

Project 1: Processing Visualization Project

(with the Revised Data Mining Assignment)

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Question:

How much are Seattle people interested in Microsoft compared to Apple?

Description:

Seattle is known as the city where have many well-known interstate or international companies such as Starbucks, Amazon, Microsoft... There are many famous companies, especially IT companies found in Seattle. The best example can be "Microsoft", one of the biggest IT companies in the world. When it comes to a rival relationship between Microsoft and Apple, I was curious how much Seattle people are caring about their famous worldwide company "Microsoft" and how much they express interests in Microsoft with checking-out Microsoft books, media, or any other references about Microsoft from Seattle Public Library. Also, I wondered if the boom of "Apple," the rival company, attacked to Seattle as like other cities and countries in the world, and I assumed it might affect to change Seattle people's interests toward Apple over years or just stay in Microsoft.

Regarding the mining queries, I searched the number of checked out items titled "%Microsoft%" and "%Apple%" in 10 different categories of dewey classes and past 6 years (2005-2010). Additionally, I searched the most popular 10 items that was checked-out within 6 years, and made a list for each company.

Query1 - by Dewey numbers

```
SELECT
  FLOOR(`deweyClass`/100) AS `deweyClass_100`,
  COUNT(*) AS `# of items`
FROM `transactions2011`
WHERE
  `deweyClass` IS NOT NULL AND
  (
    `title` LIKE '%apple%'
    OR `subject1` LIKE '%apple%'
    OR `subject2` LIKE '%apple%'
    OR `subject3` LIKE '%apple%'
    OR `subject4` LIKE '%apple%'
    OR `subject5` LIKE '%apple%'
    OR `subject6` LIKE '%apple%'
  )
```

```

        OR `subject7` LIKE '%apple%'
        OR `subject8` LIKE '%apple%'
        OR `subject9` LIKE '%apple%'
        OR `subject10` LIKE '%apple%'
        OR `subject11` LIKE '%apple%'
        OR `subject12` LIKE '%apple%'
        OR `subject13` LIKE '%apple%'
        OR `subject14` LIKE '%apple%'
        OR `subject15` LIKE '%apple%' )

GROUP BY `deweyClass_100`
ORDER BY `deweyClass_100` ASC;

```

Query2 - by years

```

SELECT
    FLOOR(`deweyClass`/100) AS `deweyClass_100`,
    COUNT(*) AS `# of items`
FROM `transactions2011`
WHERE
    `deweyClass` IS NOT NULL AND
    (
        `title` LIKE '%apple%'
        OR `subject1` LIKE '%apple%'
        OR `subject2` LIKE '%apple%'
        OR `subject3` LIKE '%apple%'
        OR `subject4` LIKE '%apple%'
        OR `subject5` LIKE '%apple%'
        OR `subject6` LIKE '%apple%'
        OR `subject7` LIKE '%apple%'
        OR `subject8` LIKE '%apple%'
        OR `subject9` LIKE '%apple%'
        OR `subject10` LIKE '%apple%'
        OR `subject11` LIKE '%apple%'
        OR `subject12` LIKE '%apple%'
        OR `subject13` LIKE '%apple%'
        OR `subject14` LIKE '%apple%'
        OR `subject15` LIKE '%apple%' )

YEAR(`checkoutDate`) BETWEEN 2001 AND 2011
GROUP BY `deweyClass_100`
ORDER BY `deweyClass_100` ASC;

```

<Best 10 Microsoft items>

Windows 7 for dummies	acbk	222	
Excel 2010 for dummies	acbk	211	
How to use Microsoft Excel 2007	acdvd	211	
Microsoft Office Excel 2007 for dummies	acbk	176	
Discover Microsoft Excel 2007 Level 2	acdvd	175	
Discover Microsoft Excel 2007 Level 1	acdvd	142	

Discover Microsoft Word 2007 Level 2	acdvd	140
Discover Microsoft Excel 2007 Level 3	acdvd	139
Discover Microsoft Access 2007 Level 3	acdvd	137
How to use Microsoft Word 2007	acdvd	137

<Best 10 Apple items>

Just kids	acbk	1242		
Apples	jcbk	195		
Steve Jobs	acbk	161		
Johnny Appleseed a tall tale			jcbk	123
Pirates of Silicon Valley	acdvd		119	
apple pip princess	jcbk	118		
Circus	acdvd	117		
Johnny Boo and the happy apples			jcbk	117
Ducking for apples	jcbk	109		
Apples to Oregon being the slightly true narrative of how a brave pioneer father brought apples peaches pears plums grapes and cherries and children across the plains				
			jcbk	105

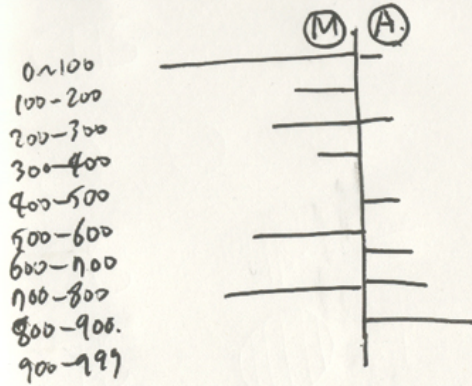
Visualization Design Concept

In this first project, I would like to explore the different way of visualizing the mining data in various designs, so I used the basic design elements such as bars, circles, and texts. There were three different information, and I used the three different design concepts for each data information. My first attempt was to contain all the information in one space, however it looked too overwhelmed and packed so it was hard to read the information clearly in one sight. Thus, I divided it into three pages, and users can change pages by pushing keys. The first design is a simple bar animation, which is a very intuitive and direct design. The length of each bar represents the number of checked-out items on each dewey category. The dewey list is on the right side of the design. The second design shows the circles of each year, and the radius of circles represent the number of checked-out items each year. If users roll over a mouse pointer at the center of the circles, the exact number of checked-out items with year number is appeared. Lastly, the last page contains the best 10 checked-out items, and there's no interactivity. Overall, the clear color contrast between blue and red shows the rival relationship between Microsoft and Apple.

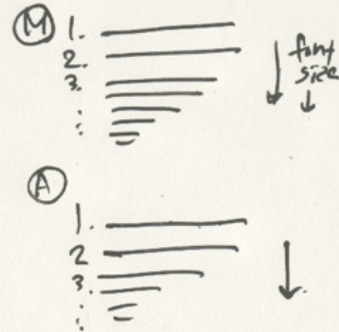
Doodles

Microsoft vs. Apple

1. Price Class.



2. Best 10 titles



3. Number of checked out items over years (circle graph).



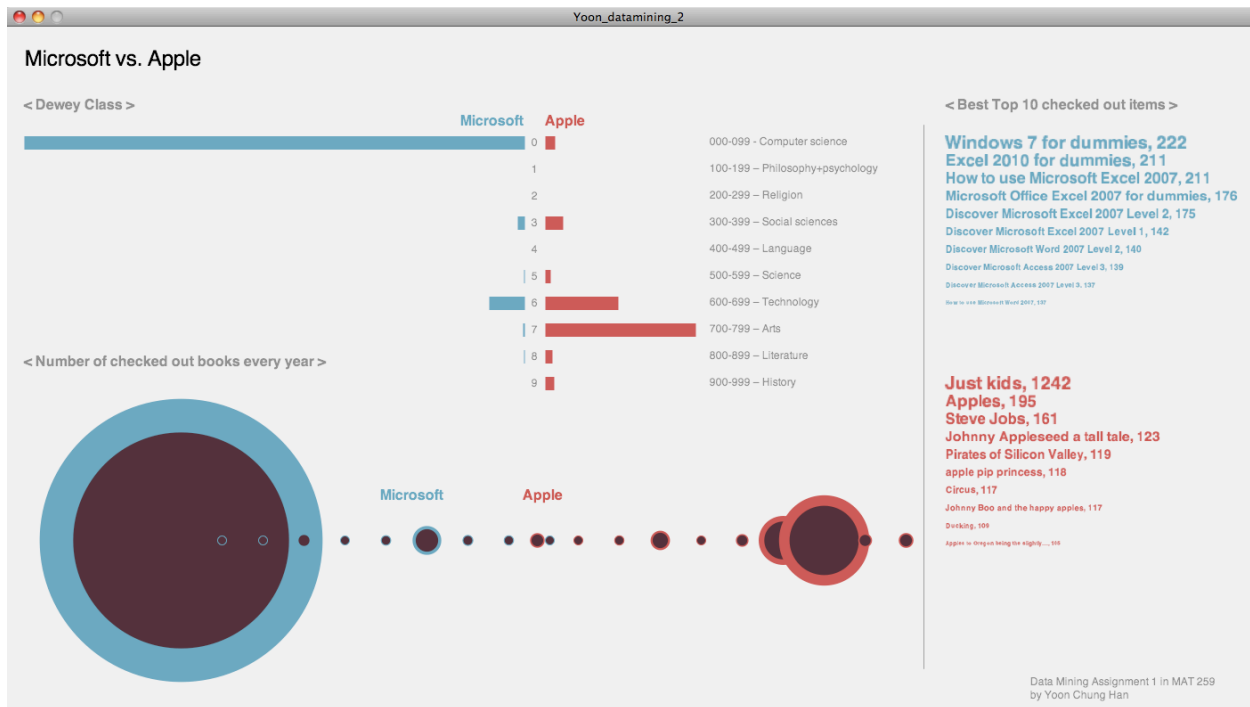


Figure.1 The First Draft Design

<Revised Design>

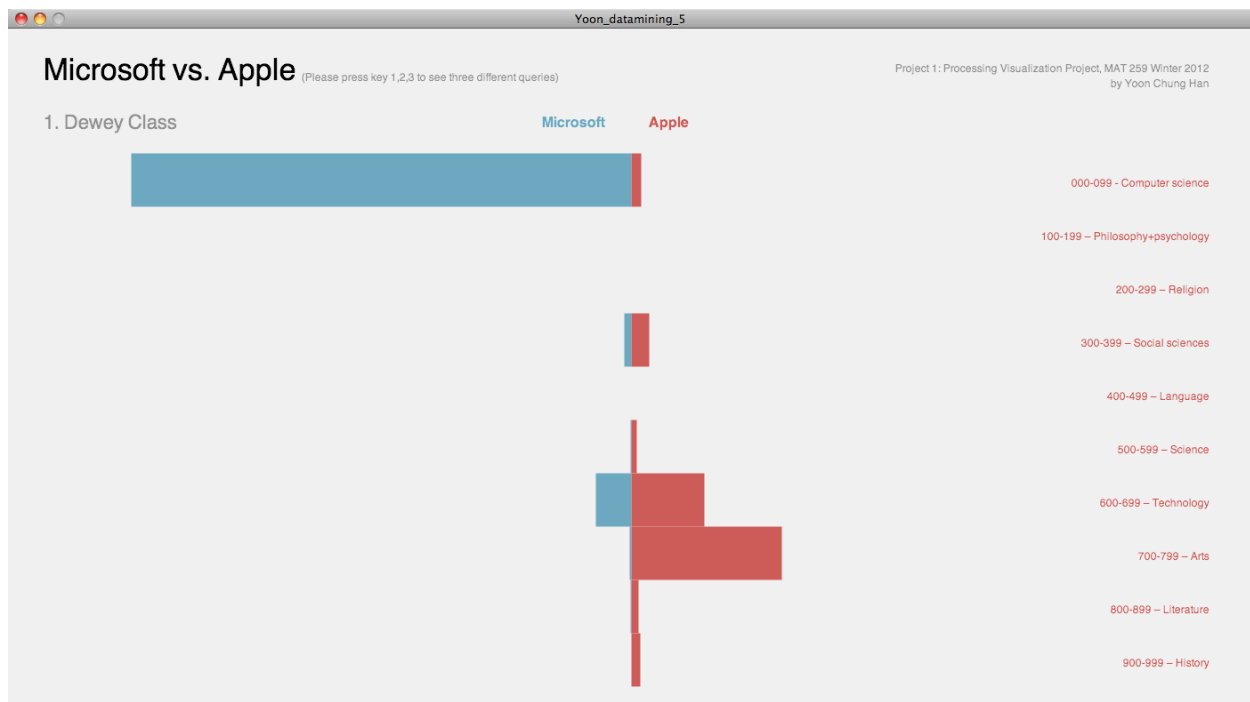


Figure 2. The Final Design - First Page (1. Dewey Class)

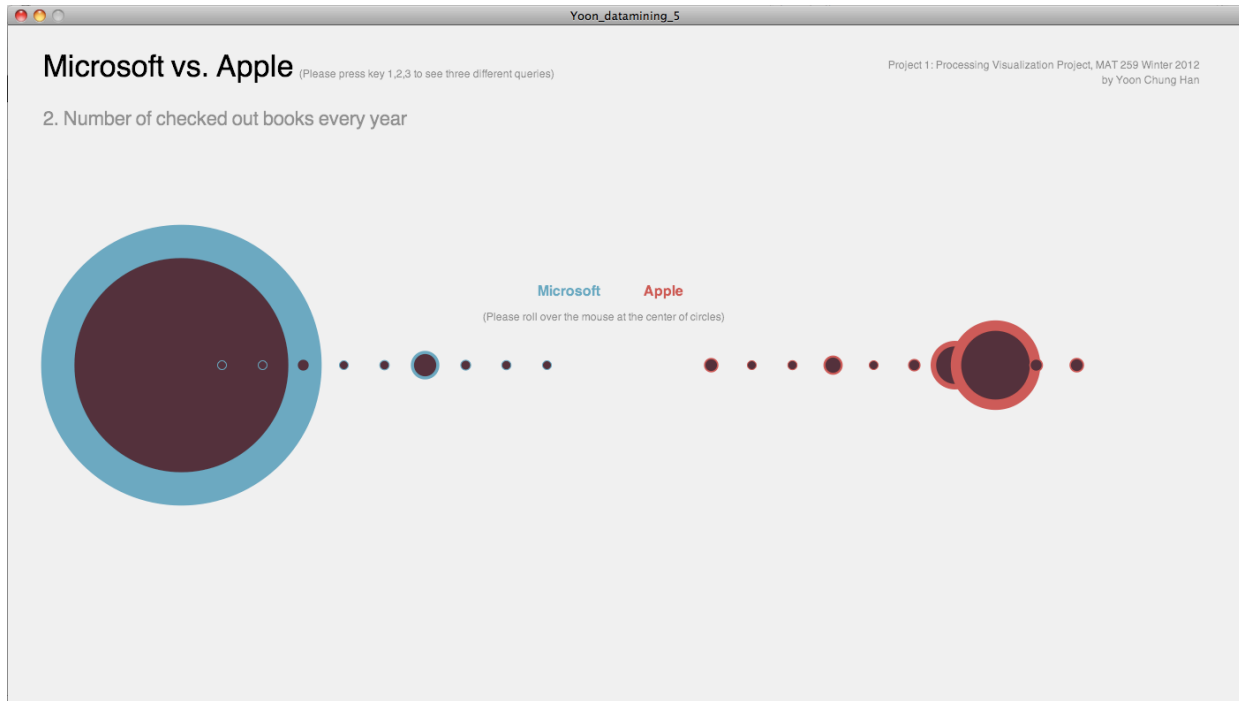


Figure 3. The Final Design - The Second Page (2. Number of checked out books every year)

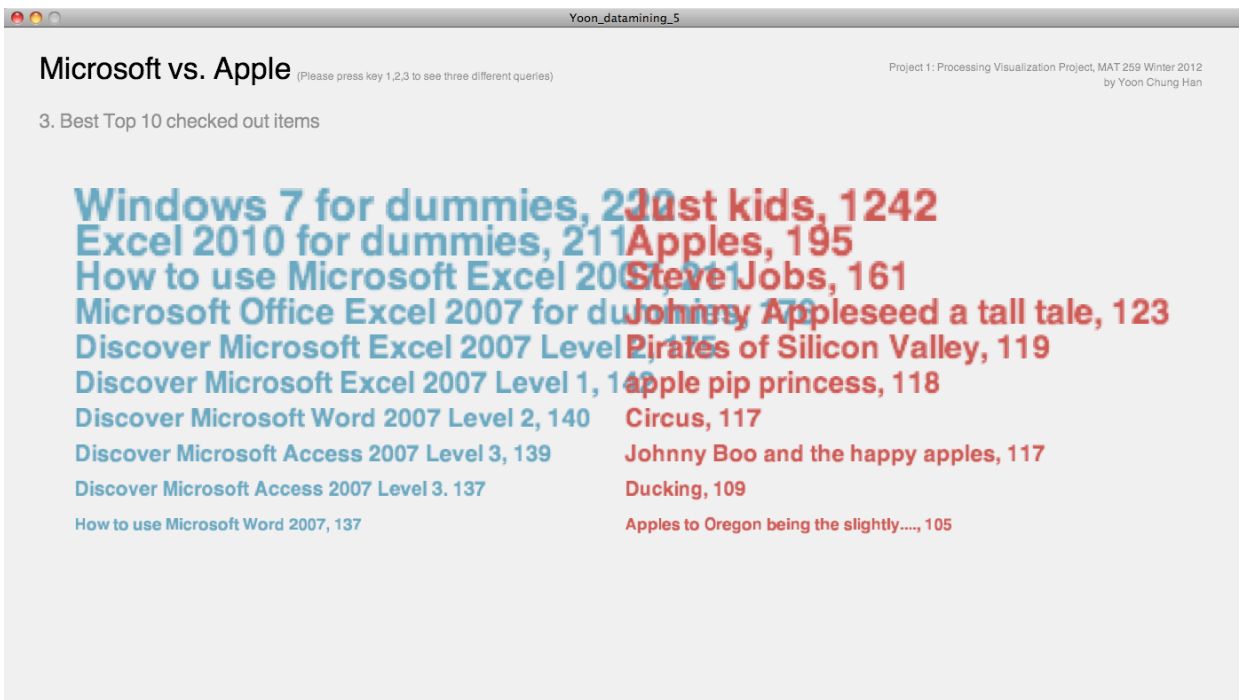


Figure 4. The Final Design - The Third Page (3. Best Top 10 checked out items)