Topic: SPL HotSpot, any information?

What I have from last week:

```
1   #What items has most copies
2   select
3       count(itemNumber) as copies,
4       bibNumber
5   from spl_2016.inraw
6   group by bibNumber
7   order by copies desc;
8
9   select
10      distinct(title),
11      bibNumber
12  from spl_2016.inraw
13  where
14      bibNumber in (
15          '3030520',
16          '3489506',
17          '2469502'
18      );
```

In which the SPL HotSpot is the second most one.

About SPL HotSpot

The SPL HotSpot is easy to use and gives you a wireless connection to the internet. Just turn it on, and you are ready to connect up to 15 devices. With the SPL HotSpot, you can use your laptop or tablet to do research on the internet, shop at your favorite website, download movies and music from the Library – and more.

- SPL HotSpot is a mobile device providing wireless connection.
  - You can use it for 21 days for free. Lose: Charge 90 USD
- Since HotSpot devices serve almost the same functionality, I want to find out if there's something different among these devices (Since it's the most popular one)

```
1   select
2       distinct itemtype,
3       collcode,
4       title,
5       callNumber
6   from spl_2016.inraw
7   where bibNumber = '3030520';
```

- Regex and Like operations are slow, since we know the exact bibNumber of the item, we can just search in this way.

char(8)	char(8)	varchar(255)	varchar(64)
1	areqnh	nanf	SPL HotSpot connecting Seattle	SPL Hotspot
2	areqnh	nanf	SPL HotSpot connecting Seattle	SPL Hotspot 2020
3	areqnh	nanf	SPL HotSpot connecting Seattle	SPL Hotspot 2022
4	aceqnh	caref	SPL HotSpot connecting Seattle	SPL Hotspot
5	aceqnh	nanf	SPL HotSpot connecting Seattle	SPL Hotspot
6	aceqnh	nanf	SPL HotSpot connecting Seattle	SPL Hotspot 2020
7	aceqnh	naref	SPL HotSpot connecting Seattle	SPL Hotspot
8	aceqnh	naref	SPL HotSpot connecting Seattle	Wifi Hotspot Placeholder
9	aceqnh	seorder	SPL HotSpot connecting Seattle	
10	aceq	canf	SPL HotSpot connecting Seattle	SPL Hotspot
11	aceq	nanf	SPL HotSpot connecting Seattle	SPL Hotspot
12	aceq	nanf	SPL HotSpot connecting Seattle	SPL Hotspot 2020

There are 3 different kinds of item: <mark>areqnh, aceqnh, aceq.</mark>

From this open data, we can know that they are Reference Equipment No Hold, Equipment No Hold, and normal Equipment. https://data.seattle.gov/w/pbt3-ytbc/2myu-6xk5?cur=tlm8xU9wwlh

What is No Hold?

How many of Hold and No Hold?

```
1  select
2      count(itemNumber),
3      substring(itemtype, 5, 2) as bigType,
4      year(cout) as yr
5  from spl_2016.inraw
6  where bibNumber = '3030520'
7  group by bigType, yr;
```
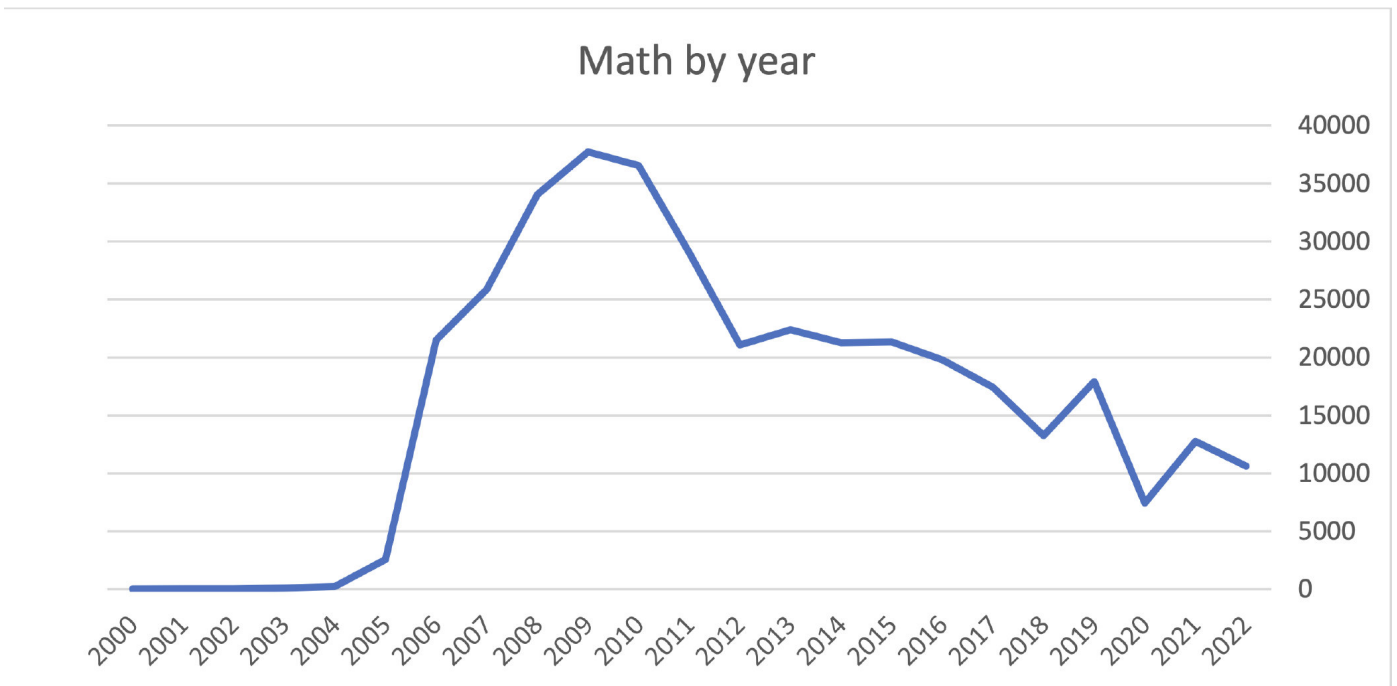
Means these devices are not availble for hold operations, as they are really popular.

file:///Users/naoyuki/Downloads/line-stack.html

Stacked Line

The number of Not Hold Hotspot gradually increases, maybe due to its popularity. And 2019 there is a huge bump and 2020 there is a huge loss. The reason for 2020 is obvious, the pandemic. Compare this with Math book by year (By Nikiforov Assignment 01), I find that they follow a similar pattern, peak at 2019, down at 2020 and goes back at 2021.

- Why 2019 is the Peak?

  Possible Reason: Seattle Public Library sees positive changes after eliminating overdue fees - The Seattle Times

SPL had been considering the change since 2016. Several cities across the U.S. have reported a rise in borrowers and a decline in overdue items after adopting a no-late fee policy.

- SPL recovers so much than math books, it seems like people really needs these devices.

Possible new devices model?

In callNumber part, some are labeled as 2020 and 2022

```
1  select
2      count(itemNumber),
3      callNumber,
4      year(cout) as yr
5  from spl_2016.inraw
6  where
7      bibNumber = '3030520'
8  group by callNumber, yr;
```

Assume callNumber indicates model information, model 2020 sharply substitutes the original model in 2020 and 2021. The new model 2022 was just about to rise.

file:///Users/naoyuki/Downloads/line-stack.html

Stacked Line — OG — 2020 — 2022

Topic: Late Return Income Change

In August 2019, there's no more overdue fees at SPL. Let's compare the income difference if we apply different policies.

- Before Aug 2019

Late fines vary by item:

- Late fines for most items are $.25 per day, for a maximum of $8 per item.
- Items borrowed via interlibrary or reference loan cost $1 per day overdue, up to a maximum of $15 per item.
- E-books and audiobooks you download expire automatically when they are due, with no late fines.

http://web.archive.org/web/20190502005120/https://www.spl.org/using-the-library/manage-your-account/payments/fees-and-lost-materials

- New Policy:

  How much will I be charged if I return something late or lose an item?

  We do not charge daily late fines, so there are no charges for any item you return late, once you return it. When an item is 31 days overdue we consider it lost and charge you for the replacement cost. If the item is then found and returned within one year of payment of fee, we will reimburse this fee.

- Since it's hard to know the replacement cost of all items, let's just focus on the popular ones.

Recall that the most popular items are: Let's just focus on the first one.

		title varchar(255)	bibNumber int
	1	Into the wild	2469502
	2	SPL HotSpot connectir	3030520
	3	Headphones	3489506

- The replacement cost, Assume it would be 6 dollars for Into the wild, and 3 weeks of borrow duration.

Into the Wild
★★★★½ ˅ 11,080
DVD
$5³⁹ $5.99
✓prime FREE Delivery **Thu, Oct 13**
More Buying Choices
$2.51 (19 used & new offers)
Perfect Paperback

- Starring: Em
- Directed by:

```
1   #custom function to calculate fine #Access denied
2   CREATE FUNCTION CALCFINE(DATES INT) RETURNS FLOAT BEGIN
3       DECLARE ret_Val INT;
4       SET ret_Val = 0;
5       set ret_Val = 0.25*DATES;
6       if (ret_Val > 8) THEN set ret_Val = 8;
7       end if;
8       RETURN ret_Val;
9   END;
```

Alternative way to calculate income is:

```
1   select
2       title,
3       SUM(Res.Fine) as totalFine
4   from (
5           SELECT
6               title,
7               DATEDIFF(cin, cout) AS DateDiff,
8               least(0.25 * DATEDIFF(cin, cout), 8) AS Fine
9           FROM spl_2016.inraw
10          WHERE
11              bibNumber = '2469502'
12              and cout > '2005-01-01'
13              and DATEDIFF(cin, cout) > 21
14      ) as Res
15  group by title;
```

		title varchar(255)	totalFine
	1	Into the wild	16806.50

As for now, we may only consider those borrowed more than 1 year, in which the library will assume you lost the item and after 1 year even it's found, the fee is non-refundable.

```
1   SELECT
2       title,
3       DATEDIFF(cin, cout) AS DateDiff
4   FROM spl_2016.inraw
5   WHERE
6       bibNumber = '2469502'
7       and cout > '2005-01-01'
8       and DATEDIFF(cin, cout) > 21 + 365;
```

		title varchar(255)	DateDiff
	1	Into the wild	455

Only one person have to pay the replacement fee, which is 5.99 dollars. What a difference. Actually 210 of them will first pay 5.99 and then get the refund back, only one person can't get 5.99 bucks back.