

Name: Adithya Srinivasa

UHID: 1430872

Date: 11/21/2016

1) All Gyms **or** Pokestops Within 5 Miles **from** Main Campus - Coordinate
[[29.7199489,-95.3422334]](within 5 miles)

Query:

```
SELECT name,( 3959 * acos( cos( radians(29.7199489) ) * cos( radians( lat ) ) *  
cos( radians( lng ) - radians(-95.3422334) ) + sin( radians(29.7199489) ) * sin(  
radians(lat)))) AS distance,lat,lng,nodeType  
FROM pokemongo_hive  
WHERE ( 3959 * acos( cos( radians(29.7199489) ) * cos( radians( lat ) ) *  
cos( radians( lng ) - radians(-95.3422334) ) + sin( radians(29.7199489) ) * sin(  
radians(lat)))) < 5  
GROUP BY name,lat,lng,nodeType  
ORDER BY distance;
```

Result:

```
Stage-Stage-2: Map: 1 Reduce: 1 Cumulative CPU: 1.86 sec HDFS Read: 65617 HDFS Write: 70525 SUCCESS  
Total MapReduce CPU Time Spent: 6 seconds 0 msec  
OK  
University of Houston Seal 0.02460489839623962 29.719841 -95.34184 Pokestops  
Lynn Eusan Memorial Park 0.028519410584817082 29.719637 -95.342545 Pokestops  
American Star 0.04282028158193546 29.719366 -95.342476 Pokestops  
University of Houston * 0.04564095716383428 29.720173 -95.34295 Pokestops  
University of Houston * 0.06611122296721367 29.71945 -95.34129 Pokestops  
University of Houston * 0.0690107250763237 29.720844 -95.34274 Pokestops  
University of Houston * 0.07061543086685097 29.719967 -95.34106 Pokestops  
University of Houston * 0.07225360082932383 29.7202 -95.341064 Pokestops  
UH Hilton Atrium 0.07966113147051147 29.718971 -95.34153 Pokestops  
The Statue of Four Lies 0.09995837455153157 29.71859 -95.342804 Pokestops  
University of Houston Framework Map 0.10018083430428978 29.720442 -95.3438 Pokestops  
University of Houston * 0.10600317076153745 29.721151 -95.34333 Pokestops  
University of Houston * 0.1083921494009906 29.721375 -95.34299 Pokestops  
Bronze Cougar #2 0.11483156113292506 29.719976 -95.34415 Pokestops  
Ezekiel W Cullen Building 0.11810538173159815 29.720545 -95.34408 Pokestops  
Cube Geysers 0.11918360724652445 29.719595 -95.34418 Pokestops  
Sesquicentennial Roses 0.11977307147168871 29.720476 -95.34033 Pokestops  
The Eternal Flame of Service 0.12527022317167752 29.719646 -95.34429 Gyms  
Student Service Center 1 0.13253578414778336 29.718855 -95.34405 Pokestops  
9/11 World Trade Centers Memorial 0.14310118766793525 29.719446 -95.33992 Pokestops  
Roy Cullen Memorial 0.14615107157055995 29.72006 -95.344666 Pokestops  
Phillip Guthrie Hoffman Memorial Hall 0.15113973370379066 29.72172 -95.34371 Pokestops  
Cougar Village 2 Mosaic 0.15649350017945995 29.71799 -95.343544 Pokestops  
Double Physchomle, 2005 0.15943814760480907 29.719027 -95.3398 Pokestops  
Cullen Fountain 0.16522421123004033 29.720755 -95.344826 Pokestops  
Roy G Cullen Building 0.16846544509020345 29.720144 -95.34503 Pokestops  
Cougar Village 0.16906920499522995 29.717567 -95.34288 Pokestops  
Moody Towers 3D Art 0.17135128353968793 29.71747 -95.34215 Pokestops  
University of Houston Cougar Band Memorial 0.18258268123183755 29.717396 -95.34302 Pokestops  
Agnes Arnold Hall 0.18302370272861296 29.721933 -95.34425 Pokestops  
C. T. Bauer College of Business 0.18359740883421516 29.720938 -95.33939 Pokestops  
Twisted Drill 0.18516584146645274 29.722082 -95.3441 Pokestops  
Affirmative Action Building 0.18518313237869077 29.7177 -95.34391 Pokestops  
Old Science Building 0.18688722816794504 29.721579 -95.34472 Pokestops  
A.D. Bruce Religion Center 0.18731070199658229 29.719343 -95.345276 Pokestops  
Moody Towers 0.18792334589542925 29.717339 -95.341354 Pokestops  
Stephen Power Farish Hall Building 0.18948378807760194 29.721039 -95.34513 Pokestops  
Michael J. Cemo Hall * 0.19307344695351586 29.721653 -95.33968 Pokestops  
University Welcome Center 0.19553752601361163 29.718561 -95.33939 Pokestops  
Genkl 0.19709206221925873 29.718277 -95.344894 Pokestops  
Science Building 0.20346136763255349 29.721552 -95.34508 Pokestops  
Taub Residency Hall 0.21136449664407203 29.718239 -95.34515 Pokestops  
University of Houston * 0.22051553610094146 29.721933 -95.339355 Pokestops  
University of Houston * 0.2350562092716927 29.72335 -95.34219 Pokestops  
University of Houston * 0.24085149182575105 29.720783 -95.34613 Pokestops  
University of Houston * 0.24134663995674507 29.721676 -95.33874 Gyms  
Oberholtzer Hall 0.24360721334717042 29.718384 -95.34587 Pokestops  
Lamar Fleming Jr. Building 0.2499629572222373 29.721792 -95.34582 Gyms  
Mujer Con Las Manos Cruzadas 0.2553654194262757 29.721403 -95.346146 Pokestops  
McElhinney Hall 0.2581122911324589 29.72117 -95.3463 Pokestops  
Bates Hall 0.2695222594998264 29.718721 -95.3465 Pokestops  
University of Houston * 0.2867408420078381 29.72404 -95.34304 Pokestops  
0.2943446167300491 29.724113 -95.3412 Pokestops
```

2) **ALL** Pokestops within 5 Miles **from** Main Campus - Coordinate [[29.7199489,-95.3422334]](within 5 miles)

Query:

```
SELECT name,( 3959 * acos( cos( radians(29.7199489) ) * cos( radians( lat ) ) *  
cos( radians( lng ) - radians(-95.3422334) ) + sin( radians(29.7199489) ) * sin(  
radians(lat)))) AS distance,nodeType  
FROM pokemongo_hive  
WHERE ( 3959 * acos( cos( radians(29.7199489) ) * cos( radians( lat ) ) *  
cos( radians( lng ) - radians(-95.3422334) ) + sin( radians(29.7199489) ) * sin(  
radians(lat)))) < 5 AND nodeType="Pokestops"  
GROUP BY name,lat,lng,nodeType  
ORDER BY distance;
```

Name: Adithya Srinivasa

UHID: 1430872

Date: 11/21/2016

University of Houston Seal	0.02460489839623962	Pokestops
Lynn Eusan Memorial Park	0.028519410584817082	Pokestops
American Star	0.04282028158193546	Pokestops
University of Houston *	0.04564095716383428	Pokestops
University of Houston *	0.06611122296721367	Pokestops
University of Houston *	0.0690107250763237	Pokestops
University of Houston *	0.07061543086685097	Pokestops
University of Houston *	0.07225360082932383	Pokestops
UH Hilton Atrium	0.07966113147051147	Pokestops
The Statue of Four Lies	0.09995837455153157	Pokestops
University of Houston Framework Map	0.10018083430428978	Pokestops
University of Houston *	0.10600317076153745	Pokestops
University of Houston *	0.1083921494009906	Pokestops
Bronze Cougar #2	0.11483156113292506	Pokestops
Ezekiel W Cullen Building	0.11810538173159815	Pokestops
Cube Geysers	0.11918360724652445	Pokestops
Sesquicentennial Roses	0.11977307147168871	Pokestops
Student Service Center 1	0.13253578414778336	Pokestops
9/11 World Trade Centers Memorial	0.14310118766793525	Pokestops
Roy Cullen Memorial	0.14615107157055995	Pokestops
Phillip Guthrie Hoffman Memorial Hall	0.15113973370379066	Pokestops
Cougar Village 2 Mosaic	0.15649350017945995	Pokestops
Double Physchomie, 2005	0.15943814760480907	Pokestops
Cullen Fountain	0.16522421123004033	Pokestops
Roy G Cullen Building	0.16846544509020345	Pokestops
Cougar Village	0.16906920499522995	Pokestops
Moody Towers 3D Art	0.17135128353968793	Pokestops
University of Houston Cougar Band Memorial	0.18258268123183755	Pokestops
Agnes Arnold Hall	0.18302370272861296	Pokestops
C. T. Bauer College of Business	0.18359740883421516	Pokestops
Twisted Drill	0.18516584146645274	Pokestops
Affirmative Action Building	0.18518313237869077	Pokestops
Old Science Building	0.18688722816794504	Pokestops
A.D. Bruce Religion Center	0.18731070199658229	Pokestops
Moody Towers	0.18792334589542925	Pokestops
Stephen Power Farish Hall Building	0.18948378807760194	Pokestops
Michael J. Cemo Hall *	0.19307344695351586	Pokestops
University Welcome Center	0.19553752601361163	Pokestops
Genki	0.19709206221925873	Pokestops
Science Building	0.20346136763255349	Pokestops
Taub Residency Hall	0.21136449664407203	Pokestops
University of Houston *	0.22051553610094146	Pokestops
University of Houston *	0.2350562092716927	Pokestops
University of Houston *	0.24085149182575105	Pokestops
Oberholtzer Hall	0.24360721334717042	Pokestops
Mujer Con Las Manos Cruzadas	0.2553654194262757	Pokestops
McElhinney Hall	0.2581122911324589	Pokestops
Bates Hall	0.2695222594998264	Pokestops
University of Houston *	0.2867408420078381	Pokestops
	0.2943446167300491	Pokestops

Name: Adithya Srinivasa

UHID: 1430872

Date: 11/21/2016

3) **ALL** Gyms within 5 Miles **from** Main Campus - Coordinate [[29.7199489,-95.3422334]](within 5 miles)

Query:

```
SELECT name,( 3959 * acos( cos( radians(29.7199489) ) * cos( radians( lat ) ) *  
cos( radians( lng ) - radians(-95.3422334) ) + sin( radians(29.7199489) ) * sin(  
radians(lat)))) AS distance,nodeType  
FROM pokemongo_hive  
WHERE ( 3959 * acos( cos( radians(29.7199489) ) * cos( radians( lat ) ) *  
cos( radians( lng ) - radians(-95.3422334) ) + sin( radians(29.7199489) ) * sin(  
radians(lat)))) < 5 AND nodeType="Gyms"  
GROUP BY name,lat,lng,nodeType  
ORDER BY distance;
```

Name: Adithya Srinivasa

UHID: 1430872

Date: 11/21/2016

The Eternal Flame of Service	0.12527022317167752	Gyms	
University of Houston *	0.24134663995674507	Gyms	
Lamar Fleming Jr. Building	0.2499629572222373	Gyms	
(unknown)	0.3537628216836396	Gyms	
UH Football Stadium North Entrance	0.39685192961045523	Gyms	
(unknown)	0.4576654035139143	Gyms	
(unknown)	0.5827273934178825	Gyms	
Christian Home Missionary Baptist	0.8535917868629493	Gyms	
Christian Hope Baptist Church	0.9462182593312074	Gyms	
Michael Jackson Memorial Art	1.0512198632026641	Gyms	
Broadmoor- Kretschmar Park	1.082559616924256	Gyms	
St Emmanuel Baptist Church	1.182762283434352	Gyms	
(unknown)	1.2707253365690159	Gyms	
(unknown)	1.4077300969388957	Gyms	
(unknown)	1.4328178037371686	Gyms	
Lutheran Church-The Redeemer	1.6236715373673931	Gyms	
(unknown)	1.682469587947085	Gyms	
Masonic Temple	1.707807560079914	Gyms	
Health is Wealth Mural	1.7854003205760745	Gyms	
Bennett Mills Park	1.7864373964182174	Gyms	
Oliver Chapel Baptist Church	1.8038513974489074	Gyms	
Good Hope Missionary Baptist Church	1.835535612438142	Gyms	
Greetings from 3rd Ward Mural	1.8653045087126963	Gyms	
Eastwood Park	1.8670593716186608	Gyms	
Christian Faith Missionary Baptist Church	1.8776388821301035	Gyms	
Painted Bus Stop	1.8849531514636737	Gyms	
Tim Hootman Law Office Statues	1.9123108831430917	Gyms	
(unknown)	1.9827750572748901	Gyms	
Frida Kahlo Mural	2.0290127745372994	Gyms	
Baldwin Park	2.0757738898356335	Gyms	
(unknown)	2.1804899437592646	Gyms	
(unknown)	2.202710282948078	Gyms	
Married Ladies Social, Art & Charity Club of America	2.3038232961279186	Gyms	
Crossroads Cafe II	2.309841428810398	Gyms	
BBVA Compass Stadium	2.3489955952597334	Gyms	
(unknown)	2.3521488898428453	Gyms	
Neill's Bahr	2.3699241202181214	Gyms	
Judson W Robinson Center Mural	2.394393629849037	Gyms	
Gallery Sonja Roesch	2.413982798878012	Gyms	
(unknown)	2.430588988503194	Gyms	
Discovery Green *	2.4776154433294426	Gyms	
(unknown)	2.4795810216174345	Gyms	
Graffiti of God	2.4834163315778426	Gyms	
(unknown)	2.4973082742561816	Gyms	
Fannin Metro	2.6230278119932224	Gyms	
Bill Coats Bridge	2.6820259333970204	Gyms	
(unknown)	2.6860111121664216	Gyms	
Masonic Temple	2.70613611640305	Gyms	
(unknown)	2.7127490850169127	Gyms	
METRO	2.7166478905481424	Gyms	
Holley's	2.7509897163214605	Gyms	
The Mount *	2.7626362848972974	Gyms	
(unknown)	2.7715799621585164	Gyms	

4) Find out which university has the largest number of Pokestops **in** Houston area.

Query:

```
select d.name as name, count(*) as counter,nodeType from pokemongo_hive d where
nodeType LIKE '%Pokestops%' AND d.name LIKE '%University%' group by
d.name,d.nodeType order by counter desc LIMIT 1;
```

```
University of Houston * 14      Pokestops
Time taken: 36.315 seconds, Fetched: 1 row(s)
```

5) Pokestops **in** different universities **in** Houston Area

Query:

```
select d.name as name, count(*) as counter,nodeType from pokemongo_hive d where
nodeType LIKE '%Pokestops%' AND d.name LIKE '%University%' group by
d.name,d.nodeType order by counter desc;
```

```
University of Houston * 14      Pokestops
The University of Houston-Moore School of Music *      2      Pokestops
West University Playground      1      Pokestops
West University Library 1      Pokestops
University of Texas Dental School      1      Pokestops
University of St. Thomas Catering      1      Pokestops
University of St. Thomas      1      Pokestops
University of Houston Seal      1      Pokestops
University of Houston Framework Map      1      Pokestops
University of Houston Cougar Band Memorial      1      Pokestops
University of Houston Clear Lake Monolith      1      Pokestops
University Welcome Center      1      Pokestops
US Post Office University Station      1      Pokestops
Texas Woman's University      1      Pokestops
Robertson Science Hall St. Thomas University      1      Pokestops
Rice University *      1      Pokestops
John H. Crooker University Center      1      Pokestops
Time taken: 37.57 seconds, Fetched: 17 row(s)
```

6) Select all the ways which contains “Gymnasium” in the way.

Query:

```
select nodes from ways_hive where tags LIKE '%Gymnasium%';
```

```
[N3681333339,N3681333343,N3681333341,N3681333347,N3681333352,N3681333391,N3681333393,N3681333387,N3681333378,N3681333372,N3681333339]
[N3751091801,N3751091802,N3751091798,N3751091800,N3751091797,N3751091796,N3688749377,N3751091794,N3751091795,N3681333352,N3681333391,N3751091799,N3751091801]
Time taken: 0.048 seconds, Fetched: 2 row(s)
```

Name: Adithya Srinivasa

UHID: 1430872

Date: 11/21/2016

7) Select all the ways which contains “Gymnasium” in the way with tags.

Query:

```
select nodes,tags from ways_hive where tags LIKE '%Gymnasium%';
```

```
[N3681333339,N3681333343,N3681333341,N3681333347,N3681333352,N3681333391,N3681333393,N3681333387,N3681333378,N3681333372,N3681333339] [ref=Building 532,addr:postcode=77204,building=yes,addr:country=US,name=Susanna Garrison Gymnasium,image=https://ssl.uh.edu/wtsc_apps/uh_maps/buildings/photos/gar_01.jpg,addr:street=Holman Street,addr:state=TX,addr:city=Houston,addr:housenumber=3875]
[N3751091801,N3751091802,N3751091798,N3751091800,N3751091797,N3751091796,N3688749377,N3751091794,N3751091795,N3681333352,N3681333391,N3751091799,N3751091801] [ref=Building 533,addr:postcode=77204,phone=(713) 743-9111,building=yes,fax=(713) 743-9121,website=http://www.uh.edu/charter-school/,addr:country=US,name=Melcher Gymnasium/Charter School,image=https://ssl.uh.edu/wtsc_apps/uh_maps/buildings/photos/mel_01.jpg,addr:street=Holman Street,addr:state=TX,addr:city=Houston,addr:housenumber=3871]
Time taken: 0.258 seconds, Fetched: 2 row(s)
```

NOTE: The snapshots of the query results has been placed in the final-snapshots folder. Please refer that for clear snapshots.