Artefakt for hvilke queries der er brugt til udtræk af de to databaser

Spørgsmål 1

Mysql

```
with cities as (
    select *
    from Locations
    where name = ?
)
select distinct BookParts.id, BookParts.title,BookParts.author
from cities
left join BookLocations on BookLocations.location_id = cities.id
left join BookParts     on BookParts.id = BookLocations.bookparts_id
order by BookParts.title
```

MongoDb

```
Locations.aggragate
[ { "$match": { "name": ?} },
  { "$limit": 1 },
  { "$unwind": "$booksRef" },
  { "$project": {
      "Ref": "$booksRef",
      "coords": "$coordinate"
  } },
  { "$lookup": {
      "from": "Books",
      "localField": "Ref",
      "foreignField": "id",
      "as": "Result"
  } },
  { "$project": {
      "author": { "$arrayElemAt": ["$Result.author", 0] },
      "title": { "$arrayElemAt": ["$Result.title", 0] },
      "id": { "$arrayElemAt": ["$Result.id", 0] }
  } },
  { "$sort": { "title": 1 } } ]
```

Spørgsmål 2

Mysql

```
with selectedtitles as (
    select *
    from BookParts
    where title = ?
)
select selectedtitles.id,  title,  part,   author,     location_id,
       index_in_book,      name as locationName,   ST_AsText(coordinate) as coordinate,
       population,         timezone
from selectedtitles
left join BookLocations on BookLocations.bookparts_id = selectedtitles.id
left join Locations         on Locations.id = BookLocations.location_id
```

MongoDb

```
Books.aggragate
[ { "$match": { "title": ? } },
  { "$unwind": "$locations" },
  { "$project": {
      "locRef": "$locations.locationRef"
  } },
  { "$lookup": {
      "from": "Locations",
      "localField": "locRef",
      "foreignField": "id",
      "as": "locationsInBook"
  } },
  { "$project": {
      "locationName": { "$arrayElemAt": ["$locationsInBook.name", 0] },
      "coords": { "$arrayElemAt": ["$locationsInBook.coordinate", 0] },
      "location_id": { "$arrayElemAt": ["$locationsInBook.id", 0] }
  } } ]
```

Spørgsmål 3

Mysql

```
with author as (
    select *
    from BookParts
    where author = ?
),
locs as (
    select id,
    JSON_OBJECT("name", name,
                            "population", population,
                            "location", ST_AsText(coordinate)) as locObj
    from Locations
)
select author.id,   title,  part,   author, json_arrayagg(locObj) as "locations"
from author
left join BookLocations on BookLocations.bookparts_id = author.id
left join locs          on BookLocations.location_id = locs.id
group by author.id
```

MongoDb

```
Books.aggragate
[ { "$match": { "author": ?  },
  { "$unwind": "$locations" },
  { "$project": {
      "title": "$title",
      "locRef": "$locations.locationRef"
  } },
  { "$lookup": {
      "from": "Locations",
      "localField": "locRef",
      "foreignField": "id",
      "as": "locationsInBook"
  } },
  { "$project": {
      "title": "$title",
      "locationName": { "$arrayElemAt": ["$locationsInBook.name", 0] },
      "coords": { "$arrayElemAt": ["$locationsInBook.coordinate", 0] }
  } } ]
```

Spørgsmål 4

Mysql

```
with cities as (
    select *, ST_Distance(ST_GeomFromText(?, 4326), coordinate)/1000 as km_away
    from Locations where
    ST_Contains(ST_GeomFromText(ST_AsText(ST_Buffer(ST_GeomFromText(?, 0),
?/111.226)), 4326), coordinate)
)
select distinct BookParts.id, title, part, author,  ST_AsText(coordinate) as point, km_away,
name
from cities
inner join BookLocations  on cities.id = BookLocations.location_id
left join BookParts       on BookParts.id = BookLocations.bookparts_id
order by km_away
```

MongoDb

```
Locations.aggragate
[ { "$geoNear": {
     "near": {
       "type": "Point",
       "coordinates": [ ?, ? ]
     },
     "distanceField": "distance",
     "maxDistance": ?, // in meters
     "spherical": true,
     "key": "coordinate"
 } },
 { "$unwind": "$booksRef" },
 { "$lookup": {
     "from": "Books",
     "localField": "booksRef",
     "foreignField": "id",
     "as": "Book"
 } },
 { "$project": {
     "Title": "$Book.title",
     "Author": "$Book.author",
     "Part": "$Book.part",
     "Coords": "$coordinate",
     "Population": "$population",
     "City": "$name",
     "DistanceInMeters": "$distance"
 } } ]
```