Additional SQL Demos

Strings

```sql
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

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

Classify according to title or words in title
```sql
select * from inraw where title like
```

Classify according to Dewey
```sql
select * from spl2.inraw where deweyClass = 791.437 and year(cout) = 2012
```

Classify according to collection code (where its located)
```sql
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

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

Classify according to itemtype

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

Frequency

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

Express number of occurrences of a repeating event per unit time

```sql
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
```

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

```sql
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
```

Statistics

Variance (From Grant McKenzie SQL assignment 2014)

```sql
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 <> '') a1
GROUP by subdew, day) as a2 GROUP BY day, daynum ORDER BY daynum;
```

Standard Deviation (modified Grant)

```sql
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 one,
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)