MySQL Demos Winter 2016

Limit	Limits the length of the search to 100 (http://www.w3schools.com/sql/sql_top.asp)
	SELECT * FROM spl3._rawXmlDataCheckOuts LIMIT 100; SELECT * FROM spl3.title LIMIT 100;
Select	Select title and deweyClass from… (http://www.w3schools.com/sql/sql_select.asp)
	SELECT title, deweyClass FROM spl3._rawXmlDataCheckOuts LIMIT 100; SELECT subject, bibNumber FROM spl3.subject LIMIT 100
Where	Term by which where to search (http://www.w3schools.com/sql/sql_where.asp)
	SELECT title, deweyClass FROM spl3._rawXmlDataCheckOuts WHERE deweyClass > 780 AND deweyClass < 790 LIMIT 100; SELECT * FROM spl3.deweyClass WHERE deweyClass > 780 AND deweyClass < 790 LIMIT 100;
String	Data in text mode. There are many options for searching and comparing strings. See http://dev.mysql.com/doc/refman/5.6/en/string-functions.html
	SELECT title, deweyClass FROM spl3._rawXmlDataCheckOuts WHERE title = 'music' LIMIT 100; SELECT title FROM spl3.title WHERE title like '%music%' LIMIT 100;
Like	Pattern matching in string. Also try STRCMP() (http://www.w3schools.com/sql/sql_like.asp)
	SELECT title, deweyClass FROM spl3._rawXmlDataCheckOuts WHERE title like '%book%' LIMIT 100; SELECT subject FROM spl3.subject WHERE subject like '%book%' LIMIT 100;
Distinct	Minimize to retrieve each output to just once (http://www.w3schools.com/sql/sql_distinct.asp)
	SELECT DISTINCT title, deweyClass FROM spl3._rawXmlDataCheckOuts WHERE title like '%book%' LIMIT 100; SELECT DISTINCT title FROM spl3.title WHERE title like '%book%' LIMIT 100;
Data Type	Introduce three data types in MySQL (http://dev.mysql.com/doc/refman/5.7/en/data-types.html)

Numeric	SELECT
	   deweyClass, title, checkOut
	FROM
	   spl3._rawXmlDataCheckIns
	WHERE
	   deweyClass >= 780 AND deweyClass < 781
	LIMIT 1000;

String	SELECT deweyClass, title, checkOut

| | ```
FROM
  spl3._rawXmlDataCheckIns
WHERE
  title like '%three body%'
LIMIT 1000;
``` |
| **Date** | ```
SELECT
  deweyClass, title, date(checkOut) as date
FROM
  spl3._rawXmlDataCheckIns
WHERE
  date(checkOut) = '2008-08-08'
LIMIT 100;
``` |
| **Between** | Alternative to > = and < |
| | ```
SELECT
  *
FROM
  spl3.deweyClass
WHERE
  deweyClass between 880 AND 881
LIMIT 100;
``` |
| **Inner Join Two Tables** | Returns a record if present in both joined tables (http://www.w3schools.com/sql/sql_join_inner.asp) |
| | ```
SELECT
  subject, spl3.subject.bibNumber, title
FROM
  spl3.subject,
  spl3.title
WHERE
  spl3.subject.bibNumber = spl3.title.bibNumber
    AND (spl3.title.title LIKE '%global%'
    OR spl3.subject.subject LIKE '%global%')
``` |
| **Innerjoin, between** | ```
SELECT
  deweyClass.bibNumber, deweyClass, title.title
FROM
  spl3.deweyClass,
  spl3.title
WHERE
  spl3.deweyClass.bibNumber = spl3.title.bibNumber
    AND deweyClass.deweyClass BETWEEN 680 AND 682
LIMIT 100;
``` |
| **Inner Join Three Tables** | Returns a record if present in the three joined tables |
| | ```
SELECT
  subject,
  spl3.subject.bibNumber,
  title,
  checkOut,
  checkInFirst,
  checkInLast,
  eventCount
``` |

	FROM
	   spl3.subject,
	   spl3.transactions,
	   spl3.title
	WHERE
	   spl3.subject.bibNumber = spl3.transactions.bibNumber
	     AND spl3.subject.bibNumber = spl3.title.bibNumber
	     AND spl3.subject.subject = 'jazz'
	ORDER BY eventCount DESC

Floor, Count	Return the largest integer value not greater than the argument. Count adds up the number of times an item is present (http://www.w3schools.com/sql/sql_func_count.asp, http://www.w3resource.com/mysql/mathematical-functions/mysql-floor-function.php)

	SELECT
	   FLOOR(deweyClass / 10) * 10 AS Dewey, COUNT(deweyClass) AS Count
	FROM
	   spl3._rawXmlDataCheckOuts
	WHERE
	   deweyClass > 0
	GROUP BY FLOOR(deweyClass / 10) * 10
	ORDER BY COUNT(deweyClass) DESC
	LIMIT 200;
	
	SELECT
	   FLOOR(deweyClass / 10) * 10 AS Dewey, COUNT(deweyClass) AS Count
	FROM
	   spl3.deweyClass
	WHERE
	   deweyClass > 0
	GROUP BY FLOOR(deweyClass / 10) * 10
	ORDER BY COUNT(deweyClass) DESC
	LIMIT 200;

Dewey 780-790	Return the search within range of > and <. Group by. Order by

	SELECT
	   deweyClass AS Dewey, COUNT(deweyClass) AS Count
	FROM
	   spl3._rawXmlDataCheckOuts
	WHERE
	   deweyClass > 780 and deweyClass < 790
	GROUP BY deweyClass
	ORDER BY COUNT(deweyClass) DESC
	LIMIT 200;
	
	SELECT
	   deweyClass AS Dewey, COUNT(deweyClass) AS Count
	FROM
	   spl3. deweyClass
	WHERE
	   deweyClass > 780 and deweyClass < 790

	GROUP BY deweyClass ORDER BY COUNT(deweyClass) DESC
Dewey Non-Dewey	Return CD media type in both dewey and non-dewey categories.

	SELECT
	  title, deweyClass, itemtype
	FROM
	  spl3._rawXmlDataCheckIns
	WHERE
	  itemtype = 'accd'
	LIMIT 100
	
	SELECT DISTINCT
	  title, itemtype
	FROM
	  spl3.title,
	  spl3.itemType
	WHERE
	  itemtype = 'accd'
	    AND spl3.title.bibNumber = spl3.title.bibNumber
	LIMIT 100

Innerjoin, Subject	Return by count and subject (descriptive keywords)

	SELECT
	  deweyClass AS Dewey, COUNT(deweyClass) AS Count, subject
	FROM
	  spl3._rawXmlDataCheckOuts,
	  spl3.subject
	WHERE
	  spl3._rawXmlDataCheckOuts.bibNumber = spl3.subject.bibNumber and
	deweyClass > 780 and deweyClass < 790
	GROUP BY deweyClass
	ORDER BY COUNT(deweyClass) DESC
	LIMIT 200;

Substring, collectionCode	Return only part of subject by using substring

	SELECT
	  SUBSTRING(collectionCode FROM 1 FOR 1) AS Home,
	  COUNT(SUBSTRING(collectionCode FROM 1 FOR 1)) AS Count
	FROM
	  spl3.collectionCode
	GROUP BY Home
	ORDER BY Count DESC
	
	SELECT
	  SUBSTRING(collectionCode FROM 2 FOR 1) AS Type,
	  COUNT(SUBSTRING(collectionCode FROM 2 FOR 1)) AS Count
	FROM
	  spl3.collectionCode
	GROUP BY Type
	ORDER BY Count DESC
	
	SELECT

| | ```
  SUBSTRING(collectionCode FROM 3) AS Name,
  COUNT(SUBSTRING(collectionCode FROM 3)) AS Count
FROM
  spl3.collectionCode
GROUP BY Name
ORDER BY Count DESC
``` |
| **Case, labels** | Conditional expression that allows for multi-dimensional table. Addition of vertical and top labels |
| | ```
SELECT
  YEAR(checkout) AS Year,
  MONTH(checkout) AS Month,
  SUM(CASE
    WHEN deweyClass >= 640 AND deweyClass < 641 THEN 1
    ELSE 0
  END) AS '640',
  SUM(CASE
    WHEN deweyClass >= 641 AND deweyClass < 642 THEN 1
    ELSE 0
  END) AS '641',
  SUM(CASE
    WHEN deweyClass >= 642 AND deweyClass < 643 THEN 1
    ELSE 0
  END) AS '642',
  SUM(CASE
    WHEN deweyClass >= 643 AND deweyClass < 644 THEN 1
    ELSE 0
  END) AS '643',
  SUM(CASE
    WHEN deweyClass >= 644 AND deweyClass < 645 THEN 1
    ELSE 0
  END) AS '644',
  SUM(CASE
    WHEN deweyClass >= 645 AND deweyClass < 646 THEN 1
    ELSE 0
  END) AS '645',
  SUM(CASE
    WHEN deweyClass >= 646 AND deweyClass < 647 THEN 1
    ELSE 0
  END) AS '646',
  SUM(CASE
    WHEN deweyClass >= 647 AND deweyClass < 648 THEN 1
    ELSE 0
  END) AS '647',
  SUM(CASE
    WHEN deweyClass >= 648 AND deweyClass < 649 THEN 1
    ELSE 0
  END) AS '648',
  SUM(CASE
    WHEN deweyClass >= 649 AND deweyClass < 650 THEN 1
    ELSE 0
  END) AS '649'
FROM
  spl3._rawXmlDataCheckOuts
WHERE
  itemtype = 'acbk'
``` |

	<pre> AND YEAR(checkOut) >= '2009'
AND YEAR(checkOut) < '2015'
GROUP BY MONTH(checkOut) , YEAR(checkOut)
ORDER BY YEAR(checkOut) , MONTH(checkOut)</pre>
"Blade Runner"	Returns bibnumber, checkout, checkin, itemtype for this title
	<pre>SELECT
title, bibNumber, checkout, checkIn, itemType
FROM
spl3._rawXmlDataCheckIns
WHERE
title = 'Blade Runner'
GROUP BY itemType</pre>
"Blade Runner" in DVD	The following query gives completely check-in and check-out information of searching 'Blade Runner' as title and 'acdvd' as media type.
	<pre>SELECT
title, bibNumber, checkout, checkIn
FROM
spl3._rawXmlDataCheckIns
WHERE
title = 'Blade Runner'
AND itemType = 'acdvd'
ORDER BY bibNumber</pre>
	The following query picks one single item from each bibNumber to check their daily performance.
	<pre>SELECT
title,
bibNumber,
barcode,
checkout,
checkIn,
TIMESTAMPDIFF(DAY, checkout, checkIn)
FROM
spl3._rawXmlDataCheckIns
WHERE
barcode = '0010047307185'
OR barcode = '0010060553269'</pre>
	The following query returns one particular item from each bibNumber of Blade Runner in a specific year
	<pre>SELECT
title,
bibNumber,
barcode,
checkout,
checkIn,
TIMESTAMPDIFF(DAY, checkout, checkIn)
FROM
spl3._rawXmlDataCheckIns
WHERE
(barcode = '0010047307185'</pre>

Additional References:

Seattle Public Library Online Database http://seattle.bibliocommons.com/dashboard

MySQL Index http://dev.mysql.com/doc/refman/5.6/en/ix01.html

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