1. SIMPLE QUERY

1. Find all startups in the Sustainability industry

{ "industry": "Sustainability" }

2. Find all women entrepreneurs from Northeastern University

Entrepreneur:

{ "university": "Northeastern University" }

{ "entrepreneur_id": 1, "university": 1, "major": 1, "person_id": 1 }

2. COMPLEX QUERY (multiple conditions)

1. Find investors who can invest at least $100,000 and prefer "Tech" or "Health" industries

Investor collection
Uses $gte, $regex, and $or

FILTER:

```
{
  "capacity_max": { "$gte": 100000 },
  "$or": [
   { "preferred_industries": { "$regex": "Tech", "$options": "i" } },
   { "preferred_industries": { "$regex": "Health", "$options": "i" } }
  ]
}
```

2. Find events hosted by any student organization that are related to Harvard and are NOT Networking events

EVENT

```
{
  "host": { "$regex": "student org", "$options": "i" },
  "title": { "$regex": "harvard", "$options": "i" },
  "type": { "$nin": ["Networking"] }
}
```

3. AGGREGATE QUERY

Query 1 — Top 10 startups by total funding received

```
[

{

$lookup: {

from: "FundingRound",

localField: "startup_id",

foreignField: "startup_id",

as: "funding"

}

},

{

$addFields: {

total_funding: { $sum: "$funding.amount" },

num_rounds: { $size: "$funding" }

}

},
```

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```
  { $sort: { total_funding: -1 } },

  {

    $project: {

      startup_id: 1,

      name: 1,

      industry: 1,

      total_funding: 1,

      num_rounds: 1

    }

  },

  { $limit: 10 }

]
```

Query 2 — Top mentors by number of startups they mentor

```
[

{

$lookup: {

from: "StartupMentor",

localField: "mentor_id",

foreignField: "mentor_id",

as: "mentorships"

}

},

{

$addFields: {

startups_mentored: { $size: "$mentorships" }

}

},

{ $sort: { startups_mentored: -1 } },

{

$project: {

mentor_id: 1,

person_id: 1,

expertise: 1,

organization: 1,

startups_mentored: 1

}

},

{ $limit: 10 }

]
```

Query 3 — Investors who invested in the most startups

```
[

{
```

```
$lookup: {

from: "FundingInvestor",

localField: "investor_id",

foreignField: "investor_id",

as: "investments"

}

},

{

$addFields: {

startups_invested: { $size: "$investments" }

}

},

{ $sort: { startups_invested: -1 } },

{

$project: {

investor_id: 1,

person_id: 1,

organization: 1,

startups_invested: 1

}

},

{ $limit: 10 }

]
```

Query 4 — Events with the highest attendance

```
[

{

$lookup: {

from: "EntrepreneurEvent",

localField: "event_id",

foreignField: "event_id",
```

```
as: "attendees"

}

},

{

$addFields: {

total_attendees: { $size: "$attendees" }

}

},

{ $sort: { total_attendees: -1 } },

{

$project: {

event_id: 1,

name: 1,

date: 1,

location: 1,

total_attendees: 1

}

},

{ $limit: 10 }

]
```

Query 5 — Startups with both the highest funding and the most mentors

```
[

{

$lookup: {

from: "FundingRound",

localField: "startup_id",

foreignField: "startup_id",

as: "funding"

}

},
```

```
{
$lookup: {
from: "StartupMentor",
localField: "startup_id",
foreignField: "startup_id",
as: "mentors"
}
},
{
$addFields: {
total_funding: { $sum: "$funding.amount" },
num_mentors: { $size: "$mentors" }
}
},
  { $sort: { total_funding: -1, num_mentors: -1 } },
  {
    $project: {
      startup_id: 1,
      name: 1,
      industry: 1,
      total_funding: 1,
      num_mentors: 1
    }
  },
  { $limit: 10 }
]
```