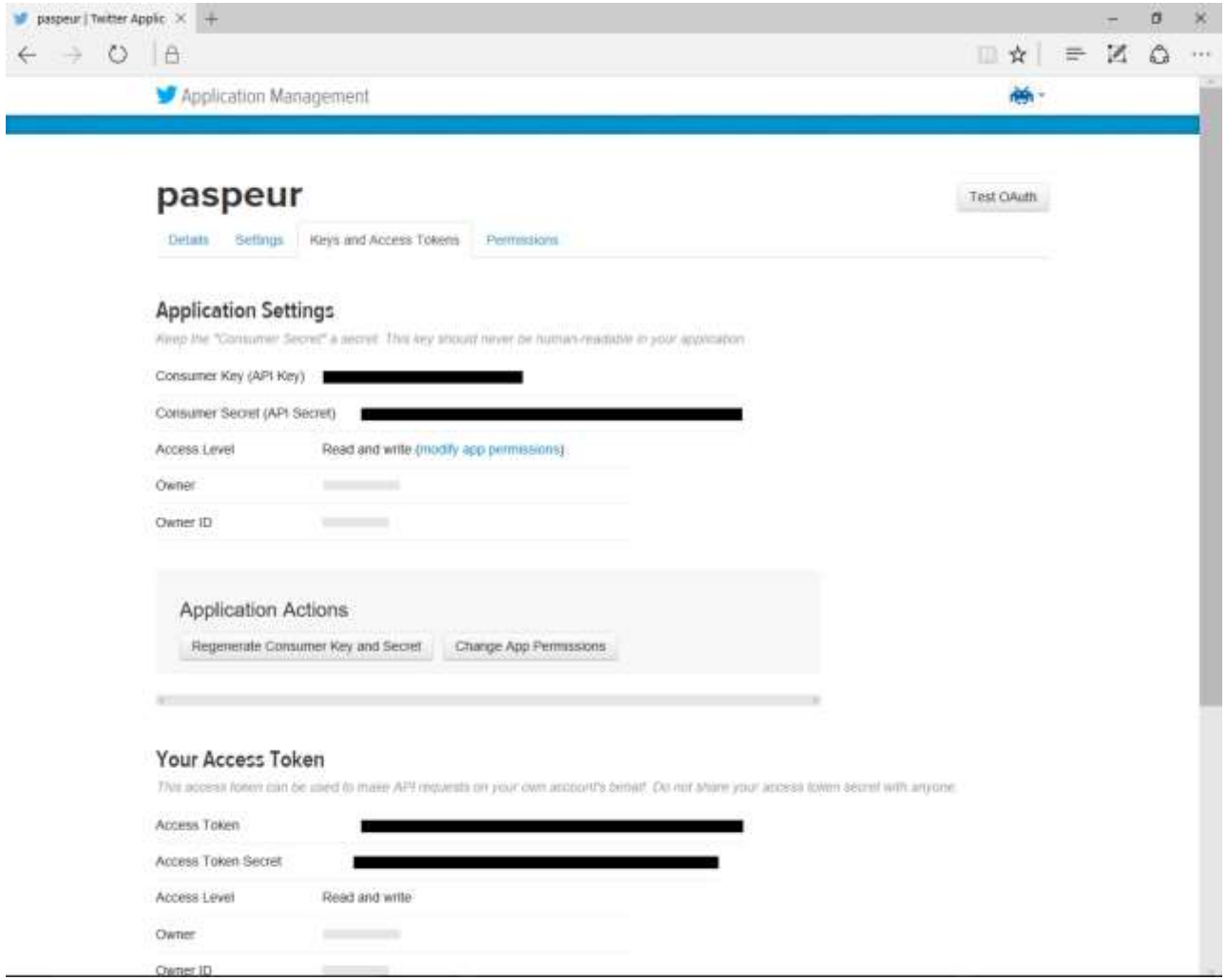
Google Chrome's inspect element feature is a great tool to scrape web sites



Application Programming Interfaces (APIs)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Application Settings
Keep the "Consumer Secret" a secret. This key should never be human-readable in your application.
Consumer Key (API Key)
Consumer Secret (API Secret)
Access Level
Read and write (modify app permissions)
Owner
Owner ID
Application Actions
Regenerate Consumer Key and Secret
Change App Permissions
Your Access Token
This access token can be used to make API requests on your own account's behalf. Do not share your access token secret with anyone.
Access Token
Access Token Secret
Access Level
Read and write
Owner
Owner ID

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