Question -1

use hw5

show collections

db.zipcodes.find().limit(15)

```
[(base) lutfuato@Lutfus-MacBook-Pro Downloads % mongoimport --db hw5 --collection zipcodes --file zips.json
2022-05-29T10:40:00.559+0300    connected to: mongodb://localhost/
2022-05-29T10:40:01.827+0300    29353 document(s) imported successfully. 0 document(s) failed to import.
(base) lutfuato@Lutfus-MacBook-Pro Downloads %
```

```
[> use hw5
switched to db hw5
[> show collections
zipcodes
>
```

```
Type "it" for more
[> db.zipcodes.find().limit(15)
{ "_id" : "01012", "city" : "CHESTERFIELD", "loc" : [ -72.833309, 42.38167 ], "pop" : 177, "state" : "MA" }
{ "_id" : "01022", "city" : "WESTOVER AFB", "loc" : [ -72.558657, 42.196672 ], "pop" : 1764, "state" : "MA" }
{ "_id" : "01026", "city" : "CUMMINGTON", "loc" : [ -72.905767, 42.435296 ], "pop" : 1484, "state" : "MA" }
{ "_id" : "01001", "city" : "AGAWAM", "loc" : [ -72.622739, 42.070206 ], "pop" : 15338, "state" : "MA" }
{ "_id" : "01028", "city" : "EAST LONGMEADOW", "loc" : [ -72.505565, 42.067203 ], "pop" : 13367, "state" : "MA" }
{ "_id" : "01030", "city" : "FEEDING HILLS", "loc" : [ -72.675077, 42.07182 ], "pop" : 11985, "state" : "MA" }
{ "_id" : "01031", "city" : "GILBERTVILLE", "loc" : [ -72.198585, 42.332194 ], "pop" : 2385, "state" : "MA" }
{ "_id" : "01032", "city" : "GOSHEN", "loc" : [ -72.844092, 42.466234 ], "pop" : 122, "state" : "MA" }
{ "_id" : "01033", "city" : "GRANBY", "loc" : [ -72.520001, 42.255704 ], "pop" : 5526, "state" : "MA" }
{ "_id" : "01034", "city" : "TOLLAND", "loc" : [ -72.908793, 42.070234 ], "pop" : 1652, "state" : "MA" }
{ "_id" : "01035", "city" : "HADLEY", "loc" : [ -72.571499, 42.36062 ], "pop" : 4231, "state" : "MA" }
{ "_id" : "01036", "city" : "HAMPDEN", "loc" : [ -72.431823, 42.064756 ], "pop" : 4709, "state" : "MA" }
{ "_id" : "01010", "city" : "BRIMFIELD", "loc" : [ -72.188455, 42.116543 ], "pop" : 3706, "state" : "MA" }
{ "_id" : "01005", "city" : "BARRE", "loc" : [ -72.108354, 42.409698 ], "pop" : 4546, "state" : "MA" }
{ "_id" : "01040", "city" : "HOLYOKE", "loc" : [ -72.626193, 42.202007 ], "pop" : 43704, "state" : "MA" }
>
```

Question – 2

db.zipcodes.find( { pop: { $gt: 30000 },state :"CA" } )

```
[> db.zipcodes.find( { pop: { $gt: 30000 },state :"CA" } )
{ "_id" : "90001", "city" : "LOS ANGELES", "loc" : [ -118.247896, 33.973093 ], "pop" : 51841, "state" : "CA" }
{ "_id" : "90002", "city" : "LOS ANGELES", "loc" : [ -118.246213, 33.94969 ], "pop" : 40629, "state" : "CA" }
{ "_id" : "90003", "city" : "LOS ANGELES", "loc" : [ -118.272739, 33.965335 ], "pop" : 53938, "state" : "CA" }
{ "_id" : "90007", "city" : "LOS ANGELES", "loc" : [ -118.287095, 34.029442 ], "pop" : 46985, "state" : "CA" }
{ "_id" : "90005", "city" : "LOS ANGELES", "loc" : [ -118.301197, 34.058508 ], "pop" : 35864, "state" : "CA" }
{ "_id" : "90004", "city" : "LOS ANGELES", "loc" : [ -118.302863, 34.076163 ], "pop" : 64062, "state" : "CA" }
{ "_id" : "90016", "city" : "LOS ANGELES", "loc" : [ -118.352787, 34.029826 ], "pop" : 43669, "state" : "CA" }
{ "_id" : "90018", "city" : "LOS ANGELES", "loc" : [ -118.315173, 34.028972 ], "pop" : 48267, "state" : "CA" }
{ "_id" : "90019", "city" : "LOS ANGELES", "loc" : [ -118.33426, 34.048158 ], "pop" : 64996, "state" : "CA" }
{ "_id" : "90020", "city" : "LOS ANGELES", "loc" : [ -118.302211, 34.066535 ], "pop" : 34926, "state" : "CA" }
{ "_id" : "90024", "city" : "LOS ANGELES", "loc" : [ -118.440796, 34.063691 ], "pop" : 38370, "state" : "CA" }
{ "_id" : "90023", "city" : "LOS ANGELES", "loc" : [ -118.197498, 34.024478 ], "pop" : 47136, "state" : "CA" }
{ "_id" : "90025", "city" : "LOS ANGELES", "loc" : [ -118.448717, 34.044662 ], "pop" : 37746, "state" : "CA" }
{ "_id" : "90022", "city" : "EAST LOS ANGELES", "loc" : [ -118.155319, 34.023638 ], "pop" : 65065, "state" : "CA" }
{ "_id" : "90008", "city" : "LOS ANGELES", "loc" : [ -118.341123, 34.011643 ], "pop" : 33073, "state" : "CA" }
{ "_id" : "90006", "city" : "LOS ANGELES", "loc" : [ -118.291687, 34.049323 ], "pop" : 63389, "state" : "CA" }
{ "_id" : "90011", "city" : "LOS ANGELES", "loc" : [ -118.258189, 34.007856 ], "pop" : 96074, "state" : "CA" }
{ "_id" : "90026", "city" : "LOS ANGELES", "loc" : [ -118.264641, 34.076629 ], "pop" : 74751, "state" : "CA" }
{ "_id" : "90027", "city" : "LOS ANGELES", "loc" : [ -118.292516, 34.104031 ], "pop" : 50484, "state" : "CA" }
{ "_id" : "90028", "city" : "LOS ANGELES", "loc" : [ -118.325363, 34.100549 ], "pop" : 30152, "state" : "CA" }
Type "it" for more
[> it
{ "_id" : "90031", "city" : "LOS ANGELES", "loc" : [ -118.211279, 34.078349 ], "pop" : 39706, "state" : "CA" }
{ "_id" : "90032", "city" : "LOS ANGELES", "loc" : [ -118.175323, 34.081785 ], "pop" : 46602, "state" : "CA" }
{ "_id" : "90033", "city" : "LOS ANGELES", "loc" : [ -118.208442, 34.048676 ], "pop" : 57469, "state" : "CA" }
{ "_id" : "90034", "city" : "LOS ANGELES", "loc" : [ -118.400482, 34.028977 ], "pop" : 53930, "state" : "CA" }
{ "_id" : "90029", "city" : "LOS ANGELES", "loc" : [ -118.294393, 34.089982 ], "pop" : 41120, "state" : "CA" }
{ "_id" : "90037", "city" : "LOS ANGELES", "loc" : [ -118.286284, 34.002982 ], "pop" : 56922, "state" : "CA" }
{ "_id" : "90038", "city" : "LOS ANGELES", "loc" : [ -118.321489, 34.089769 ], "pop" : 33001, "state" : "CA" }
{ "_id" : "90043", "city" : "LOS ANGELES", "loc" : [ -118.33211, 33.987099 ], "pop" : 45397, "state" : "CA" }
{ "_id" : "90042", "city" : "LOS ANGELES", "loc" : [ -118.192902, 34.114527 ], "pop" : 60003, "state" : "CA" }
{ "_id" : "90045", "city" : "LOS ANGELES", "loc" : [ -118.394128, 33.963075 ], "pop" : 36480, "state" : "CA" }
{ "_id" : "90044", "city" : "LOS ANGELES", "loc" : [ -118.290119, 33.955089 ], "pop" : 83958, "state" : "CA" }
{ "_id" : "90047", "city" : "LOS ANGELES", "loc" : [ -118.307304, 33.956896 ], "pop" : 47975, "state" : "CA" }
{ "_id" : "90046", "city" : "COLE", "loc" : [ -118.357979, 34.09743 ], "pop" : 48423, "state" : "CA" }
{ "_id" : "90049", "city" : "LOS ANGELES", "loc" : [ -118.473967, 34.066 ], "pop" : 35507, "state" : "CA" }
{ "_id" : "90057", "city" : "LOS ANGELES", "loc" : [ -118.276262, 34.062172 ], "pop" : 39017, "state" : "CA" }
{ "_id" : "90059", "city" : "LOS ANGELES", "loc" : [ -118.24628, 33.929331 ], "pop" : 34536, "state" : "CA" }
{ "_id" : "90063", "city" : "HAZARD", "loc" : [ -118.185432, 34.044017 ], "pop" : 61123, "state" : "CA" }
{ "_id" : "90065", "city" : "LOS ANGELES", "loc" : [ -118.226637, 34.107307 ], "pop" : 45578, "state" : "CA" }
{ "_id" : "90201", "city" : "BELL GARDENS", "loc" : [ -118.17205, 33.969177 ], "pop" : 99568, "state" : "CA" }
{ "_id" : "90066", "city" : "LOS ANGELES", "loc" : [ -118.429769, 34.002956 ], "pop" : 53095, "state" : "CA" }
Type "it" for more
[> it
{ "_id" : "90220", "city" : "RANCHO DOMINGUEZ", "loc" : [ -118.239044, 33.890654 ], "pop" : 47631, "state" : "CA" }
{ "_id" : "90221", "city" : "EAST RANCHO DOMI", "loc" : [ -118.203724, 33.897324 ], "pop" : 47844, "state" : "CA" }
{ "_id" : "90230", "city" : "CULVER CITY", "loc" : [ -118.399115, 33.994927 ], "pop" : 32207, "state" : "CA" }
{ "_id" : "90241", "city" : "DOWNEY", "loc" : [ -118.13062, 33.941612 ], "pop" : 34348, "state" : "CA" }
{ "_id" : "90242", "city" : "DOWNEY", "loc" : [ -118.139465, 33.921789 ], "pop" : 36988, "state" : "CA" }
{ "_id" : "90247", "city" : "GARDENA", "loc" : [ -118.296122, 33.892463 ], "pop" : 42072, "state" : "CA" }
{ "_id" : "90250", "city" : "HOLLY PARK", "loc" : [ -118.346978, 33.913214 ], "pop" : 78511, "state" : "CA" }
{ "_id" : "90262", "city" : "LYNWOOD", "loc" : [ -118.201289, 33.924076 ], "pop" : 61606, "state" : "CA" }
{ "_id" : "90255", "city" : "HUNTINGTON PARK", "loc" : [ -118.216053, 33.976879 ], "pop" : 72139, "state" : "CA" }
{ "_id" : "90266", "city" : "MANHATTAN BEACH", "loc" : [ -118.399562, 33.889594 ], "pop" : 31984, "state" : "CA" }
{ "_id" : "90274", "city" : "PALOS VERDES EST", "loc" : [ -118.374763, 33.770094 ], "pop" : 60381, "state" : "CA" }
{ "_id" : "90278", "city" : "REDONDO BEACH", "loc" : [ -118.371459, 33.870654 ], "pop" : 34873, "state" : "CA" }
{ "_id" : "90280", "city" : "SOUTH GATE", "loc" : [ -118.201349, 33.94617 ], "pop" : 87026, "state" : "CA" }
{ "_id" : "90277", "city" : "REDONDO BEACH", "loc" : [ -118.383221, 33.830656 ], "pop" : 33102, "state" : "CA" }
{ "_id" : "90291", "city" : "VENICE", "loc" : [ -118.463463, 33.993772 ], "pop" : 32987, "state" : "CA" }
{ "_id" : "90301", "city" : "INGLEWOOD", "loc" : [ -118.355575, 33.955048 ], "pop" : 36481, "state" : "CA" }
{ "_id" : "90501", "city" : "TORRANCE", "loc" : [ -118.31183, 33.826817 ], "pop" : 37691, "state" : "CA" }
{ "_id" : "90505", "city" : "TORRANCE", "loc" : [ -118.350733, 33.810635 ], "pop" : 33933, "state" : "CA" }
{ "_id" : "90503", "city" : "TORRANCE", "loc" : [ -118.354236, 33.839709 ], "pop" : 40351, "state" : "CA" }
{ "_id" : "90605", "city" : "WHITTIER", "loc" : [ -118.035568, 33.941338 ], "pop" : 34035, "state" : "CA" }
Type "it" for more
```

Question – 3

db.zipcodes.find( { $or: [ { state :{$ne : "CA" }}, {"loc.0": { $lt: -120 }, "loc.1": { $gt: 40 }}  ] } )

```
[> db.zipcodes.find( { $or: [ { state :{$ne : "CA" }}, {"loc.0": { $lt: -120 }, "loc.1": { $gt: 40 }}    ] } )
{ "_id" : "01012", "city" : "CHESTERFIELD", "loc" : [ -72.833309, 42.38167 ], "pop" : 177, "state" : "MA" }
{ "_id" : "01022", "city" : "WESTOVER AFB", "loc" : [ -72.558657, 42.196672 ], "pop" : 1764, "state" : "MA" }
{ "_id" : "01026", "city" : "CUMMINGTON", "loc" : [ -72.905767, 42.435296 ], "pop" : 1484, "state" : "MA" }
{ "_id" : "01001", "city" : "AGAWAM", "loc" : [ -72.622739, 42.070206 ], "pop" : 15338, "state" : "MA" }
{ "_id" : "01028", "city" : "EAST LONGMEADOW", "loc" : [ -72.505565, 42.067203 ], "pop" : 13367, "state" : "MA" }
{ "_id" : "01030", "city" : "FEEDING HILLS", "loc" : [ -72.675077, 42.07182 ], "pop" : 11985, "state" : "MA" }
{ "_id" : "01031", "city" : "GILBERTVILLE", "loc" : [ -72.198585, 42.332194 ], "pop" : 2385, "state" : "MA" }
{ "_id" : "01032", "city" : "GOSHEN", "loc" : [ -72.844092, 42.466234 ], "pop" : 122, "state" : "MA" }
{ "_id" : "01033", "city" : "GRANBY", "loc" : [ -72.520001, 42.255704 ], "pop" : 5526, "state" : "MA" }
{ "_id" : "01034", "city" : "TOLLAND", "loc" : [ -72.908793, 42.070234 ], "pop" : 1652, "state" : "MA" }
{ "_id" : "01035", "city" : "HADLEY", "loc" : [ -72.571499, 42.36062 ], "pop" : 4231, "state" : "MA" }
{ "_id" : "01036", "city" : "HAMPDEN", "loc" : [ -72.431823, 42.064756 ], "pop" : 4709, "state" : "MA" }
{ "_id" : "01010", "city" : "BRIMFIELD", "loc" : [ -72.188455, 42.116543 ], "pop" : 3706, "state" : "MA" }
{ "_id" : "01005", "city" : "BARRE", "loc" : [ -72.108354, 42.409698 ], "pop" : 4546, "state" : "MA" }
{ "_id" : "01040", "city" : "HOLYOKE", "loc" : [ -72.626193, 42.202007 ], "pop" : 43704, "state" : "MA" }
{ "_id" : "01050", "city" : "HUNTINGTON", "loc" : [ -72.873341, 42.265301 ], "pop" : 2084, "state" : "MA" }
{ "_id" : "01053", "city" : "LEEDS", "loc" : [ -72.703403, 42.354292 ], "pop" : 1350, "state" : "MA" }
{ "_id" : "01039", "city" : "HAYDENVILLE", "loc" : [ -72.703178, 42.381799 ], "pop" : 1387, "state" : "MA" }
{ "_id" : "01054", "city" : "LEVERETT", "loc" : [ -72.499334, 42.46823 ], "pop" : 1748, "state" : "MA" }
{ "_id" : "01038", "city" : "HATFIELD", "loc" : [ -72.616735, 42.38439 ], "pop" : 3184, "state" : "MA" }
Type "it" for more
[> it
{ "_id" : "01007", "city" : "BELCHERTOWN", "loc" : [ -72.410953, 42.275103 ], "pop" : 10579, "state" : "MA" }
{ "_id" : "01027", "city" : "MOUNT TOM", "loc" : [ -72.679921, 42.264319 ], "pop" : 16864, "state" : "MA" }
{ "_id" : "01013", "city" : "CHICOPEE", "loc" : [ -72.607962, 42.162046 ], "pop" : 23396, "state" : "MA" }
{ "_id" : "01008", "city" : "BLANDFORD", "loc" : [ -72.936114, 42.182949 ], "pop" : 1240, "state" : "MA" }
{ "_id" : "01020", "city" : "CHICOPEE", "loc" : [ -72.576142, 42.176443 ], "pop" : 31495, "state" : "MA" }
{ "_id" : "01011", "city" : "CHESTER", "loc" : [ -72.988761, 42.279421 ], "pop" : 1688, "state" : "MA" }
{ "_id" : "01002", "city" : "CUSHMAN", "loc" : [ -72.51565, 42.377017 ], "pop" : 36963, "state" : "MA" }
{ "_id" : "01056", "city" : "LUDLOW", "loc" : [ -72.471012, 42.172823 ], "pop" : 18820, "state" : "MA" }
{ "_id" : "01060", "city" : "FLORENCE", "loc" : [ -72.654245, 42.324662 ], "pop" : 27939, "state" : "MA" }
{ "_id" : "01057", "city" : "MONSON", "loc" : [ -72.319634, 42.101017 ], "pop" : 8194, "state" : "MA" }
{ "_id" : "01069", "city" : "PALMER", "loc" : [ -72.328785, 42.176233 ], "pop" : 9778, "state" : "MA" }
{ "_id" : "01070", "city" : "PLAINFIELD", "loc" : [ -72.918289, 42.514393 ], "pop" : 571, "state" : "MA" }
{ "_id" : "01071", "city" : "RUSSELL", "loc" : [ -72.840343, 42.147063 ], "pop" : 608, "state" : "MA" }
{ "_id" : "01072", "city" : "SHUTESBURY", "loc" : [ -72.421342, 42.481968 ], "pop" : 1533, "state" : "MA" }
{ "_id" : "01075", "city" : "SOUTH HADLEY", "loc" : [ -72.581137, 42.237537 ], "pop" : 16699, "state" : "MA" }
{ "_id" : "01073", "city" : "SOUTHAMPTON", "loc" : [ -72.719381, 42.224697 ], "pop" : 4478, "state" : "MA" }
{ "_id" : "01077", "city" : "SOUTHWICK", "loc" : [ -72.770588, 42.051099 ], "pop" : 7667, "state" : "MA" }
{ "_id" : "01068", "city" : "OAKHAM", "loc" : [ -72.051265, 42.348033 ], "pop" : 1503, "state" : "MA" }
{ "_id" : "01081", "city" : "WALES", "loc" : [ -72.204592, 42.062734 ], "pop" : 1732, "state" : "MA" }
{ "_id" : "01104", "city" : "SPRINGFIELD", "loc" : [ -72.577769, 42.128848 ], "pop" : 22115, "state" : "MA" }
Type "it" for more
```

Question – 4

db.zipcodes.aggregate(   [    { $sort : { pop : -1 } },     { $limit : 5 },     { $project: { "pop": 1, "city": 1,"_id":0} }   ] )

```
>
[> db.zipcodes.aggregate(    [      { $sort : { pop : -1 } },       { $limit : 5 },      { $project: { "pop": 1, "city": 1,"_id":0} }     ] )
{ "city" : "CHICAGO", "pop" : 112047 }
{ "city" : "BROOKLYN", "pop" : 111396 }
{ "city" : "NEW YORK", "pop" : 106564 }
{ "city" : "NEW YORK", "pop" : 100027 }
{ "city" : "BELL GARDENS", "pop" : 99568 }
>
```

Question – 5

db.zipcodes.aggregate( [ {$group: {_id:"$state",totalState: {$sum: 1} } } , { $match : { totalState: { $gt : 800}} },{ $sort : { totalState : -1 } } ] )

```
> db.zipcodes.aggregate( [ {$group: {_id:"$state",totalState: {$sum: 1}  }  }  , { $match : { totalState: { $gt : 800}} },{ $sort : { totalState : -1 } } ] )
{ "_id" : "TX", "totalState" : 1671 }
{ "_id" : "NY", "totalState" : 1595 }
{ "_id" : "CA", "totalState" : 1516 }
{ "_id" : "PA", "totalState" : 1458 }
{ "_id" : "IL", "totalState" : 1237 }
{ "_id" : "OH", "totalState" : 1007 }
{ "_id" : "MO", "totalState" : 994 }
{ "_id" : "IA", "totalState" : 922 }
{ "_id" : "MN", "totalState" : 882 }
{ "_id" : "MI", "totalState" : 876 }
{ "_id" : "VA", "totalState" : 816 }
{ "_id" : "KY", "totalState" : 809 }
{ "_id" : "FL", "totalState" : 804 }
```

Question – 6

```
db.createCollection("customers",{validator:{$jsonSchema:{
bsonType:"object",
 required:["name","zipcode","avg_rating"],
 properties:{
 name:{
 bsonType:"string",
 description:"mustbeastringandisrequired"
 },
 zipcode:{
bsonType:"string",
 description:"mustbeastringandisrequired"
 },
 avg_rating:{
 bsonType:["double"],
 minimum:0.0,
 maximum:10.0,
 description:"mustbeadoublein[0.0,10.0]ifthefieldexists"
 },
 last_order:{
bsonType:"object",
 required:["year"],
 properties:{
 year:{
 bsonType:"int",
 description:"mustbeastringifthefieldexists"
 },
tags:{bsonType:["array"],minItems:0,maxItems:100,items:{bsonType:["string"],description:"tag
sshouldbestringsifexists",}}
 }}
}}}})
```

```
> db.createCollection("customers",{validator:{$jsonSchema:{
...  bsonType:"object",
...  required:["name","zipcode","avg_rating"],
...  properties:{
...  name:{
...  bsonType:"string",
...  description:"mustbeastringandisrequired"
...  },
...  zipcode:{
...  bsonType:"string",
...  description:"mustbeastringandisrequired"
...  },
...  avg_rating:{
...  bsonType:["double"],
...  minimum:0.0,
...  maximum:10.0,
...  description:"mustbeadoublein[0.0,10.0]ifthefieldexists"
...  },
...  last_order:{
...  bsonType:"object",
...  required:["year"],
...  properties:{
...  year:{
...  bsonType:"int",
...  description:"mustbeastringifthefieldexists"
...  },
...
...  tags:{bsonType:["array"],minItems:0,maxItems:100,items:{bsonType:["string"],description:"tagsshouldbestringsifexists",}}
...  }}
...  }}}})
{ "ok" : 1 }
```

```
[> show collections
customers
zipcodes
>
```

Question – 7

try {   db.customers.insertMany( [ {name:"Lutfu Mustafa Kemal Ato",  zipcode : "99503", avg_rating:8.3}, {name:"Jake G.",zipcode:"90025",avg_rating:3.5,   last_order : {year : NumberInt(2009) ,tags: []} }, {name:"Adam S.",zipcode:"33126",avg_rating:4.9,   last_order : {year : NumberInt(2019) ,tags: ["book","fiction"]} }, {name:"Harold H.",zipcode:"90010",avg_rating:1.0,   last_order : {year : NumberInt(3005) ,tags: []} }    ] ); } catch (e) {   print (e); }

```
> try {   db.customers.insertMany( [ {name:"Lutfu Mustafa Kemal Ato",  zipcode : "99503", avg_rating:8.3}, {name:"Jake G.",zipcode:"90025",avg_rating:3.5,   last_order : {year : NumberInt(2009) ,tags: []} }, {name:"Adam S.",zipcode:"33126",avg_
rating:4.9,   last_order : {year : NumberInt(2019) ,tags: ["book","fiction"]} }, {name:"Harold H.",zipcode:"90010",avg_rating:1.0,   last_order : {year : NumberInt(3005) ,tags: []} }    ] ); } catch (e) {   print (e); }
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("6293c517c5e12248103b284b"),
                ObjectId("6293c517c5e12248103b284c"),
                ObjectId("6293c517c5e12248103b284d"),
                ObjectId("6293c517c5e12248103b284e")
        ]
}
> db.customers.find()
{ "_id" : ObjectId("6293c517c5e12248103b284b"), "name" : "Lutfu Mustafa Kemal Ato", "zipcode" : "99503", "avg_rating" : 8.3 }
{ "_id" : ObjectId("6293c517c5e12248103b284c"), "name" : "Jake G.", "zipcode" : "90025", "avg_rating" : 3.5, "last_order" : { "year" : 2009, "tags" : [ ] } }
{ "_id" : ObjectId("6293c517c5e12248103b284d"), "name" : "Adam S.", "zipcode" : "33126", "avg_rating" : 4.9, "last_order" : { "year" : 2019, "tags" : [ "book", "fiction" ] } }
{ "_id" : ObjectId("6293c517c5e12248103b284e"), "name" : "Harold H.", "zipcode" : "90010", "avg_rating" : 1, "last_order" : { "year" : 3005, "tags" : [ ] } }
```

Question - 8

db.customers.remove( {"last_order.year":{$gt:2022}})

```
> db.customers.remove( {"last_order.year":{$gt:2022}})
WriteResult({ "nRemoved" : 1 })
> db.customers.find()
{ "_id" : ObjectId("6293c517c5e12248103b284b"), "name" : "Lutfu Mustafa Kemal Ato", "zipcode" : "99503", "avg_rating" : 8.3 }
{ "_id" : ObjectId("6293c517c5e12248103b284c"), "name" : "Jake G.", "zipcode" : "90025", "avg_rating" : 3.5, "last_order" : { "year" : 2009, "tags" : [ ] } }
{ "_id" : ObjectId("6293c517c5e12248103b284d"), "name" : "Adam S.", "zipcode" : "33126", "avg_rating" : 4.9, "last_order" : { "year" : 2019, "tags" : [ "book", "fiction" ] } }
```

question - 9

db.customers.updateOne({ "name" : "Lutfu Mustafa Kemal Ato"}, {$set: {"avg_rating": 15}})

The response we recieve from the MongoDB is a WriteError response. The reason is that: We set the maximum possible value for avg_rating to 10, but we are trying to set the value to 15. This causes an error.

```
[> db.customers.updateOne({ "name" : "Lutfu Mustafa Kemal Ato"}, {$set: {"avg_rating": 15}})
WriteError({
        "index" : 0,
        "code" : 121,
        "errmsg" : "Document failed validation",
        "op" : {
                "q" : {
                        "name" : "Lutfu Mustafa Kemal Ato"
                },
                "u" : {
                        "$set" : {
                                "avg_rating" : 15
                        }
                },
                "multi" : false,
                "upsert" : false
        },
        "errInfo" : {
                "failingDocumentId" : ObjectId("6293c517c5e12248103b284b"),
                "details" : {
                        "operatorName" : "$jsonSchema",
                        "schemaRulesNotSatisfied" : [
                                {
                                        "operatorName" : "properties",
                                        "propertiesNotSatisfied" : [
                                                {
                                                        "propertyName" : "avg_rating",
                                                        "details" : [
                                                                {
                                                                        "operatorName" : "maximum",
                                                                        "specifiedAs" : {
                                                                                "maximum" : 10
                                                                        },
                                                                        "reason" : "comparison failed",
                                                                        "consideredValue" : 15
                                                                }
                                                        ]
                                                }
                                        ]
                                }
                        ]
                }
        }
}) :
WriteError({
        "index" : 0,
        "code" : 121,
        "errmsg" : "Document failed validation",
        "op" : {
                "q" : {
                        "name" : "Lutfu Mustafa Kemal Ato"
                },
                "u" : {
                        "$set" : {
                                "avg_rating" : 15
                        }
                },
                "multi" : false,
                "upsert" : false
        },
        "errInfo" : {
                "failingDocumentId" : ObjectId("6293c517c5e12248103b284b"),
                "details" : {
                        "operatorName" : "$jsonSchema",
                        "schemaRulesNotSatisfied" : [
                                {
                                        "operatorName" : "properties",
                                        "propertiesNotSatisfied" : [
                                                {
                                                        "propertyName" : "avg_rating",
                                                        "details" : [
                                                                {
```

```
                                        "propertyName" : "avg_rating",
                                        "details" : [
                                                {
                                                        "operatorName" : "maximum",
                                                        "specifiedAs" : {
                                                                "maximum" : 10
                                                        },
                                                        "reason" : "comparison failed",
                                                        "consideredValue" : 15
                                                }
                                        ]
                                }
                        ]
                }
        ]
}
}) :
WriteError({
        "index" : 0,
        "code" : 121,
        "errmsg" : "Document failed validation",
        "op" : {
                "q" : {
                        "name" : "Lutfu Mustafa Kemal Ato"
                },
                "u" : {
                        "$set" : {
                                "avg_rating" : 15
                        }
                },
                "multi" : false,
                "upsert" : false
        },
        "errInfo" : {
                "failingDocumentId" : ObjectId("6293c517c5e12248103b284b"),
                "details" : {
                        "operatorName" : "$jsonSchema",
                        "schemaRulesNotSatisfied" : [
                                {
                                        "operatorName" : "properties",
                                        "propertiesNotSatisfied" : [
                                                {
                                                        "propertyName" : "avg_rating",
                                                        "details" : [
                                                                {
                                                                        "operatorName" : "maximum",
                                                                        "specifiedAs" : {
                                                                                "maximum" : 10
                                                                        },
                                                                        "reason" : "comparison failed",
                                                                        "consideredValue" : 15
                                                                }
                                                        ]
                                                }
                                        ]
                                }
                        ]
                }
        }
})
WriteError@src/mongo/shell/bulk_api.js:465:48
mergeBatchResults@src/mongo/shell/bulk_api.js:871:49
executeBatch@src/mongo/shell/bulk_api.js:940:13
Bulk/this.execute@src/mongo/shell/bulk_api.js:1182:21
DBCollection.prototype.updateOne@src/mongo/shell/crud_api.js:600:17
@(shell):1:1
> 
```

question - 10

db.customers.aggregate([ { $lookup: { from: "zipcodes", localField : "zipcode", foreignField : "_id", as : "zipcode_ids" } },{ $project: { "name": 1, "city": 1, "state":1} }])

```
...
>
> db.customers.aggregate([ { $lookup: { from: "zipcodes", localField : "zipcode", foreignField : "_id", as : "zipcode_ids" } },{ $project: { "name": 1, "city": 1, "state":1} }])
{ "_id" : ObjectId("6293c517c5e12248103b284b"), "name" : "Lutfu Mustafa Kemal Ato" }
{ "_id" : ObjectId("6293c517c5e12248103b284c"), "name" : "Jake G." }
{ "_id" : ObjectId("6293c517c5e12248103b284d"), "name" : "Adam S." }
> ▮
```

Question – 11

mongoexport --db hw5 --collection customers -o customers.json

```
{ _id :{ $oid : 6293c517c5e12248103b284d }, name : Adam S. , zipcode : 33128 , avg_rating :4.9, last_order :{ y
2022-05-29T23:48:48.590+0300    exported 3 records
[(base) lutfuato@Lutfus-MacBook-Pro Desktop % mongoexport --db hw5 --collection customers -o customers.json
2022-05-29T23:48:57.904+0300    connected to: mongodb://localhost/
2022-05-29T23:48:57.929+0300    exported 3 records
(base) lutfuato@Lutfus-MacBook-Pro Desktop % ▮
```