Contemporary Databases

PE06 – Geo Queries

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In this exercise, you are going to convert the Tweets collection to have a Geo loc field and create an index. You will also query by geolocation.

1. As shown in class, add the loc field to the Tweets collection (if not already done).
2. In a .js file, do a find() with a limit of 5 to show that the field was created. Paste the results into an MS Word document.
3. In another .js file, create the 2dsphere index needed to support geo queries (if not already done). Paste the results into the MS Word document.
4. Look up the latitude and longitude for your home town. As an alternative you can use Syracuse, NY.
5. Do geo queries to find tweets close to the above selected town. To do this you can start with a small number kilometers and increase it like I did in class to find queries near Dubrovnik. When you start getting results, paste the results into the MS Word document (one or two results are enough).

**Zip the .js files into a .zip file and submit the .zip file to the dropbox. Submit the (one) MS Word document also. Do not zip the Word document.**

**Result :**

**1.**

To add loc field

PS C:\Users\tuhee> mongo "C:\Users\tuhee\Desktop\Spring 2021\Non relational DB\ExamplesGeo\CreateLoc2.js"

**2.**

> load ("C:\\Users\\tuhee\\Desktop\\pe06limit5.js")

{

"\_id" : ObjectId("6047dac18173f18f96cca4dc"),

"id" : 129690,

"fromUser" : "barbaratalia",

"fromUserId" : 364445596,

"fromUserName" : "Barbara Talia",

"twitterTweetId" : 263000000000000000,

"LanguageCode" : "en",

"profileImageUrl" : "http://a0.twimg.com/profile\_images/2279235354/image\_normal.jpg",

"source" : "&lt;a href=&quot;http://instagr.am&quot;&gt;Instagram&lt;/a&gt;",

"text" : "Tree fell on Two cars. #hurricanesandy #sandy @ Central Park - Great Lawn http://t.co/cX7I352D",

"latitude" : 40.780866,

"longitude" : -73.96687,

"createdAt" : "Tue, 30 Oct 2012 23:25:44 +0000",

"loc" : {

"type" : "Point",

"coordinates" : [

-73.96687,

40.780866

]

}

}

{

"\_id" : ObjectId("6047dac18173f18f96cca4dd"),

"id" : 129691,

"fromUser" : "Emmanuellectric",

"fromUserId" : 73216130,

"fromUserName" : "Emmanuel Cruz",

"twitterTweetId" : 263000000000000000,

"LanguageCode" : "es",

"profileImageUrl" : "http://a0.twimg.com/profile\_images/408974115/yo\_rock\_normal.JPG",

"source" : "&lt;a href=&quot;http://twitter.com/download/iphone&quot;&gt;Twitter for iPhone&lt;/a&gt;",

"text" : "Gracias a Sandy hoy casi ni trabaje",

"latitude" : 20.5669,

"longitude" : -103.29186,

"createdAt" : "Tue, 30 Oct 2012 23:25:41 +0000",

"loc" : {

"type" : "Point",

"coordinates" : [

-103.29186,

20.5669

]

}

}

{

"\_id" : ObjectId("6047dac18173f18f96cca4de"),

"id" : 129693,

"fromUser" : "DrewEMTP",

"fromUserId" : 259020491,

"fromUserName" : "Drew Drake",

"twitterTweetId" : 263000000000000000,

"LanguageCode" : "en",

"profileImageUrl" : "http://a0.twimg.com/profile\_images/2771039552/3896e33f36e66546bb68682852d0bdad\_normal.jpeg",

"source" : "&lt;a href=&quot;http://twitter.com/download/iphone&quot;&gt;Twitter for iPhone&lt;/a&gt;",

"text" : "Manatolokin Bridge pretty surrealí¢ä‰åŒ\_ #Sandy http://t.co/gS4kGVpE",

"latitude" : 26.676458,

"longitude" : -82.000621,

"createdAt" : "Tue, 30 Oct 2012 23:25:41 +0000",

"loc" : {

"type" : "Point",

"coordinates" : [

-82.000621,

26.676458

]

}

}

{

"\_id" : ObjectId("6047dac18173f18f96cca4df"),

"id" : 129694,

"fromUser" : "PRussow",

"fromUserId" : 777099146,

"fromUserName" : "Pete russow",

"twitterTweetId" : 263000000000000000,

"LanguageCode" : "un",

"profileImageUrl" : "http://a0.twimg.com/profile\_images/2536743410/sNy0cA83\_normal",

"source" : "&lt;a href=&quot;http://twitter.com/download/android&quot;&gt;Twitter for Android&lt;/a&gt;",

"text" : "http://t.co/qY1pL0wv",

"latitude" : 37.12364,

"longitude" : -94.280499,

"createdAt" : "Tue, 30 Oct 2012 23:25:34 +0000",

"loc" : {

"type" : "Point",

"coordinates" : [

-94.280499,

37.12364

]

}

}

{

"\_id" : ObjectId("6047dac18173f18f96cca4e0"),

"id" : 129695,

"fromUser" : "tylerdemuro",

"fromUserId" : 369029696,

"fromUserName" : "Tyler DeMuro",

"twitterTweetId" : 263000000000000000,

"LanguageCode" : "en",

"profileImageUrl" : "http://a0.twimg.com/profile\_images/2551045036/zouvivatlbfknd128jtj\_normal.jpeg",

"source" : "&lt;a href=&quot;http://twitter.com/download/iphone&quot;&gt;Twitter for iPhone&lt;/a&gt;",

"text" : "í¢ä‰åÅñ@FOX29philly: Gov Christie: We flew to the boardwalk of Seaside Heights, and it is gone. #Sandyí¢ä‰åŒù good seaside sucks",

"latitude" : 39.832638,

"longitude" : -75.096684,

"createdAt" : "Tue, 30 Oct 2012 23:25:32 +0000",

"loc" : {

"type" : "Point",

"coordinates" : [

-75.096684,

39.832638

]

}

}

true

>

**3.**

> load("C:\\Users\\tuhee\\Desktop\\Index2d.js")

[

{

"v" : 2,

"key" : {

"\_id" : 1

},

"name" : "\_id\_"

},

{

"v" : 2,

"key" : {

"loc" : "2dsphere"

},

"name" : "loc\_2dsphere",

"2dsphereIndexVersion" : 3

}

]

true

>

**4.**

> load ("C:\\Users\\tuhee\\Desktop\\mylocation.js")

[

{

"v" : 2,

"key" : {

"\_id" : 1

},

"name" : "\_id\_"

},

{

"v" : 2,

"key" : {

"loc" : "2dsphere"

},

"name" : "loc\_2dsphere",

"2dsphereIndexVersion" : 3

}

]

{

"id" : 139240,

"fromUserName" : "Mixed Bitch",

"text" : "Sandy was tryin to cure all the thirst on the shore",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.146608,

43.039782

]

}

}

{

"id" : 131566,

"fromUserName" : "Jessica Dilling",

"text" : "@Sandy\_cheeeeks I love them though :-) except for when girls interupt to tell me my earring is attached to my hair -\_- lmfao",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.114076,

43.06515

]

}

}

true

>

**5.**

> load("C:\\Users\\tuhee\\Desktop\\mylocation.js")

[

{

"v" : 2,

"key" : {

"\_id" : 1

},

"name" : "\_id\_"

},

{

"v" : 2,

"key" : {

"loc" : "2dsphere"

},

"name" : "loc\_2dsphere",

"2dsphereIndexVersion" : 3

}

]

{

"id" : 139240,

"fromUserName" : "Mixed Bitch",

"text" : "Sandy was tryin to cure all the thirst on the shore",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.146608,

43.039782

]

}

}

{

"id" : 131566,

"fromUserName" : "Jessica Dilling",

"text" : "@Sandy\_cheeeeks I love them though :-) except for when girls interupt to tell me my earring is attached to my hair -\_- lmfao",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.114076,

43.06515

]

}

}

{

"id" : 130006,

"fromUserName" : "Alex Akopov",

"text" : "David Stern messed up, it''s Sandy not Katrina....",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.119398,

43.020119

]

}

}

{

"id" : 182021,

"fromUserName" : "Kelsey M",

"text" : "When McDonald''s is closed that''s the sign of Armageddon #sandy",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.214037,

43.038042

]

}

}

{

"id" : 172541,

"fromUserName" : "Lisa Miller",

"text" : "Hurricane Sandy: After Landfall http://t.co/Z7nUDqBS",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.07779,

43.026343

]

}

}

{

"id" : 133776,

"fromUserName" : "Shelby Rohadfox",

"text" : "didn''t realize how bad sandy was, last bad hurricane i heard of was Katrina",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.057571,

43.043074

]

}

}

{

"id" : 138168,

"fromUserName" : "Daynaí¢ä‹¢Œç",

"text" : "@FatimahtonAziz hi! i am safe and sound! Sandy didn''t hit the part of NY that I live in very hard thankfully! :)",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.094827,

43.137206

]

}

}

{

"id" : 138212,

"fromUserName" : "Daynaí¢ä‹¢Œç",

"text" : "My prayers go out to all who are struggling right now due to sandy!",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.094646,

43.137243

]

}

}

{

"id" : 146515,

"fromUserName" : "Andy Rockhampton",

"text" : "-\_\_\_\_\_\_\_- #sandy #tight #syracuse @ Home http://t.co/ra0dWAIB",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.14,

43.17133

]

}

}

{

"id" : 145026,

"fromUserName" : "Marissa Merola",

"text" : "K cool wishing I got caught in the middle of sandy right about now. #seriously.",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.082152,

43.202065

]

}

}

{

"id" : 131568,

"fromUserName" : "Jessica Marquart",

"text" : "í¢ä‰åÅñ@ThePresObama: If we named it \"hurricane Dallas Cowboys\" it would have never touched down. #sandyí¢ä‰åŒù @jeremy\_coz",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.31616,

43.163274

]

}

}

{

"id" : 136107,

"fromUserName" : "allyson murphy",

"text" : "My girl Katy standing on the FDR taken by her bf #Sandy #sandysucks #Aftermath #BlackTuesday #HurricaneSandy #NYCC12 http://t.co/pP4Mmj3c",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.274857,

43.191299

]

}

}

{

"id" : 163371,

"fromUserName" : "JonathanTremblay",

"text" : "After Sandy, U.S. works to resume daily life",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.334668,

43.19911

]

}

}

{

"id" : 174517,

"fromUserName" : "JonathanTremblay",

"text" : "Sandy brings more rain, cold to Eastern Canada",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.334668,

43.19911

]

}

}

{

"id" : 179098,

"fromUserName" : "Catie Shelton",

"text" : "No school the rest of the week íÁÅŸèìŒ\_ #sandy",

"loc" : {

"type" : "Point",

"coordinates" : [

-76.170003,

43.287507

]

}

}

{

"id" : 159299,

"fromUserName" : "Hemminger Mcmeen",

"text" : "#Sandy bgz",

"loc" : {

"type" : "Point",

"coordinates" : [

-75.974316,

42.788757

]

}

}

true

> Dubrovnik