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MAT 265 - Week 4 Assignment

**I. Abstract Introduction:**

For this week's assignment, I began with a question of how library book checkouts have changed in the past 10 years. To begin, I looked at the most popular books that were checked out this year (2022) and compared it to the most popular books ten years ago (2012). I identified themes and unique data points in these queries as a way to further investigate the Seattle Public library data set. The two main themes that I highlighted in my queries and analysis are the timing of popularity in checkouts of trilogy book series around movie release dates and learning about books that are classified "novels".

**II. Detailed Description:** (Includes MySQL queries and analysis of results)

What have the most popular book checkouts been so far in 2022?

MySQL Query:

```
SELECT DISTINCT
  (A.bibNumber), B.title, A.num_CO, B.itemtype
FROM
  (SELECT
    bibNumber, COUNT(bibNumber) AS num_CO
  FROM
    spl_2016.outraw
  WHERE
    YEAR(cout) = 2022
    AND itemtype LIKE '%bk'
  GROUP BY 1
  ORDER BY 2 DESC
  LIMIT 500) AS A
  INNER JOIN
  spl_2016.outraw AS B ON A.bibNumber = B.bibNumber;
```

**Analysis:** A lot of the titles contain the key phrase 'a novel' in them. It is interesting that they are entered into the database as such because some of the books on the list are still categorized as novels, but this is not added to the title. ([Example - Lincoln Highway](#)) Also, I noticed a lot of data points with the key word "dog man", but after further research I learned that this is a graphic novel kid series. The series is 10 books long and they have all been released fairly recently ranging from 2016 to 2021.

What were the most popular book checkouts in 2012?

MySQL Query:

```
SELECT DISTINCT
  (A.bibNumber), B.title, A.num_CO, B.itemtype
FROM
  (SELECT
```

```

bibNumber, COUNT(bibNumber) AS num_CO
FROM
spl_2016.outraw
WHERE
YEAR(cout) = 2012
AND itemtype LIKE '%bk'
GROUP BY 1
ORDER BY 2 DESC
LIMIT 500) AS A
INNER JOIN
spl_2016.inraw AS B ON A.bibNumber = B.bibNumber;

```

**Analysis:** The top 3 books checked out in 2012 were from the Hunger games trilogy series. 50 Shades of Grey and Fault in Our Stars (books turned to movies) were also top check outs for the year 2012. The first Hunger Games movie came out in March 2012 while 50 Shades of Gray came out in February 2015 and the Fault in Our Stars in May 2014. Also, more classical children's books by Dr. Seuss are being checked out more frequently in 2012 compared to the comic books like “dog man” we see in 2022. The book titled “Steve Jobs” was checked out 1,252 times in 2012 most likely due to his death in late 2011. It is a nonfiction novel on his life.



Next, I will look closer at the top 3 checkouts of 2022. These included:

1. Cloud cuckoo land a novel
2. Lincoln highway
3. Crying in H Mart a memoir

I want to look at how many checkouts they have had in the past 10 years (since 2012). Did they just gain popularity?

MySQL Query:

```

SELECT
title, COUNT(cout) AS number_check_outs, YEAR(cout) AS year
FROM
spl_2016.outraw

```

WHERE

bibNumber = '3705616'

OR bibNumber = '3725763'

OR bibNumber = '3671533'

GROUP BY 1 , 3

ORDER BY 1 , 3 ASC;

Analysis: All three of these books did not have any checkouts before 2021. Therefore, it can be assumed that they were not held at the library before then. Both Cloud cuckoo land a novel and Lincoln Highway significantly increased in their number of checkouts from 2021 to 2022. On the other hand, Crying in H Mart a memoir, decreased in the number of checkouts from 2021 to 2022. This makes sense as the book came out in 2021 as the Stop Asian Hate movement arose. (March 2021) It is a memoir about growing up as a Korean American.

Now, let's look at the top 3 checkouts of 2012 and their trend from 2012 to the present day (2022). Recall that the top 3 book checkouts in 2012:

4. Hunger Games

5. Catching Fire

6. Mockingjay

MySQL Query:

SELECT

\*

FROM

(SELECT

title,

COUNT(cout) AS number\_check\_outs,

YEAR(cout) AS year\_CO

FROM

spl\_2016.outraw

WHERE

bibNumber = '2665213'

OR bibNumber = '2583295'

OR bibNumber = '2652782'

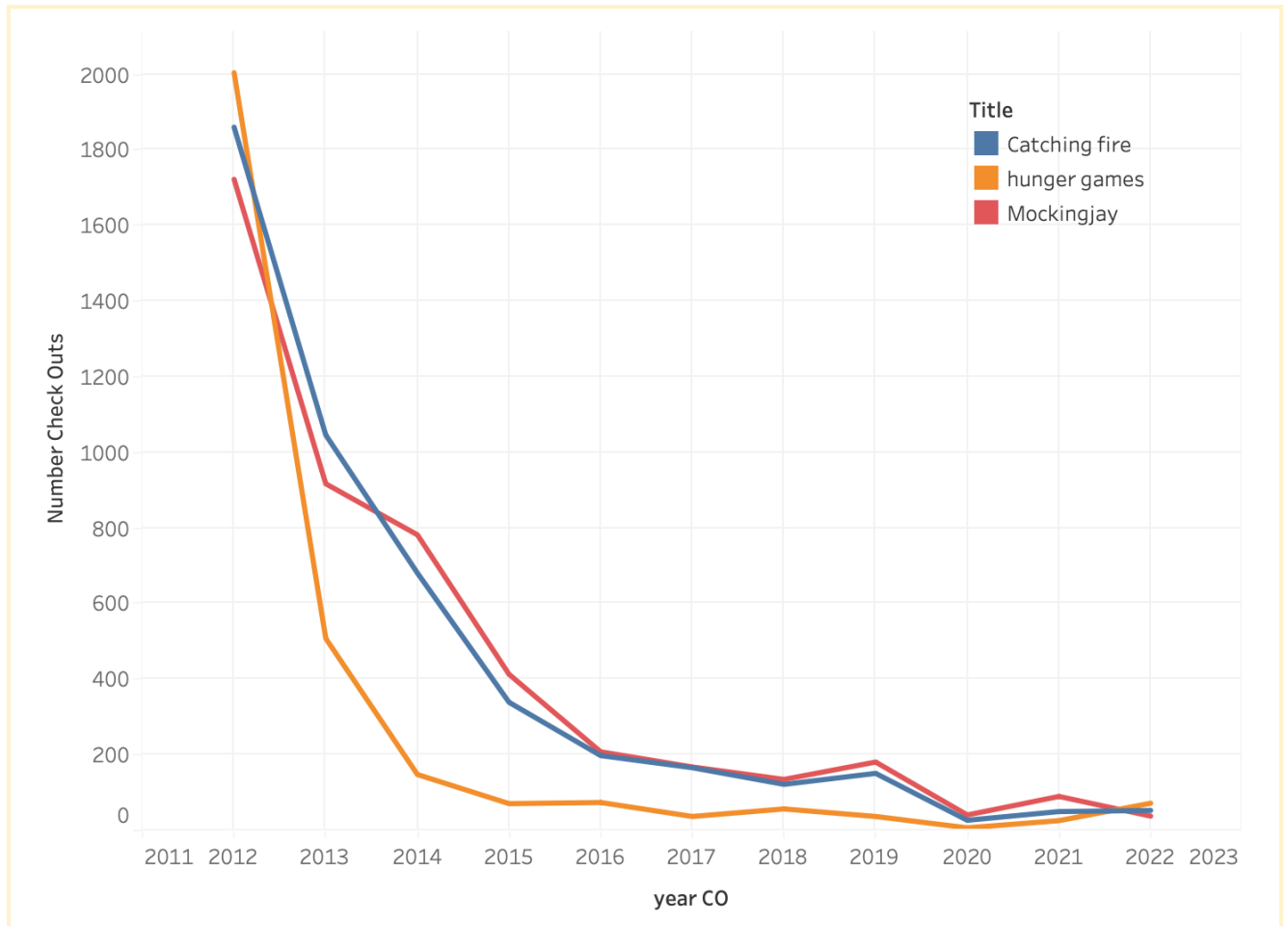
GROUP BY 1 , 3

ORDER BY 1 , 3 ASC) sub

WHERE

year\_CO >= 2012;

## Analysis:



Each book followed a similar curve decreasing after 2012 then increasing around 2019 and 2021 again. It is interesting to note that Hunger Games (the first book) had the highest number of checkouts in 2012, but then had fewer checkouts than the other two books in coming years. This would make sense as readers either looked to reading the next two books after watching the movie, or gave up on the series after reading the first book.

### When did the Hunger Games movies come out?

- Hunger Games - 03/23/2012
- Catching Fire - 11/20/2013
- Mockingjay Part 1 - 11/21/2014 & Mockingjay Part 2 - 11/20/2015
  - The last book was split into two movies

Now, I am interested in during which month was the maximum number of checkouts for each book in the trilogy? Was it before or after the movie came out? I will start with the first book namely *Hunger Games*.

MySQL Query:

SELECT

```
title,
COUNT(cout) AS number_check_outs,
MONTH(cout) AS month_CO,
YEAR(cout) AS year_CO
FROM
spl_2016.outraw
WHERE
bibNumber = '2665213'
GROUP BY 1 , 3 , 4
ORDER BY 2 DESC;
```

Analysis: The top month of checkouts was May 2012 which is around 2 months after the movie came out. People were still checking out the book before the movie, but this number shot up once the movie came out!

Now, let's look at the second book in the series *Catching Fire*.

MySQL Query:

```
SELECT
title,
COUNT(cout) AS number_check_outs,
MONTH(cout) AS month_CO,
YEAR(cout) AS year_CO
FROM
spl_2016.outraw
WHERE
bibNumber = '2583295'
GROUP BY 1 , 3 , 4
ORDER BY 2 DESC;
```

Analysis: The top two months were very close in checkout numbers. They included October 2012 and July 2012. So, this is about a year before the movie came out. I am inferring that the people reading and watching Hunger Games in 2012 were interested in the plot and wanting to know what happens while filming went on for the next movie.

Finally, let's look at the last book *Mockingjay*.

MySQL Query:

```
SELECT
title,
COUNT(cout) AS number_check_outs,
MONTH(cout) AS month_CO,
YEAR(cout) AS year_CO
FROM
spl_2016.outraw
WHERE
```

```
    bibNumber = '2652782'  
GROUP BY 1 , 3 , 4  
ORDER BY 2 DESC;
```

**Analysis:** The month with the top number of checkouts is November 2012. This is sequential with the trend of readers and the other books. It is 2-3 years before the movie release date which is of note as well.

Overall, it seems that once the movie comes out people rush to the books and then start reading them! It can be seen that the Hunger Games trilogy was not as popular until after the movie. Now, let's look at another trilogy book series which later turned into films from the same time period to see if they had the same results. The series that I will now be looking at is the Divergent series. As noted, there are also three books in the series. The first being *Divergent* released in 2011. Then, *Insurgent* released in 2012 and *Allegiant* released in 2013.

#### Divergent Movie Release Dates:

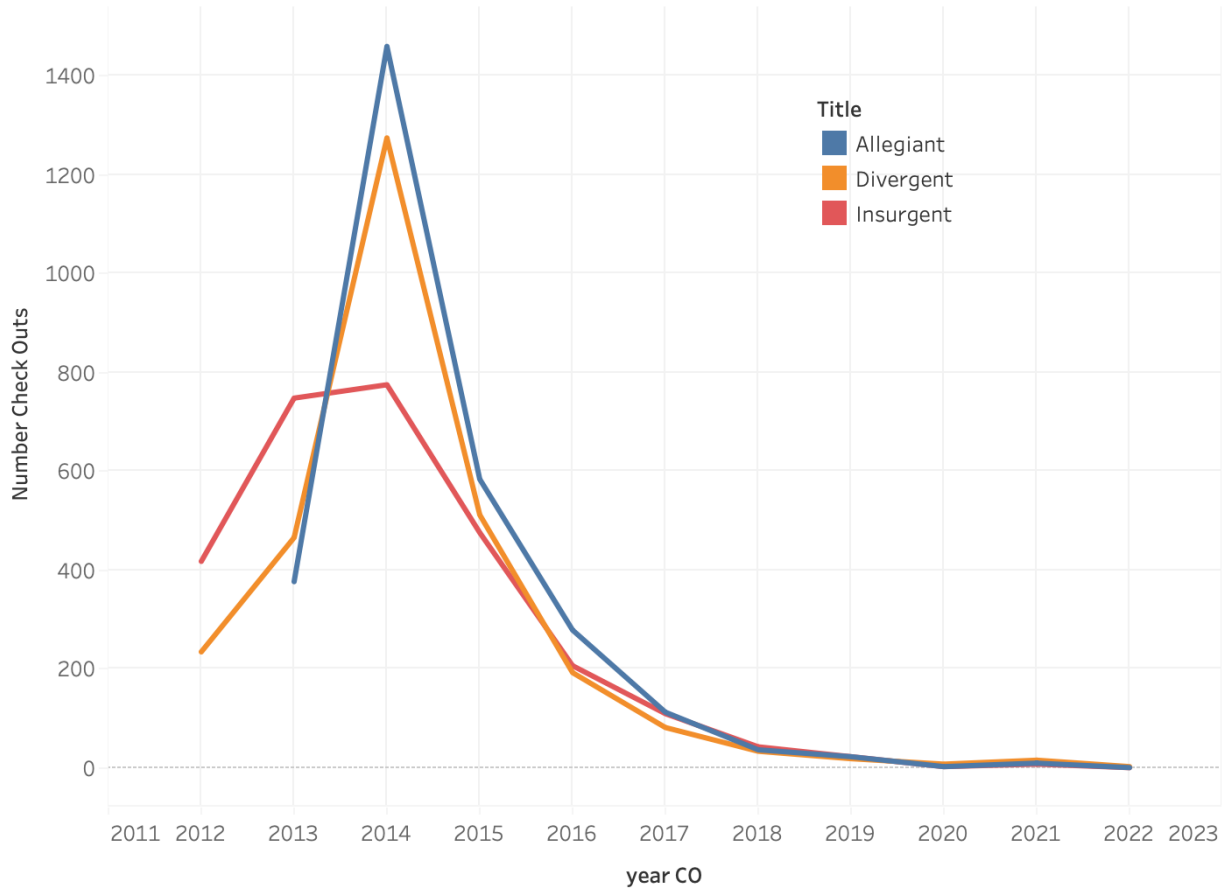
- Divergent - 3/21/2014
- Insurgent - 3/20/2015
- Allegiant - 3/18/2016

I will begin looking at the Divergent series by simply looking at their checkouts over time. I will query for the checkout date  $\geq$  2011 since that is when the first book came out.

#### MySQL Query:

```
SELECT  
    *  
FROM  
    (SELECT  
        title,  
        COUNT(cout) AS number_check_outs,  
        YEAR(cout) AS year_CO  
    FROM  
        spl_2016.outraw  
    WHERE  
        bibNumber = '2765235'  
        OR bibNumber = '2805225'  
        OR bibNumber = '2945068'  
    GROUP BY 1 , 3  
    ORDER BY 1 , 3 ASC) sub  
WHERE  
    year_CO  $\geq$  2011;
```

## Analysis:



Notice that all 3 books follow a similar curve. *Insurgent* has less checkouts, however. In 2014 the three books reached a maximum number of checkouts. This is the same year that the first movie came out. This is the same maximum that was observed with the Hunger Games trilogy. After the maximum was reached, each book has decreased their amount of checkouts to a steady number.

The next set of queries are looking for the month in which each book in the Divergent trilogy had the most number of checkouts. I am seeking data points to compare the popularity of the book checkouts in comparison to the movie(s) release dates along with the same trend from the Hunger Games trilogy book series and movies.

The first query explores the first book *Divergent* checkouts, aggregating them monthly. The columns are sorted so that the highest number of checkouts is at the top. Thus, we can see which month had the highest number of checkouts for this book.

MySQL Query:

```
SELECT
    title,
    COUNT(cout) AS number_check_outs,
```

```
    MONTH(cout) AS month_CO,  
    YEAR(cout) AS year_CO  
FROM  
    spl_2016.outraw  
WHERE  
    bibNumber = '2765235'  
GROUP BY 1 , 3 , 4  
ORDER BY 2 DESC;
```

**Analysis:** The month with the highest number of checkouts was May 2014. This is two months after the movie came out. Also, the same exact trend as Hunger Games!

Next, I will look at the monthly number of checkouts of the second book, namely Insurgent.

**MySQL Query:**

```
SELECT  
    title,  
    COUNT(cout) AS number_check_outs,  
    MONTH(cout) AS month_CO,  
    YEAR(cout) AS year_CO  
FROM  
    spl_2016.outraw  
WHERE  
    bibNumber = '2805225'  
GROUP BY 1 , 3 , 4  
ORDER BY 2 DESC;
```

**Analysis:** The month with the maximum number of checkouts was July of 2014. This is around one year before the movie came out for this book. Following it is 3 months after the first book hit its maximum number of checkouts.

Now, let's look at the final book in the series Allegiant. The query calls for the monthly number of checkouts ordering from highest to lowest.

**MySQL Query:**

```
SELECT  
    title,  
    COUNT(cout) AS number_check_outs,  
    MONTH(cout) AS month_CO,  
    YEAR(cout) AS year_CO  
FROM  
    spl_2016.outraw  
WHERE  
    bibNumber = '2945068'  
GROUP BY 1 , 3 , 4  
ORDER BY 2 DESC;
```



**Analysis:** The month with the highest number of checkouts is January 2014! This is before the first movie even came out. Maybe people were trying to hold on to the book series and story plot before seeing the movie because they knew famous actors would be in the movie such as Shailene Woodley and Ansel Elgort.

Similar to the Hunger Games trilogy, the first book in the Divergent series had a spike in the number of checkouts to begin with around 2 months after the movie for the book premiered. Following, the other two books sequentially hit their max number of monthly checkouts for both book series. The third book in each series had differing trends in comparison, however.

It is interesting to note, however, the popularity of both book series during the span of 5 years at the SPL. They both have a dystopian fiction nature and are trilogies for young adults to read. The trend of each in comparison to movie dates was fascinating to study.

The next topic of interest is going back to the top books of 2022. Recall that a lot of the titles had the words “a novel” added to the end of them. I am wondering why they are being tagged as such. To start, I want to see if this is something that the library has just recently started doing perhaps. Thus, the query will look at books with “novel” in the title searching for how many different books were checked out per year. I utilized the distinct function in SQL to avoid any outside factors or bias’ such as the 2020 pandemic and the library’s transition to e-books.

**MySQL Query:**

```
SELECT
  COUNT(DISTINCT (bibNumber)), YEAR(cout)
FROM
  spl_2016.outraw
WHERE
  title LIKE '%novel%'
  AND itemtype LIKE '%bk'
GROUP BY 2
ORDER BY 2 ASC;
```

**Analysis:** It can be seen that the time period from 2009-2011 had the highest number of books with the word “novel” in the title. Also, the frequency has been steadily increasing in the past three years (2020/2021/2022).

Now, I will run a similar query but will instead focus on books with “novel” in the subject line. Are there more or less books with “novel” in the subject line? Do they follow the same trend as what we just saw?

**MySQL Query:**

```
SELECT
  COUNT(DISTINCT (A.bibNumber)), YEAR(A.cout)
FROM
```

```

spl_2016.outraw AS A
  INNER JOIN
spl_2016.subject AS B ON A.bibNumber = B.bibNumber
WHERE
  B.subject LIKE '%novel%'
  AND A.itemtype LIKE '%bk'
GROUP BY 2
ORDER BY 2 ASC;

```

**Analysis:** The year with the most amount of books with “novel” in the subject line has been 2022. The number has been steadily increasing since 2012. Also, notice that in 2006 less books had “novel” in the subject line in comparison to adding it to their title for data entry. In recent years, this has changed. More books are categorized with “novel” begin added to their subject line. Possible ideas:

- There is an increase in the demand for novels in recent years.
  - [Peak Pick \(2017\)](#)
- This potentially caused an increase in the number of books that the library holds. This would explain the growing number of checkouts.

I am still interested in why “a novel” is added to the title column of some books. Thus, I will query for more information about such books. This query calls for the title, bibNumber, itemtype, and subject. It will look at the most popular titles (based on number of checkouts) at the top for relevance purposes.

**MySQL Query:**

```

SELECT
  C.bibNumber, C.title, C.num_CO, C.itemtype, D.subject
FROM
  (SELECT DISTINCT
    (A.bibNumber), B.title, A.num_CO, B.itemtype
  FROM
    (SELECT
      bibNumber, COUNT(bibNumber) AS num_CO
    FROM
      spl_2016.outraw
    WHERE
      title LIKE '%novel%'
      AND itemtype LIKE '%bk'
    GROUP BY 1
    ORDER BY 2 DESC
    LIMIT 500) AS A
  INNER JOIN spl_2016.inraw AS B ON A.bibNumber = B.bibNumber) C
  INNER JOIN

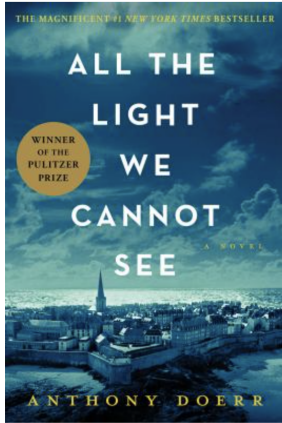
```

spl\_2016.subject AS D ON C.bibNumber = D.bibNumber;

Analysis: The top books with “novel” added to the title are:

- **All the light we cannot see**

← Search results



[Read an excerpt](#)

## All the Light We Cannot See

a Novel

Doerr, Anthony, 1973-

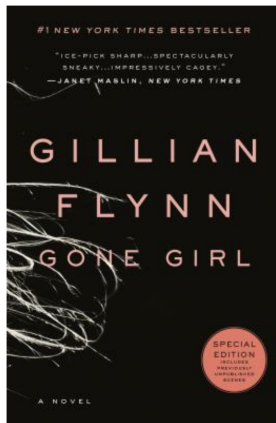
★★★★☆ (5,808 ratings) ☆☆☆☆☆ Rate this ▾

Book, 2014	eBook	Downloadable Audiobook	+2
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All copies in use All copies in use

"Marie Laure lives with her father in Paris within walking distance of the Museum of Natural History where he works as the master of the locks (there are thousands of locks in the museum). When she is six, she goes blind, and her father builds her a model of their neighborhood, every house, every manhole, so she can memorize it with her fingers and navigate the real streets with her feet and cane. When the Germans occupy Paris, father and daughter flee to Saint-Malo on the Brittany coast, where Marie-Laure's agoraphobic great uncle lives in a tall, narrow house by the sea wall. In another world in Germany, an orphan boy, Werner, grows up with his younger sister, Jutta, both enchanted by a crude radio Werner finds. He becomes a master at building and fixing radios, a talent that wins him a place at an elite and brutal military academy and, ultimately, makes him a highly specialized tracker of the Resistance. Werner travels through the heart of Hitler Youth to the far-flung outskirts of Russia, and finally into Saint-Malo, where his path converges with Marie-Laure."-- [Read less](#) ^

- **Gone girl**



[Read an excerpt](#)

## Gone Girl

a Novel

Flynn, Gillian, 1971-

★★★★☆ (4,959 ratings) ☆☆☆☆☆ Rate this ▾

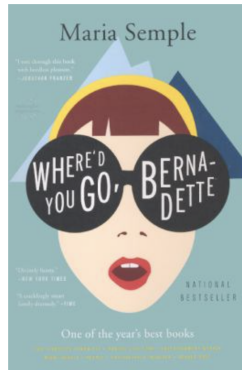
Book, 2014	eBook	Downloadable Audiobook
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Available Available

On a warm summer morning in North Carthage, Missouri, it is Nick and Amy's fifth wedding anniversary. Presents are being wrapped and reservations made when Nick's clever and beautiful wife disappears from their rented McMansion on the Mississippi River. Husband-of-the-year Nick isn't doing himself any favors with cringe-worthy daydreams about the slope and shape of his wife's head, but passages from Amy's diary reveal the alpha-girl perfectionist could have put anyone dangerously on edge. Under mounting pressure from police and the media--as well as Amy's fiercely doting parents--the town golden boy parades an endless series of lies, deceptions, and inappropriate behavior. Nick is oddly evasive, and he's definitely bitter--but is he really a killer? As the cops close in, every couple in town is soon wondering how well they really know the one they love. [Read less](#) ^

- **Whered you go Bernadette**

← Search results



## Where'd You Go, Bernadette

a Novel

Simple, Maria

First Back Bay paperback edition.

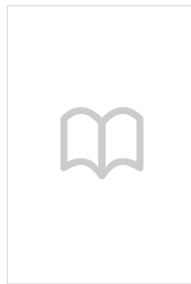
★★★★☆ (2,565 ratings) ☆☆☆☆☆ Rate this ▾

<b>Book, 2013</b>	eBook	Downloadable Audiobook	+2
1 more edition ▾	Available	Available	

Bernadette Fox is notorious. To her Microsoft-guru husband, she is a fearlessly opinionated partner; to fellow private-school mothers in Seattle, she is a disgrace; to design mavens, she is a revolutionary architect, and to 15-year-old Bee, she is a best friend and, simply, Mom. Then Bernadette disappears. It began when Bee aced her report card and claimed her promised reward: a family trip to Antarctica. But Bernadette's intensifying allergy to Seattle, and people in general, has made her so agoraphobic that a virtual assistant in India now runs her most basic errands. A trip to the end of the Earth is problematic. To find her mother, Bee compiles e-mail messages, official documents, secret correspondence, creating a touching novel about a family coming to terms with who they are, and the power of a daughter's love for her imperfect mother. [Read less](#) ↕

- **Adventures of Captain Underpants**

← Search results



## The Adventures of Captain Underpants

the First Epic Novel

Pilkey, Dav, 1966-

★★★★☆ (777 ratings) ☆☆☆☆☆ Rate this ▾

<b>Book, 1997</b>	Downloadable Audiobook	Audiobook CD
Available	Available	

When George and Harold hypnotize their principal into thinking that he is the superhero Captain Underpants, he leads them to the lair of the nefarious Dr. Diaper, where they must defeat his evil robot henchmen.

**Available**

26 copies 14 available  
0 on hold

Availability by location >

Place hold

For Later ▾

The first three are fictional stories with a plot introduced right away. The next also has a plot, but is more of a cartoon book series aimed for children readers.

Next, I executed the same query now looking at more information on the books with “novel” in the subject line.

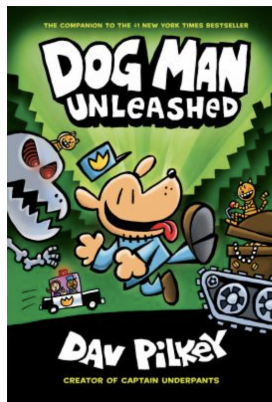
MySQL Query:

```
SELECT
  sub.bibNumber, title, num_CO, itemtype, E.subject
FROM
  (SELECT DISTINCT
    (C.bibNumber), D.title, C.num_CO, D.itemtype
  FROM
    (SELECT
      A.bibNumber, COUNT(A.bibNumber) AS num_CO
    FROM
      spl_2016.outraw AS A
    INNER JOIN spl_2016.subject AS B ON A.bibNumber = B.bibNumber
    WHERE
```

B.subject LIKE '%novel%'  
 AND A.itemtype LIKE '%bk'  
 GROUP BY 1  
 ORDER BY 2 DESC) AS C  
 INNER JOIN spl\_2016.inraw AS D ON C.bibNumber = D.bibNumber) sub  
 INNER JOIN  
 spl\_2016.subject AS E ON sub.bibNumber = E.bibnumber  
 WHERE  
 E.subject LIKE '%novel%'  
 ORDER BY 3 DESC

Analysis: Let's now look at the top 4 books with "novel" in the subject line:

- **Dog Man unleashed**



[Read an excerpt](#)

## Dog Man Unleashed

Pilkey, Dav, 1966-

★★★★☆ (680 ratings) ☆☆☆☆☆ Rate this ▾

📖 Graphic Novel, 2017

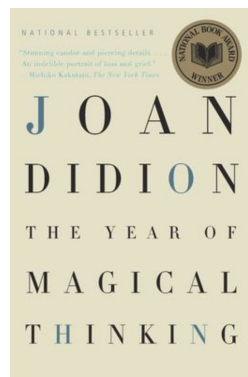
+ Downloadable Graphic Novel

All copies in use

Dog Man, a crimefighter with the head of a police dog and the body of a policeman, faces off against his archnemesis Petey the cat. Dog Man, the newest hero from the creator of Captain Underpants, is still learning a few tricks of the trade. If only the Chief would throw him a bone every once and a while ... Dog Man needs to dry up the drool, dust away the dander, and roll out of the refuse if he's going to impress the Chief, and he needs to do it fast! Petey the cat is out of the bag, and his criminal curiosity is taking the city by storm. Can the canine crime biter unleash justice on this ruffian in time to save the city, or will Petey get away with the purrfect crime? [Read less](#) ^

- **year of magical thinking**

← Search results



[Read an excerpt](#)

## The Year of Magical Thinking

Didion, Joan

★★★★☆ (517 ratings) ☆☆☆☆☆ Rate this ▾

📖 Book, 2007

📖 eBook

🎧 Audiobook CD

+1

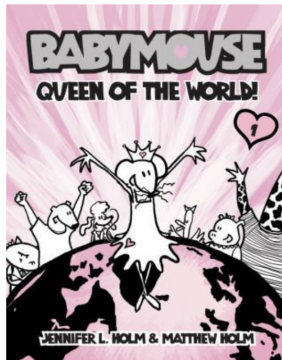
Available

Available

An autobiographical portrait of the author's efforts to deal with the death of her husband, John Gregory Dunne, shortly after their daughter Quintana was placed into an induced coma to help her survive complications after pneumonia.

- **Babymouse 1 Queen of the world**

← Search results



[Read an excerpt](#)

## Babymouse. [1], Queen of the World!

Holm, Jennifer L.

★★★★☆ (335 ratings) ☆☆☆☆☆ Rate this ▾

📖 Graphic Novel, 2005

An imaginative mouse dreams of being queen of the world, but will settle for an invitation to the most popular girl's slumber party.

- **Babymouse 2 Our hero**



[Read an excerpt](#)

## Babymouse. [2], Our Hero!

Holm, Jennifer L.

★★★★☆ (231 ratings) ☆☆☆☆☆ Rate this ▾

📖 Graphic Novel, 2005

An imaginative young mouse is terrified to face her enemy in dodgeball, but with the help of her best friend and support from her mother, she not only plays the game, she proves herself a hero.

Dog Man unleashed is a graphic novel similar to Captain underpants for children to read. The second book is an autobiography about overcoming and dealing with sick family members. The next two are also graphic novels that are similar to comic book series for kids about a fictional character named Babymouse.

It is interesting to compare the differences in the types of books that are outputted in the above two queries. When searching for “novel” in the title the results yield books with a heavier plot and more traditional storyline. On the other hand, books with “novel” in the subject line are yielding comic, children's books as outputs mainly.

This leads me to the question of: how do we categorize a book as a novel in the general case? After doing some research, I found that novels include the following:

- They are fiction (narrative fiction)
  - Exhibits human experience while keeping reader engaged in the storyline
- Written book that can be produced physically

- Written in prose style (basic grammar style)
- > 70,000 words (140 pages)

In conclusion, I believe that there are probably a lot more books at the SPL that qualify as novels. I found it interesting to study the books that they tagged as novels in both the title and subject line of the dataset. There is definitely further research that can be done here.

### **III. References & URL Links:**

- <https://www1.nyc.gov/site/cchr/community/stop-asian-hate.page>
- <https://seattle.bibliocommons.com/v2/record/S30C3671533>
- <https://collider.com/the-hunger-games-movies-in-order-how-to-watch/>
- [Novel vs Book – What's the Difference? - Squiblerhttps://www.squibler.io > blog > difference-novel-book](https://www.squibler.io/blog/difference-novel-book)
- <https://keydifferences.com/difference-between-novel-and-book.html>