|  |  |  |  |
| --- | --- | --- | --- |
|  | Query SQL | Query MongoDB | Duration |
| 1 Average bixi ride (duration) per year | SELECT AVG(duration\_sec) AS AVG\_DUR, date\_trunc('year', start\_date)  From od  GROUP BY date\_trunc('year', start\_date) | db.OD.aggregate([  {$group: {  \_id: {  year : { $substr : ["$start\_date", 0, 4 ]}  },avgride: {$avg:"$duration\_sec"}  }},{$sort:{avgride:-1}}]) | **SQL: 4 secs 638 msec.**  **MongoDB:** |
| 2 Average bixi ride(duration) per month | SELECT AVG(duration\_sec) AS AVG\_DUR, date\_trunc('month', start\_date)  From od  GROUP BY date\_trunc('month', start\_date) | db.OD.aggregate([  {$group: {  \_id: {  month : { $substr : ["$start\_date", 5, 2 ]}  },avgride: {$avg:"$duration\_sec"}  }},{$sort:{avgride:-1}}]) | **SQL: 4 secs 555 msec**  **MongoDB:** |
| 3 Longest ride duration per year | SELECT date\_trunc('year', start\_date) as year, MAX(duration\_sec)  FROM OD  GROUP BY year | db.OD.aggregate([  {$group: {  \_id: {  year : { $substr : ["$start\_date", 0, 4 ]}  },longest\_ride: {$max:"$duration\_sec"}  }}]) | **SQL: 4 secs 688 msec**  **MongoDB:** |
| 4 Most month with no membership | SELECT date\_trunc('month', start\_date) as month, count(\*)  FROM OD  WHERE is\_member = 0  GROUP BY month  ORDER by count(\*)  Desc limit 1; | db.OD.aggregate([{  {$match: {is\_member: 0}}  $group: {\_id: {month: {$substr: ["$start\_date",5,2]}}, count: {$sum:1}  }}, {$sort:count: -1}]) | **SQL: 2secs 694 msec**  **MongoDB:** |
| 5 Most busy day | select date\_trunc( 'day', start\_date ) as day, count(\*)  from OD  group by day  order by count(\*)  desc limit 1; | db.OD.aggregate([  {$group: {  \_id: {  day : { $substr : ["$start\_date", 0, 10 ]}  },count: {$sum:1}  }},{$sort:{count:-1}}]) | **SQL: 4 secs 478 msc**  **MongoDB:** |
| 6 Most favorite path | select count(\*),end\_station\_code,station.name  from station join OD on station.Code = OD.end\_station\_code  where start\_station\_code=end\_station\_code  group by end\_station\_code,station.name  order by count(\*) desc | db.OD.aggregate([  {$group: {  \_id: {  start : “$start\_station\_code”,  end : “$end\_station\_code”  },count: {$sum:1}  }},{$sort:{count:-1}}],{allowDiskUse: true}) | **SQL: 3 secs 576**  **MongoDB:** |
| 7 Most busy month | SELECT date\_trunc('month', start\_date) as month, count(\*)  FROM OD  GROUP BY month  ORDER by count(\*) | db.OD.aggregate([  {$group: { \_id: {  month:  { $substr : ["$start\_date", 5, 2 ]}}  },count: {$sum:1}  }},{$sort:{count:-1}}])}    ]) | **SQL: 4secs 140 msecs**  **MongoDB:** |
| 8 Most busy start station | select count(\*),start\_station\_code,station.name  from station join OD on station.Code = OD.start\_station\_code  group by start\_station\_code,station.name  order by count(\*) desc | db.OD.aggregate([{$group: {\_id:"$start\_station\_code", count: {$sum:1},avgride: {$avg:"$duration\_sec"}}},{$sort:{count:-1}}]) | **SQL:**  **9 secs 187 msec**  **MongoDB:** |  |  |  |  |  |
| 9 Most busy end station | select count(\*),end\_station\_code,station.name  from station join OD on station.Code = OD.end\_station\_code  group by end\_station\_code,station.name  order by count(\*) desc | db.OD.aggregate([{$group: {\_id:"$end\_station\_code", count: {$sum:1},avgride: {$avg:"$duration\_sec"}}},{$sort:{count:-1}}]) | **SQL:**  **8 secs 941 msec**  **MongoDB:** |  |  |  |  |  |
| 10 Less busy station ( less visited) | select count(\*),end\_station\_code,station.name  from station join OD on station.Code = OD.end\_station\_code  group by end\_station\_code,station.name  order by count(\*) | db.OD.aggregate([{$group: {\_id:"$start\_station\_code", count: {$sum:1},avgride: {$avg:"$duration\_sec"}}},{$sort:{count:1}}]) | **SQL:**  **9 secs 327 msec**  **MongoDB:** |  |  |  |  |  |