

## Part 1

AQL:

```
FOR v, e, p IN 1..2 OUTBOUND 'airports/SEA' flights
FILTER v._id == 'airports/DFW'
FILTER p.edges[0].DepTime > 2150
FILTER p.edges[*].DayOfWeek ALL == 4
FILTER p.edges[0].UniqueCarrier == 'AS'
FILTER p.edges[0].Distance + p.edges[1].Distance <= 2000
SORT p.edges[0].Distance + p.edges[1].Distance ASC
return concat_separator('-', p.vertices[*].city,
    p.edges[*].UniqueCarrier,
    'Flight No', p.edges[*].FlightNum,
    'Departure Time', p.edges[*].DepTime,
    'Distance', p.edges[*].Distance,
    'Total', p.edges[0].Distance + p.edges[1].Distance)
```

Editor Running Queries Slow Query History

☆ Queries New Save as 1000 results

```
1 FOR v, e, p IN 1..2 OUTBOUND 'airports/SEA' flights
2 FILTER v._id == 'airports/DFW'
3 FILTER p.edges[0].DepTime > 2150
4 FILTER p.edges[*].DayOfWeek ALL == 4
5 FILTER p.edges[0].UniqueCarrier == 'AS'
6 FILTER p.edges[0].Distance + p.edges[1].Distance <= 2000
7 SORT p.edges[0].Distance + p.edges[1].Distance ASC
8 return concat_separator('-', p.vertices[*].city,
9     p.edges[*].UniqueCarrier,
10    'Flight No', p.edges[*].FlightNum,
11    'Departure Time', p.edges[*].DepTime,
12    'Distance', p.edges[*].Distance,
13    'Total', p.edges[0].Distance + p.edges[1].Distance)
```

| Key | Value                       |
|-----|-----------------------------|
|     | No bind parameters defined. |

Remove all results Create Debug Package Profile Explain Execute

Query 32 elements 260.311 ms

```
1 [
2  ["Seattle","Dallas-Fort Worth"]->["AS"]->Flight No->[806]->Departure Time->[2354]->Distance->[1660]->Total->1660",
3  ["Seattle","Dallas-Fort Worth"]->["AS"]->Flight No->[806]->Departure Time->[2352]->Distance->[1660]->Total->1660",
4  ["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight No->[162,1342]->Departure Time->[2157,1758]->Distance->[1107,868]
5  ["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight No->[162,1702]->Departure Time->[2157,1614]->Distance->[1107,868]
6  ["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","US"]->Flight No->[162,551]->Departure Time->[2157,1604]->Distance->[1107,868]
```

```
[
  ["Seattle","Dallas-Fort Worth"]->["AS"]->Flight No->[806]->Departure
Time->[2354]->Distance->[1660]->Total->1660",
```

[illegible]

```

["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight
No->[162,2256]->Departure Time->[2157,613]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight
No->[162,2222]->Departure Time->[2157,1137]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","US"]->Flight
No->[162,542]->Departure Time->[2157,959]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight
No->[162,1364]->Departure Time->[2157,938]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight
No->[162,1770]->Departure Time->[2157,832]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","US"]->Flight
No->[162,540]->Departure Time->[2157,750]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight
No->[162,558]->Departure Time->[2157,727]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","AA"]->Flight
No->[162,2256]->Departure Time->[2157,613]->Distance->[1107,868]->Total->1975",
["Seattle","Phoenix","Dallas-Fort Worth"]->["AS","US"]->Flight
No->[162,548]->Departure Time->[2157,2016]->Distance->[1107,868]->Total->1975"
]

```

## Part 2

### Cosmos Gremlin Query:

```

g.addV('person').property('LastName','Fuller').property('FirstName','Andrew').property('EmployeeID',2)
g.addV('person').property('LastName','Leverling').property('FirstName','Janet').property('EmployeeID',3).Property('Department','IT')
g.addV('person').property('LastName','Buchanan').property('FirstName','Steven').property('EmployeeID',5).Property('Department','Finance')
g.addV('person').property('LastName','King').property('FirstName','Robert').property('EmployeeID',7).Property('Department','Finance')
g.addV('person').property('LastName','Chang').property('FirstName','Leslie').property('EmployeeID',12).Property('Department','Finance')
g.addV('person').property('LastName','Ng').property('FirstName','Jordan').property('EmployeeID',14).Property('Department','Finance')
g.addV('person').property('LastName','Black').property('FirstName','Lela').property('EmployeeID',15).Property('Department','IT')
g.addV('person').property('LastName','Thompson').property('FirstName','Connie').property('EmployeeID',21).Property('Department','IT')

g.V().hasLabel('person').has('EmployeeID',21).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',15))
g.V().hasLabel('person').has('EmployeeID',15).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',7))

```

```
g.V().hasLabel('person').has('EmployeeID',15).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',2))
g.V().hasLabel('person').has('EmployeeID',14).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',7))
g.V().hasLabel('person').has('EmployeeID',12).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',7))
g.V().hasLabel('person').has('EmployeeID',7).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',3))
g.V().hasLabel('person').has('EmployeeID',7).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',2))
g.V().hasLabel('person').has('EmployeeID',7).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',5))
g.V().hasLabel('person').has('EmployeeID',3).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',2))
g.V().hasLabel('person').has('EmployeeID',5).addE('reportsto').to(g.V().hasLabel('person').has('EmployeeID',2))
```

Q2

```
g.V().hasLabel('person').has('Department','IT')
```

Home

Graph

Query 1

g.V().hasLabel('person').has('Department','IT')

Execute Gremlin Query

JSON

Graph

Query Stats

Results

4bac6ee1-ea32-4424-af5f-...

93ba37ce-ea4b-4886-94c7...

e419ada1-e0ef-4a0e-b2d6...

Graph

> 4bac6ee1-ea32-4424-af5f-e08d86cb8737

Properties

id

4bac6ee1-ea32-4424-af5f-e08d86cb8737

label

person

LastName

Leverling

FirstName

Janet

EmployeeID

3

Department

IT

Home

Graph

Query 1

g.V().hasLabel('person').has('Department','IT')

Execute Gremlin Query

JSON

Graph

Query Stats

Results

4bac6ee1-ea32-4424-af5f-...

93ba37ce-ea4b-4886-94c7-...

e419ada1-e0ef-4a0e-b2d6...

Graph

> 93ba37ce-ea4b-4886-94c7-5318cb390666

Properties

id

93ba37ce-ea4b-4886-94c7-5318cb390666

label

person

LastName

Black

FirstName

Lela

EmployeeID

15

Department

IT

Sources

Home

Graph ×

! Query 1

g.V().hasLabel('person').has('Department','IT')

Execute Gremlin Query ×

JSON

Graph

Query Stats

Results

4bac6ee1-ea32-4424-af5f-...

93ba37ce-ea4b-4886-94c7...

e419ada1-e0ef-4a0e-b2d6-...

Graph

> e419ada1-e0ef-4a0e-b2d6-3cf429217ce5

Properties

|            |                                      |
|------------|--------------------------------------|
| id         | e419ada1-e0ef-4a0e-b2d6-3cf429217ce5 |
| label      | person                               |
| LastName   | Thompson                             |
| FirstName  | Connie                               |
| EmployeeID | 21                                   |
| Department | IT                                   |

Sources

Q3

`g.V().hasLabel('person').has('EmployeeID',2).inE('reportsto').outV().hasLabel('person').values('EmployeeID')`

`g.V().hasLabel('person').has('EmployeeID',2).inE('reportsto').outV().hasLabel('person').inE('reportsto').outV().hasLabel('person').values('EmployeeID').dedup()`

[We then get a union of these 2 query's result together and get all employees that has Employee 2 as their direct and indirect manager]

```
g.V().hasLabel('person').has('EmployeeID',2).inE('reportsto').outV().hasLabel('person').values('EmployeeID')
```

Execute Gremlin Query ×

JSON [Query Stats](#)

```
[  
  15,  
  7,  
  3,  
  5  
]
```

```
g.V().hasLabel('person').has('EmployeeID',2).inE('reportsto').outV().hasLabel('person').inE('reportsto').outV().hasLabel('person').values('EmployeeID').dedup()
```

Execute Gremlin Query ×

JSON [Query Stats](#)

```
[  
  21,  
  15,  
  14,  
  12,  
  7  
]
```