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CS130 Databases

Lab 4 Report

Q1: Write a query to list all of the downloads which occurred on the 21st of January 2017.

SQL Language:

SELECT downloadts FROM cs130_2017_lab4
WHERE date_part('day', downloadts)=21
AND date_part('month', downloadts)=1
AND date_part('year', downloadts)=2017

Running result: *5 rows returned*

Query Editor | Query History

```
1  SELECT downloadts FROM cs130_2017_lab4
2  WHERE date_part('day', downloadts)=21
3  AND date_part('month', downloadts)=1
4  AND date_part('year', downloadts)=2017
```

Data Output | Explain | Messages

	downloadts timestamp without time zone
1	2017-01-21 01:45:59
2	2017-01-21 17:48:57
3	2017-01-21 07:28:49
4	2017-01-21 21:59:28
5	2017-01-21 22:36:12

```
Successfully run. Total query runtime: 86 msec.
5 rows affected.
```

Q2: Write a query to list all of the downloads which occurred on the 13th of December 2016.

SQL Language:

SELECT downloadts FROM cs130_2017_lab4 WHERE
date_part('day', downloadts)=13
AND date_part('month', downloadts)=12
AND date_part('year', downloadts)=2016

Running result: *9 rows returned*

Query Editor | Query History

```
1  SELECT downloadts FROM cs130_2017_lab4 WHERE
2  date_part('day', downloadts)=13
3  AND date_part('month', downloadts)=12
4  AND date_part('year', downloadts)=2016
```

Data Output | Explain | Messages

	downloadts timestamp without time zone
1	2016-12-13 00:40:55
2	2016-12-13 00:37:24
3	2016-12-13 05:11:47
4	2016-12-13 08:03:12
5	2016-12-13 17:41:38

```
Successfully run. Total query runtime: 87 msec.
9 rows affected.
```

Q3: Select all file downloads where the user_agent contains the terms ubuntu linux firefox in this order but may be separated by different numbers of characters.

SQL Language:

*SELECT * FROM cs130_2017_lab4 WHERE*

user_agent ~'ubuntu.*linux.*firefox'*

Running result: *87 rows returned*

Query Editor Query History

```
1  SELECT * FROM cs130_2017_lab4 WHERE
2  user_agent ~*'ubuntu.*linux.*firefox'
```

Data Output Explain Notifications

	downloadid integer	filename text	downloadts timestamp w	filesize numeric	appname text	ip_address character va	user_agent text
1	-3999	augue v...	2016-03-0...	215.40	Gembuc...	183.39.1...	Mozilla/5.0 (X11; Ubuntu; Linux armv7l; rv:17.0) Gecko/20100101 Firefox/1...
2	-3937	vel sem...	2016-01-3...	496.28	Alpha	46.166.2...	Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:21.0) Gecko/20130331 Firefox/...
3	13	nisi vol...	2017-07-0...	124.19	Andalax	197.255....	Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:17.0) Gecko/20100101 Firefox/...
4	-3922	pellente...	2016-06-1...	403.64	Bitchip	185.69.1...	Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:24.0) Gecko/20100101 Firefox/...
5	-3814	luctus.avi	2016-10-1...	11.35	Lotstring	149.27.1...	Mozilla/5.0 (X11; Ubuntu; Linux i686; rv:15.0) Gecko/20100101 Firefox/15....

Messages

```
Successfully run. Total query runtime: 118 msec.
87 rows affected.
```

Q4: WebKit is a layout engine software component for rendering web pages in web browsers. It powers Apple's Safari web browser. In the user agent file the AppleWebKit is written as AppleWebKit/digits.digits.digits OR just AppleWebKit/digits.digits. Write a query to find all downloads where AppleWebKit is found in the user agent where there digits.digits.digits after it.

SQL Language:

*SELECT * FROM cs130_2017_lab4 WHERE*

user_agent ~' AppleWebKit/d\+\.\d+\.d+'*

Running result: *784 rows returned*

Query Editor Query History

```
1  SELECT * FROM cs130_2017_lab4 WHERE
2  user_agent ~*'AppleWebKit/\d+\.\d+\.\d+'
```

Data Output Explain Notifications

	downloadid integer	filename text	downloadts timestamp w	filesize numeric	appname text	ip_address character va	user_agent text
1	-3997	quisque...	2017-04-1...	28.94	Ronstring	119.161....	Mozilla/5.0 (iPhone; U; CPU iPhone OS 4_2_1 like Mac OS X; ru-ru) AppleWebKit/533.17.9 (KHTML, l...
2	-3996	morbi u...	2017-08-2...	93.77	Namfix	218.205....	Mozilla/5.0 (iPhone; U; fr; CPU iPhone OS 4_2_1 like Mac OS X; fr) AppleWebKit/533.17.9 (KHTML, li...
3	-3987	condim...	2017-08-0...	394.54	Sonair	55.107.2...	Mozilla/5.0 (Macintosh; U; PPC Mac OS X 10_5_8; ja-jp) AppleWebKit/533.20.25 (KHTML, like Geck...
4	-3981	felis.mp3	2017-04-2...	354.55	Viva	100.65.1...	Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US) AppleWebKit/533.19.4 (KHTML, like Gecko) Versi...
5	-3977	sem fu...	2017-06-0...	285.55	Gembuc...	33.200.1...	Mozilla/5.0 (Windows; U; Windows NT 6.0; en-US) AppleWebKit/533.20.25 (KHTML, like Gecko) Ver...

Messages

```
Successfully run. Total query runtime: 180 msec.
784 rows affected.
```

Q5: Write a query to list all downloads which occurred on any Sunday in 2016. The user agent string in these downloads should contain Googlebot/2.1.

SQL Language:

SELECT downloadts,user_agent FROM cs130_2017_lab4 WHERE

EXTRACT(DOW FROM downloadts)=0 AND date_part('year',downloadts)=2016

AND user_agent ~'Googlebot/2\.1'

Running result: *4 rows returned*

Query Editor Query History

```
1  SELECT downloadts,user_agent FROM cs130_2017_lab4 WHERE
2  EXTRACT(DOW FROM downloadts)=0 AND date_part('year',downloadts)=2016
3  AND user_agent ~'Googlebot/2\.1'
```

Data Output Explain Notifications

	downloadts timestamp without time	user_agent text
1	2016-10-02 08:04:26	Googlebot/2.1 (+http://www.google.com/bot.html)
2	2016-05-01 00:34:49	Googlebot/2.1 (+http://www.googlebot.com/bot.html)
3	2016-12-11 03:01:58	Googlebot/2.1 (+http://www.google.com/bot.html)
4	2016-04-10 02:01:19	Googlebot/2.1 (+http://www.googlebot.com/bot.html)

Messages

```
Successfully run. Total query runtime: 112 msec.
4 rows affected.
```

Q6: Write a query to list all downloads where the filename starts and ends with a vowel and the extension is .mpeg.

SQL Language:

SELECT filename,downloadts FROM cs130_2017_lab4 WHERE
filename~'^[aeiou].*[aeiou]\.mpeg$'*

Running result: *36 rows returned*

Query Editor | Query History

```
1  SELECT filename,downloadts FROM cs130_2017_lab4 WHERE
2  filename~*'^[aeiou].*[aeiou]\.mpeg$'
```

Data Output | Explain | Notifications | Messages

	filename text	downloadts timestamp without time zone
1	a pede posuere.mpeg	2016-09-03 02:11:28
2	aliquet maecenas leo.mpeg	2017-06-21 01:33:54
3	est lacinia nisi.mpeg	2017-03-20 11:39:53
4	orci vehicula.mpeg	2016-01-10 10:24:42
5	eu.mpeg	2017-07-17 07:39:15

```
Successfully run. Total query runtime: 86 msec.
36 rows affected.
```

Q7: Write a query to list all downloads where the whole filename (name and extension) DOES NOT contain any vowels.

SQL Language:

SELECT filename,downloadts FROM cs130_2017_lab4 WHERE
filename~'^[^aeiou]+$'*

Running result: *7 rows returned*

Query Editor | Query History

```
1  SELECT filename,downloadts FROM cs130_2017_lab4 WHERE
2  filename~*'^[^aeiou]+$'
```

Data Output | Explain | Notifications | Messages

	filename text	downloadts timestamp without time
1	btf.qt	2016-06-08 21:59:09
2	Gdr.mp3	2017-09-14 03:28:06
3	TTRP.MP3	2017-02-19 13:12:00
4	3dr678.mp3	2017-08-03 00:03:18
5	WWW.mp3	2017-05-11 22:50:05

```
Successfully run. Total query runtime: 85 msec.
7 rows affected.
```

Q8: Write a query which lists all downloads where the app name has an even number of characters, the whole filename has an even number of characters and the file is an MP3 file.

SQL Language:

SELECT filename,appname FROM cs130_2017_lab4 WHERE
CHAR_LENGTH(appname)%2=0
AND CHAR_LENGTH(filename)%2=0 AND filename ~'\.mp3'*

Running result: *612 rows returned*

Query Editor | Query History

```
1  SELECT filename,appname FROM cs130_2017_lab4 WHERE
2  CHAR_LENGTH(appname)%2=0
3  AND CHAR_LENGTH(filename)%2=0 AND filename ~*'\.mp3'
```

Data Output | Explain | Notifications | Messages

Successfully run. Total query runtime: 85 msec.
612 rows affected.

	filename text	appname text
1	leo odio.mp3	Vagram
2	at dolor.mp3	Keylex
3	rutrum.mp3	It
4	lacinia sapien.mp3	Domainer
5	et.mp3	Zaam-Dox

Q9: Write a query to list all of the app names where the name of these apps is composed ONLY OF vowel characters.

SQL Language:

SELECT appname FROM cs130_2017_lab4 WHERE
appname ~'^[aeiou]+$'*

Running result: *9 rows returned*

Query Editor | Query History

```
1  SELECT appname FROM cs130_2017_lab4 WHERE
2  appname ~*'^[aeiou]+$'
```

Data Output | Messages

Successfully run. Total query runtime: 81 msec.
9 rows affected.

	appname text
1	UAE
2	IOU
3	auauie
4	uoae
5	aaooaaoo

Q10: It is suspected that a group of hackers called the 42Group have managed to break into the file download system and corrupt specific files. Only specific files are corrupted. These files are those files which have a download timestamp where all parts of the timestamp (Excluding the year) add to the number 42. The 42Group attacks did not happen in 2016 but happened in all other years. Write a query to identify these files.

SQL Language:

SELECT downloadts FROM cs130_2017_lab4 WHERE
date_part('month',downloadts)+
date_part('day',downloadts)+
date_part('hour',downloadts)+
date_part('minute',downloadts)+
date_part('second',downloadts)=42
AND date_part('year',downloadts)!=2016

Running result: *10 rows returned*

Query Editor Query History

```
SELECT downloadts FROM cs130_2017_lab4 WHERE
date_part('month',downloadts)+
date_part('day',downloadts)+
date_part('hour',downloadts)+
date_part('minute',downloadts)+
date_part('second',downloadts)=42
AND date_part('year',downloadts)!=2016
```

Data Output Explain

	downloadts timestamp without time zone
1	2017-02-06 23:07:04
2	2017-02-20 03:02:15
3	2017-06-22 04:10:00
4	2017-06-03 15:07:11
5	2017-05-02 04:26:05

Messages

```
Successfully run. Total query runtime: 77 msec.
10 rows affected.
```

Q11: Select all file downloads where the filesize is greater or equal to 400mb, the hour of the download timestamp is a prime number, the day of the download timestamp is a prime number and the month of the download timestamp is a prime number.

SQL Language:

SELECT downloadts FROM cs130_2017_lab4 WHERE
filesize>=400
AND date_part('hour',downloadts)in(2,3,5,7,11,13,17,19,23)
AND date_part('day',downloadts)in(2,3,5,7,11,13,17,19,23,29,31)
AND date_part('month',downloadts)in(2,3,5,7,11)

Running result: *55 rows returned*

Query Editor Query History

```
SELECT downloadts FROM cs130_2017_lab4 WHERE
filesize>=400
AND date_part('hour',downloadts)in(2,3,5,7,11,13,17,19,23)
AND date_part('day',downloadts)in(2,3,5,7,11,13,17,19,23,29,31)
AND date_part('month',downloadts)in(2,3,5,7,11)
```

Data Output Explain

	downloadts timestamp without time zone
1	2016-02-23 23:13:23
2	2016-07-05 02:36:39
3	2016-03-13 07:48:18
4	2016-11-03 05:20:10
5	2016-07-13 02:10:43

Messages

```
Successfully run. Total query runtime: 88 msec.
55 rows affected.
```

Q12: Select all file downloads where the log to the base 10 of the number of characters in the appname is equal to the log to the base 10 of the number of characters in the IP Address and the filesize is greater or equal to 100MB.

SQL Language:

*SELECT * FROM cs130_2017_lab4*
WHERE LOG(char_length(appname))=LOG(char_length(IP_Address))
AND filesize >=100

Running result: *18 rows returned*

Query Editor Query History

```
SELECT * FROM cs130_2017_lab4
WHERE LOG(char_length(appname))=LOG(char_length(IP_Address))
AND filesize >=100
```

Data Output Explain Notifications

	downloadid integer	filename text	downloadts timestamp without time	filesize numeric	appname text	ip_address character va	user_agent text
1	-3993	ipsum primis in.mpeg	2017-05-07 11:39:53	390.96	Mat Lam Tam	101.81.7....	Mozilla/5.
2	-3979	orci luctus et.mp3	2016-08-19 10:31:15	114.65	Ventosanzap	105.30.7...	Mozilla/5.
3	-3123	odio elementum eu.mpeg	2017-06-02 09:17:25	434.43	Ventosanzap	80.138.9...	Mozilla/5.
4	-3101	penatibus et magnis.avi	2016-03-12 09:52:38	334.80	Trippledex	61.28.1.88	Mozilla/5.
5	-2679	parturient.mp3	2016-02-14 20:30:56	421.40	Solarbreeze	10.53.26....	Mozilla/5.

Messages

```
Successfully run. Total query runtime: 97 msec.
18 rows affected.
```