



# **Business Technology Group**

Relational Databases & SQL  
February 25th, 2019



Week 6

### Which topic(s) are you most interested in learning about next?

17 responses




A word cloud visualization centered around the term "DATABASE". The word "DATABASE" is the largest and most prominent, rendered in a bold blue font. Surrounding it are numerous other terms related to database systems, such as "RELATIONAL", "DESIGNER", "DBMS", "SECURITY", "TRANSACTION", "REPLICATION", "LANGUAGE", "COLLECTION", "KEY", "DEVELOPER", "SOFTWARE", "DATA", "MIRRORING", "AVAILABILITY", "NETWORK", "RELATIONSHIP", "LAYOUT", "OPTIMIZATION", "MIGRATION", "ARCHITECTURE", "STORAGE", "CONTENT", "BUSINESS", "RECOVERY", "BACKUP", "RESTORE", "ADMINISTRATION", "INDEX", "DEVELOPMENT", "XML", "TABLE", "DESIGN", "SQL", "ENTITY", "SERVER", "PERFORMANCE", "TYPE", "SYSTEM", "QUERY", and "OBJECT". The words are arranged in various orientations and colors (blue, red, green, orange, purple, black) against a light gray background.

## Registration for Spring 2019

Print 

Planned Schedule Renaissance ▾ for Semester Spring 2019 ▾

 One or more courses in this planned schedule have a time conflict with courses for which you are registered.

TITLE / NUMBER & SECTION	DATES/TIMES	UNITS	STATUS
<b>SOCIAL WEB</b> 05320 A	M W 03:00PM to 04:20PM	12.0	Not Registered
<b>APPLCTN DESGN &amp; DEV</b> 67272 2	T Th 10:30AM to 11:50AM	9.0	Not Registered
<b>APPLCTN DESGN &amp; DEV</b> 67272 E	M 07:30PM to 09:20PM	9.0	Not Registered
<b>IS CONSULTING PROJ</b> 67373 A	M 10:30AM to 12:20PM	12.0	Not Registered
<b>IS CONSULTING PROJ</b> 67373 A	W 10:30AM to 12:20PM	12.0	Not Registered
<b>FUTURE OF DEMOCRACY</b> 84324 A4	T Th 09:00AM to 10:20AM	6.0	Not Registered



### Official Schedule for Spring 2019

TITLE / NUMBER & SECTION	DATES / TIMES	UNITS	STATUS
<b>DES HUMN CENTRD SFTW</b> 05391 A	T Th 12:00PM to 01:20PM	12.0	Registered
<b>STAT GRPHCS &amp; VISUAL</b> 36315 1	M W 12:30PM to 01:20PM	0.0	Registered
<b>STAT GRPHCS &amp; VISUAL</b> 36315 B	F 12:30PM to 01:20PM	9.0	Registered



### Register for a course

Search for a course to register, or type the course number and section below and click 'Register'.

COURSE # SECTION



Register

### Course Renumbering for SCS

Several SCS courses have been renumbered for Fall 2018. The 08- prefix has been combined into the 17- prefix. The content, instructors, and all other aspects of each course remain unchanged. In most cases, only the prefix is changing. Courses where the number is also changing include: 15-421/08-631 Information Security and Privacy (now 17-331/17-631); 08-532/08-632/08-732 Law of Computer Technology (now 17-562 /17-662/17-762); 08-671 Java for Application Programmers (now 17-681); 08-672 J2EE Web Application Development (now 17-682); and 08-722 Data Structures for Application Programmers (now 17-683).

### Summer Course Registration

Summer Registration is now open. View the Schedule of Classes for available courses.

» [Schedule of Classes](#)

## Register

### Register for Course

⚠ By submitting, you will effectively add this course to your Official Spring 2019 Schedule.

You will be registering for the following course for Spring 2019

TITLE / NUMBER & SECTION	UNITS	INSTRUCTOR	MEETINGS
<b>FUTURE OF DEMOCRACY</b> 84324 A4	6.0	John Chin <a href="mailto:jjchin@andrew.cmu.edu">jjchin@andrew.cmu.edu</a>	LOCATION DAYS TIMES BH :: 235A T Th 09:00AM to 10:20AM

▶ Show All Sections

Notes from the Teaching department:

Register

Close

#### Planned Schedule

⚠ One or more courses you are registering for are not in your planned schedule.

TITLE / NUMBER & SECTION

**SOCIAL WEB**  
05320 A

**APPLCTN DES**  
67272 2

**APPLCTN DES**  
67272 E

**IS CONSULTI**  
67373 A

**IS CONSULTI**  
67373 A

**FUTURE OF D**  
84324 A4

#### Official Schedule for Spring 2019

TITLE / NUMBER & SECTION	DATES / TIMES	UNITS	STATUS
<b>DES HUMN CENTRD SFTW</b> 05391 A	T Th 12:00PM to 01:20PM	12.0	Registered
<b>STAT GRPHCS &amp; VISUAL</b> 36315 1	M W 12:30PM to 01:20PM	0.0	Registered
<b>STAT GRPHCS &amp; VISUAL</b> 36315 B	F 12:30PM to 01:20PM	9.0	Registered
<b>SPRTR: DATA MINING</b> 722	T Th	0.0	Registered

Print

type the  
and click

numbered for  
n combined into  
ctors, and all  
ain unchanged.  
hanging.  
changing  
on Security and  
-532/08-632/08-  
(now 17-562  
r Application  
72 J2EE Web  
-682); and 08-  
722 Data Structures for Application Programmers  
(now 17-683).

#### Summer Course Registration

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» [Schedule of Classes](#)

## Register

### Register for Course

**!** You will exceed your maximum units (51.0) if this 6.0 unit course is added. Please contact your advisor.

**You will be registering for the following course for Spring 2019**

TITLE / NUMBER & SECTION	UNITS	INSTRUCTOR	MEETINGS
<b>FUTURE OF DEMOCRACY</b> 84324 A4	6.0	John Chin <a href="mailto:jjchin@andrew.cmu.edu">jjchin@andrew.cmu.edu</a>	LOCATION DAYS TIMES BH :: 235A T Th 09:00AM to 10:20AM

► Show All Sections

Notes from the Teaching department:

Register

Close

#### Official Schedule for Spring 2019

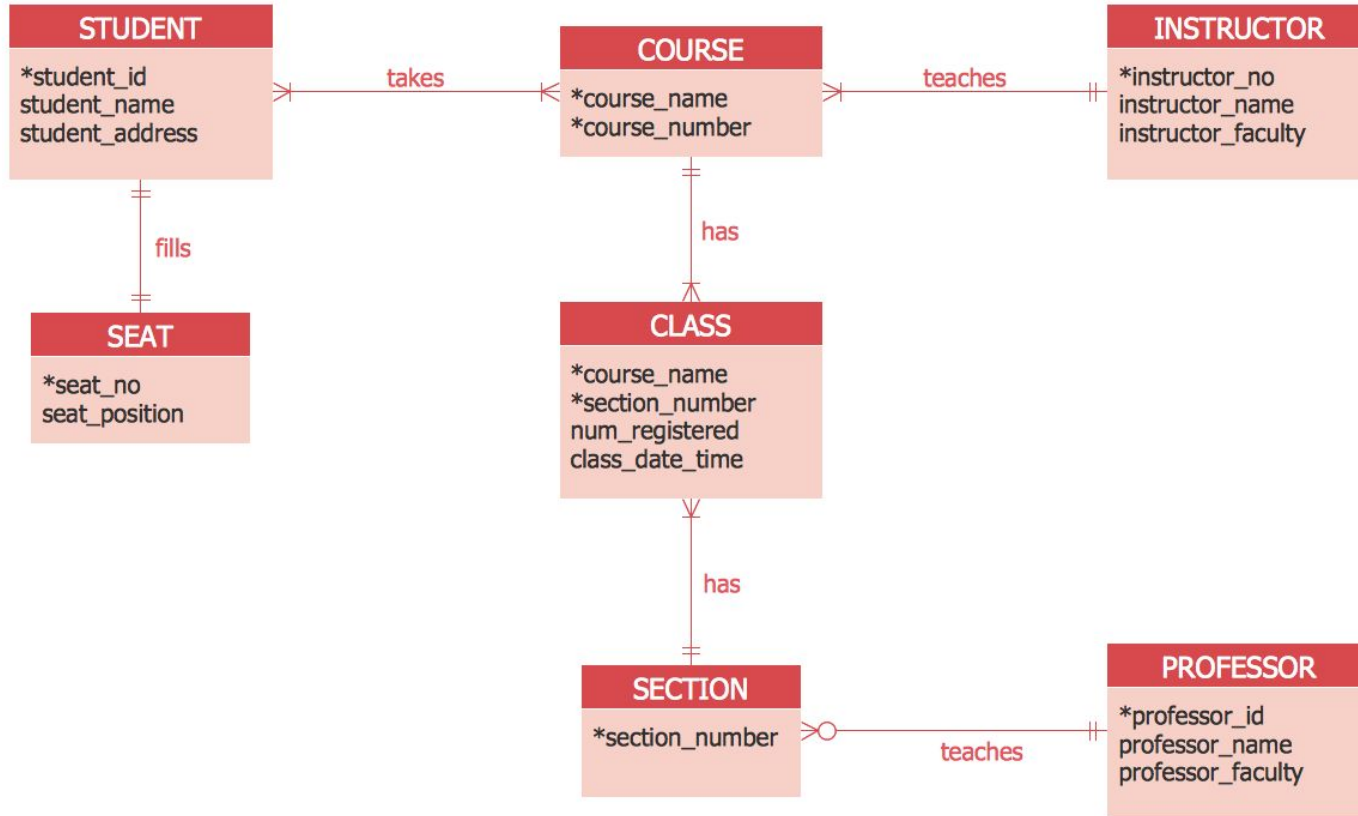
TITLE / NUMBER & SECTION	DATES / TIMES	UNITS	STATUS	
<b>DES HUMN CENTRD SFTW</b> 05391 A	T Th 12:00PM to 01:20PM	12.0	Registered	⚙
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<b>STAT GRPHCS &amp; VISUAL</b> 36315 B	F 12:30PM to 01:20PM	9.0	Registered	⚙
<b>SPRINT DATA MINING</b> 722	T Th	0.0	Registered	⚙

722 Data Structures for Application Programmers (now 17-683).

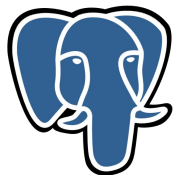
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» [Schedule of Classes](#)





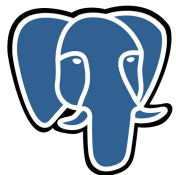


PostgreSQL



ORACLE®





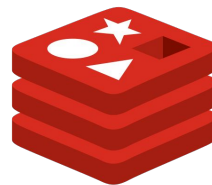
PostgreSQL



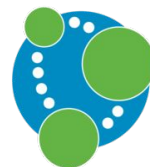
ORACLE®



mongoDB®



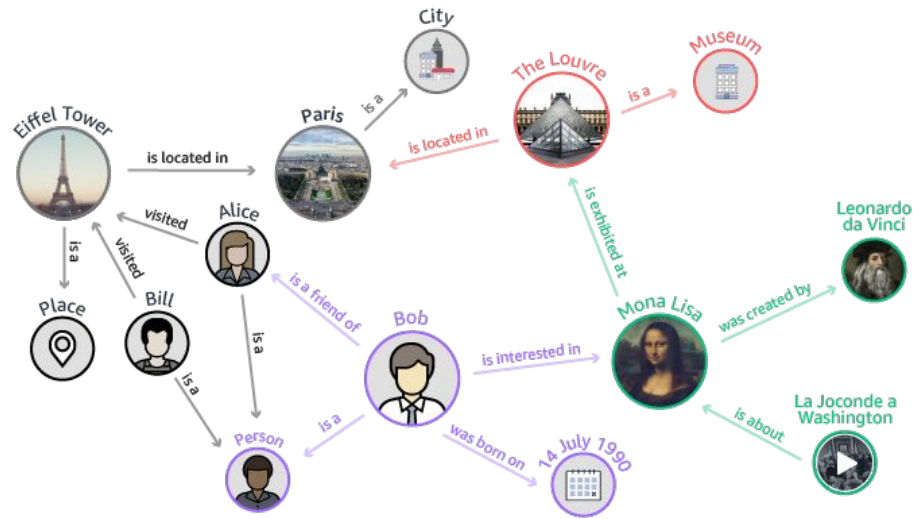
redis

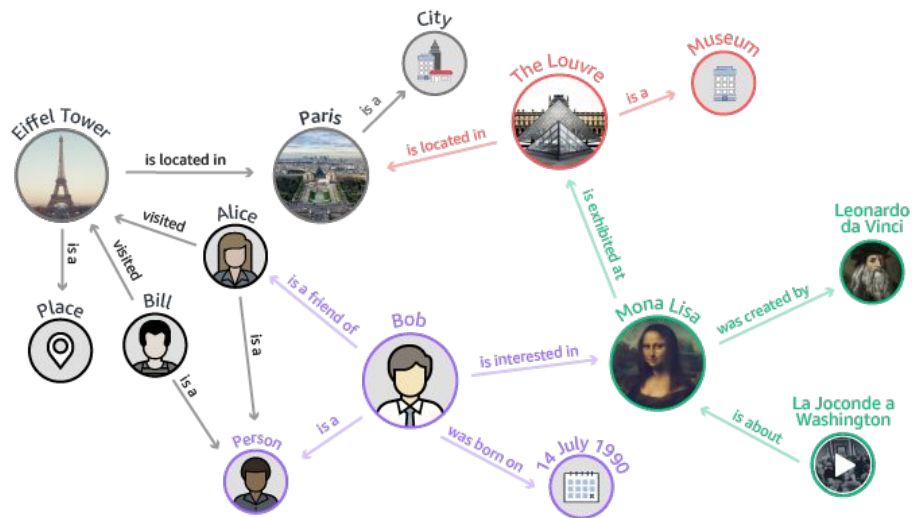


neo4j

SQL

NoSQL







## COMPOSE QUERY

Query History

Job History

## ▼ Public Datasets

- ▶ gdel-bq:hathitrustbooks
- ▶ gdel-bq:internetarchivebooks
- ▶ googledata:buganizer
- ▶ googledata:forbin
- ▶ googledata:sponge
- ▶ googledata:spore
- ▶ lookerdata:cdc
- ▶ nyc-tlc:green
- ▶ nyc-tlc:yellow

## New Query ?

Query Editor

UDF Editor

✕

SQL

```
1 SELECT
2   name, count(1) as num_repos
3 FROM
4   `bigquery-public-data.github_repos.languages`, UNNEST(language)
5 GROUP BY name
6 ORDER BY num_repos
7 DESC limit 5
```

Standard SQL Dialect ✕

Ctrl + Enter: run query, Tab or Ctrl + Space: autocomplete.

RUN QUERY ▼

Save Query

Save View

Format Query

Show Options



Results

Explanation

Job Information

Download as CSV

Download as JSON

Save as Table

Save to Google Sheets

Row	name	num_repos	
1	JavaScript	987058	
2	CSS	728255	
3	HTML	642442	
4	Shell	583400	
5	Python	484622	

Table JSON



Impala



Joins

Add a description...



Assistant

Functions

&lt; u\_omain

## Tables

(20)

account\_sfnew

brinetest1

doc\_feedback\_aug

free\_logs

customerkey (string)

clustername (string)

collectiontimestamp (bigint)

service (string)

roletypestr (string)

role (string)

host (string)

filename (string)

ts (bigint)

dt (string)

level (string)

class (string)

message (string)

year (int)

month (int)

free\_logs\_2016\_06

hue\_commits

id (string)

author (string)

date (string)

title (string)

jira\_\_c

marktable

query\_impala

queryresult

queryresultfromsfdc

sfdcqueryresult

tes\_ux

test

testresult

ticket

ticket2

ticket3

ticket4

Some high risks were detected.

4.33s u\_omain text ?

```
57
58
59 -- the objective is to find the JIRAS in Hue where there are multiple SFDC tickets linked
60 -- it reveals the soft spots in the product
61
62
63 SELECT sfdc.jira__c.name,
64        sfdc.jira__c.jira_summary__c,
65        count(jira__c.name) AS tickets
66 FROM sfdc.cases, sfdc.jira__c, jira.ticket
67 WHERE sfdc.cases.component__c IN ('Hue')
68 AND sfdc.jira__c.case__c = sfdc.cases.id
69 AND jira.ticket.issuekey = sfdc.jira__c.name
70 AND jira.ticket.statusname NOT IN ('Resolved', 'Closed')
71 AND sfdc.jira__c.name NOT LIKE 'CLRX'
72 GROUP BY jira__c.name, jira__c.jira_summary__c
73 HAVING count(jira__c.name) > 3
74 ORDER BY count(jira__c.name) DESC
75
```



component

Hue

type

Escalation

date

2016-10-01

```
Query f14943255718fdaa:c0f9810e00000000: 94% Complete (386 out of 389)
Query f14943255718fdaa:c0f9810e00000000: 99% Complete (386 out of 389)
Query f14943255718fdaa:c0f9810e00000000: 99% Complete (386 out of 389)
Query f14943255718fdaa:c0f9810e00000000: 99% Complete (386 out of 389)
Query f14943255718fdaa:c0f9810e00000000: 100% Complete (389 out of 389)
```

Query History

Saved Queries

Results (19)



	name	jira_summary__c	tickets
1	CDH-45011	Improve interaction between Hue and Impala	66
2	CDH-51313	Tracking Jira document2 upgrade 5.7 and below to 5.8 and above	47
3	OPSAPS-25666	Offer option in add service wizard to automatically set as a dependency for another service	16
4	CDH-46194	Security analysis for Hue security Jiras	15
5	CDH-46197	Improve integration between Hue and HiveServer2	14
6	OPSAPS-27028	Ease of Embedded DB Causing Frustration and Database Migration Asks	11
7	OPSAPS-39656	Hue needs Load Balancer parameter for SPNEGO auth	10
8	OPSAPS-28330	We should automatically add the value of ldap_username in Hue to hive and Impala proxy users	8
9	OPSAPS-24974	Add LDAP Properties for HS2 and Impala to Hue	8

## Tables

Statement 5/5

jira\_\_c

cases

ticket

## Suggestions

Query on partitioned table is missing filters on partitioning columns.

Rewrite query to add filtering conditions.

Improve Analysis

```
In [12]: %%sql result_set <<
SELECT query_id, state, query
FROM runtime.queries
LIMIT 2

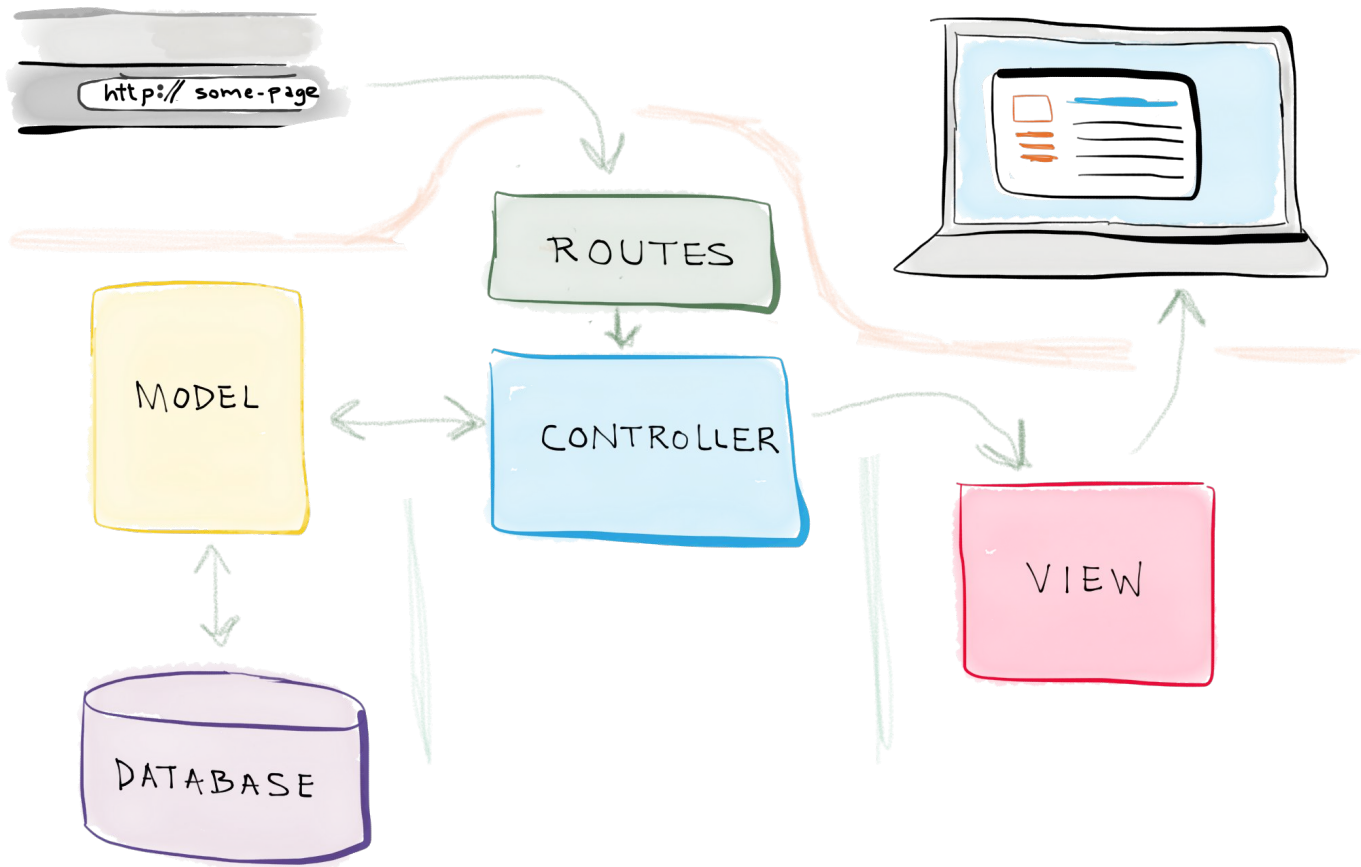
* presto://user@localhost:8080/system
Returning data to local variable result_set
```

```
In [13]: result_set
```


```
Out[13]:
```

	query_id	state	query
	20180526_112110_00001_nwiis	FINISHED	select * from runtime.queries
	20180526_112215_00004_nwiis	FAILED	SHOW COLUMNS FROM "select * from queries limit 1"





## SQL Developer Salaries in the United States

Salary estimated from 14,910 employees, users, and past and present job advertisements on Indeed   
in the past 12 months. Last updated: September 25, 2017

Location

United States

Average salary

**\$85,602** per year



Salaries are also available in [hourly](#), [daily](#), [weekly](#) and [monthly](#)

### Popular Companies

Average Salary

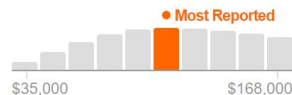
Salary Distribution

#### Microsoft

6 salaries reported

[Microsoft Jobs](#) - [Reviews](#) - [Salaries](#)

**\$145,669** per year



#### Access Staffing LLC

70 salaries reported

[Access Staffing LLC Jobs](#) - [Reviews](#) - [Salaries](#)

**\$113,657** per year



#### GlaxoSmithKline

7 salaries reported

[GlaxoSmithKline Jobs](#) - [Reviews](#) - [Salaries](#)

**\$59.82** per hour



SELECT	<columns> .....	5
FROM	<table> .....	1
JOIN	<table_2> ON <predicate> .....	1
WHERE	<predicate on rows> .....	2
GROUP BY	<columns> .....	3
HAVING	<predicate on groups> .....	4
ORDER BY	<columns> .....	6

# Hands-On Time

[tinyurl.com/sqlidem](https://tinyurl.com/sqlidem)

[tinyurl.com/btg-s19-sql](https://tinyurl.com/btg-s19-sql)