Additional SQL Demos

Strings

select * from inraw where title = "catch 22";

select * from inraw where title = "catch 22" and itemtype = "acdvd";

select * from inraw where title like "%vampire%";

select * from inraw where (title like "%vampire%" or subj like "%vampire%") AND title like "%blood%" AND (itemtype = "acbk" or itemtype = "acdvd");

Temporal

select * from inraw where date(cout) = '2011-01-10' order by cin;

select * from inraw where date(cout) = '2011-01-10' order by cin DESC;

select date(cin),title from inraw where date(cout) = '2011-01-10' order by date(cin) DESC, title;

select title, itemtype, TIMESTAMPDIFF(DAY,cout,cin) from inraw where date(cout) = '2011-02-20' and TIMESTAMPDIFF(DAY,cout,cin) > 30 order by TIMESTAMPDIFF(DAY,cout,cin) ASC;

Order according to temporal relationship (when item checked out, or when item added to collection)

select cout,cin,title,TIMESTAMPDIFF(HOUR,cout,cin)/24.0 from inraw where (month(cout)>1) AND (month(cout)<5) AND title like "%nosferatu%";

Where we say "HOUR" we could also use any MySQL unit type, such as MICROSECOND, SECOND, MONTH, etc. Here's a list options: http://dev.mysql.com/doc/refman/5.5/en/date-and-time-functions.html#function_date-add

Classification

Classify according to itemtype (media)

select * from inraw where (itemtype like "%slide%" or itemtype like "%mf%");

Classify according to title or words in title

select * from in raw where title like

Classify according to Dewey

select * from spl2.inraw where deweyClass = 791.437 and year(cout) = 2012

Classify according to collection code (where its located)

select * from inraw where collcode = 'nanf' and year(cout) = 2012 and title like '%harry potter%'

select * from inraw where collcode like '%anf' and year(cout) = 2012 and title like '%harry potter%'

Classify according to Dewey

```
select * from inraw where  year(cout) = 2012 and deweyClass > 0 and deweyClass < 100 order by deweyClass
```

Classify according to itemtype

```
select * from inraw where title like "%Harry Potter%" and year(cout) = 2012 order by itemtype
```

Frequency

Frequency: Itemtype, barcode, collection code, Dewey/non-dewey, word

Express number of occurrences of a repeating event per unit time

```
select floor(deweyClass/10)*10 as dewey,sum( case when itemtype = 'acbk' then 1 else 0 end) / TIMESTAMPDIFF(HOUR,cout,cin) as frequency from inraw  group by floor(deweyClass/10)*10;
```

Express number of occurrences of a repeating event per unit time spatially

```
select floor(deweyClass/10)*10 as dewey,sum( case when itemtype = 'acbk' then 1 else 0 end) / TIMESTAMPDIFF(HOUR,cout,cin) as frequency,avg(TIMESTAMPDIFF(HOUR,cout,cin))   from inraw  group by floor(deweyClass/10)*10;
```

Statistics

Variance (From Grant McKenzie SQL assignment 2014)

```
SELECT day, daynum, VARIANCE(count) AS variance, count(*) as cnt, sum(count) as sum FROM (SELECT dayname(cin) as day, dayofweek(cin) as daynum, substring(deweyClass,1,3) as subdew, count(*) as count FROM (SELECT cin, deweyClass FROM spl2.inraw WHERE deweyClass <> '') as a1 GROUP by subdew, day) as a2 GROUP BY day, daynum ORDER BY daynum;
```

Standard Deviation (modified Grant)

```
SELECT day, daynum, STDEV(count) AS STDEVIATION, count(*) as cnt, sum(count) as sum FROM (SELECT dayname(cin) as day, dayofweek(cin) as daynum, substring(deweyClass,1,3) as subdew, count(*) as count FROM (SELECT cin, deweyClass FROM spl2.inraw WHERE deweyClass <> '') as a1 GROUP by subdew, day) as a2 GROUP BY day, daynum ORDER BY daynum;
```

Associative

Select according to two sets in the same metadata (two different things)

Make a comparative assessment between two or more metadata

Frequency Pattern Algorithm

Hierarchical & Relational

Order according to acquisition date, activity volume, etc.

2 level scalable (overview/detailed - must have data density)

Volume & Multi-dimensions

```
select
sum( case when  deweyClass > 000 and deweyClass < 100 then 1 else 0 end) as oonnee,
sum( case when  deweyClass > 100 and deweyClass < 200 then 1 else 0 end) as two,
sum( case when  deweyClass > 200 and deweyClass < 300 then 1 else 0 end) as three,
sum( case when  deweyClass > 300 and deweyClass < 400 then 1 else 0 end) as four,
sum( case when  deweyClass > 400 and deweyClass < 500 then 1 else 0 end) as five,
sum( case when  deweyClass > 500 and deweyClass < 600 then 1 else 0 end) as six,
sum( case when  deweyClass > 600 and deweyClass < 700 then 1 else 0 end) as seven,
sum( case when  deweyClass > 700 and deweyClass < 800 then 1 else 0 end) as eight,
sum( case when  deweyClass > 800 and deweyClass < 900 then 1 else 0 end) as nine,
sum( case when  deweyClass > 900 and deweyClass < 1000 then 1 else 0 end) as ten
from inraw where itemtype= "acbk" and year(cout) >= "2009" and year(cout) <= "2013"
group by month(cout), year(cout) order by  year(cout), month(cout)
```

5 or more metadata per data to csv

```
select title, year(cout),month(cout),day(cout),hour(cout),minute(cout) ,itemtype, deweyClass,cout,cin, TIMESTAMPDIFF(HOUR,cout,cin) from inraw where deweyClass > 0  AND itemtype = "acdvd" AND year(cout) =2013 AND TIMESTAMPDIFF(HOUR,cout,cin) > 0 order by month(cout)
```

InnerJoin

The MySQL INNER JOIN clause matches rows in one table with rows in other tables and allows you to query rows that contain columns from both tables (see http://www.mat.ucsb.edu/~g.legrady/academic/courses/14w259/lab1/mySQL_Lab_InnerJoin.rtf)

Order vs Group

Difference between order by and group by:

ORDER BY alters the order in which items are returned

GROUP BY will aggregate records by the specified columns which allows you to perform aggregation functions on non-grouped columns (such as SUM, COUNT, AVG, etc)

Additional References

More data from http://seattle.bibliocommons.com/dashboard

SQL Tutorials from W3school.com (http://www.w3schools.com/sql/default.asp)