CASO PRÁCTICO MONGO

Crear una base de datos denominada **practicasimf. En esta práctica me vais a ayudar a poner las notas finales!**

- **Pregunta 1: Importar los siguientes documentos (1 pto)**

{ _id: 1, name: Juanito, group:'A', scores:[{ score: 55, type:'exam' },{ score: 30, type: 'quiz' },{ score: 81, type: 'homework' }]},
{ _id: 2, name: Luisin, group:'A', scores: [{ score: 80, type: 'exam' },{ score: 82, type: 'quiz' },{ score: 90, type: 'homework' }]},
{ _id: 3,name: Merceditas, group:'A, scores: [{ score: 95, type: 'exam' },{ score: 98, type: 'quiz' },{ score: 100, type: 'homework' }]},
{_id: 4,name: Calisto,group:'B', scores: [{ score: 45, type: 'exam' },{ score: 98, type: 'quiz' },{ score: 55, type: 'homework' }]},
{ _id: 5,name: Merylu, group:'B', scores: [{ score: 10, type: 'exam' },{ score: 60, type: 'quiz' },{ score: 80, type: 'homework' }]},
{ _id: 6,name: 'Sandrita'', group:'B', scores: [{ score: 90, type: 'exam' },{ score: 70, type: 'quiz' },{ score: 50, type: 'homework' }]}

Primero abrimos la sesión en mongodb:

imfdata@datascienes:~$ sudo docker start mongo
[sudo] contraseña para imfdata:
mongo
imfdata@datascienes:~$ sudo docker exec -it mongo bash
root@13e6561c38af:/# mongosh
Current Mongosh Log ID: 633024276378ee6198bf2dd8
Connecting to:
mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+1.5.4
Using MongoDB: 6.0.1
Using Mongosh: 1.5.4

For mongosh info see: https://docs.mongodb.com/mongodb-shell/

The server generated these startup warnings when booting
2022-09-25T09:16:06.666+00:00: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine. See http://dochub.mongodb.org/core/prodnotes-filesystem
2022-09-25T09:16:07.607+00:00: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
2022-09-25T09:16:07.607+00:00: vm.max_map_count is too low

Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

```
   The monitoring data will be available on a MongoDB website with a unique URL accessible to you
   and anyone you share the URL with. MongoDB may use this information to make product
   improvements and to suggest MongoDB products and deployment options to you.

   To enable free monitoring, run the following command: db.enableFreeMonitoring()
   To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
------

test> show databases
admin    40.00 KiB
config  108.00 KiB
imf     144.00 KiB
local    72.00 KiB
test> use imf
switched to db imf
```

- **Pregunta 1: Importar los siguientes documentos (1 pto)**

```
imf> db.practicasimf.insertMany([
 { _id: 1, name:' Juanito', group:'A', scores:[{ score: 55, type:'exam' },{ score: 30, type: 'quiz' },{ score: 81, type:
'homework' }]},
... { _id: 2, name:' Luisin', group: 'A', scores: [{ score: 80, type: 'exam' },{ score: 82, type: 'quiz' },{ score: 90, type:
'homework' }]},
... { _id: 3,name:' Merceditas', group:'A', scores: [{ score: 95, type: 'exam' },{ score: 98, type: 'quiz' },{ score: 100,
type: 'homework' }]},
... {_id: 4,name:'Calisto',group:'B', scores: [{ score: 45, type: 'exam' },{ score: 98, type: 'quiz' },{ score: 55, type:
'homework' }]},
... { _id: 5,name:' Merylu', group:'B', scores: [{ score: 10, type: 'exam' },{ score: 60, type: 'quiz' },{ score: 80, type:
'homework' }]},
... { _id: 6,name: 'Sandrita', group:'B', scores: [{ score: 90, type: 'exam' },{ score: 70, type: 'quiz' },{ score: 50,
type: 'homework' }]}
... ]
... )
{
  acknowledged: true,
  insertedIds: { '0': 1, '1': 2, '2': 3, '3': 4, '4': 5, '5': 6 }
}
imf> db.practicasimf.find().pretty()
[
  {
    _id: 1,
    name: ' Juanito',
    group: 'A',
    scores: [
      { score: 55, type: 'exam' },
```

```
    { score: 30, type: 'quiz' },
    { score: 81, type: 'homework' }
  ]
},
{
  _id: 2,
  name: ' Luisin',
  group: 'A',
  scores: [
    { score: 80, type: 'exam' },
    { score: 82, type: 'quiz' },
    { score: 90, type: 'homework' }
  ]
},
{
  _id: 3,
  name: ' Merceditas',
  group: 'A',
  scores: [
    { score: 95, type: 'exam' },
    { score: 98, type: 'quiz' },
    { score: 100, type: 'homework' }
  ]
},
{
  _id: 4,
  name: 'Calisto',
  group: 'B',
  scores: [
    { score: 45, type: 'exam' },
    { score: 98, type: 'quiz' },
    { score: 55, type: 'homework' }
  ]
},
{
  _id: 5,
  name: ' Merylu',
  group: 'B',
  scores: [
    { score: 10, type: 'exam' },
    { score: 60, type: 'quiz' },
    { score: 80, type: 'homework' }
  ]
},
{
  _id: 6,
  name: 'Sandrita',
  group: 'B',
```

```
    scores: [
      { score: 90, type: 'exam' },
      { score: 70, type: 'quiz' },
      { score: 50, type: 'homework' }
    ]
  }
]
```

- **Pregunta 2: Devuelve sólo el nombre de los alumnos del grupo ‘B’ (1.5 pto)**

```
imf>  db.practicasimf.find({group:'B'},{name:1,_id:0})

[ { name: 'Calisto' }, { name: ' Merylu' }, { name: 'Sandrita' } ]
```

- **Pregunta 3: Recupera la nota del examen de Sandrita (1.5 pto)**

```
imf>
db.practicasimf.find({name:"Sandrita"},{_id:0,name:1,"scores":{$elemMatch:{"type":"exam"}}},{"scores.score":1})

[  { name: 'Sandrita', scores: [ { score: 90, type: 'exam' } ] }
```

- **Pregunta 4: Me he equivocado… Merylu tuvo un 100 en su examen. Actualiza su nota:**
- **Ojo, aquí voy a evaluar tu capacidad de buscar soluciones.**
- **Si actualizas todo el documento tienes hasta 1 punto en la pregunta.**
- **Si usas una solución más imaginativa como un $set con el operador nombrearray.“$[elem].[subcamposiesundoc]” y $arrayFilters:[{elem:valor}] tendrás 2 puntos. Ten en cuenta a la hora de usarlos que es un array de subdocumentos!!**

```
imf>db.practicasimf.updateOne({"name":"Merylu"},{$set: {"scores.$[scor].score":100}},{arrayFilters:[{"scor.type":
{ $eq:"exam"}}]})
```

- **Pregunta 5: Calcula la nota media de cada tipo de evaluación, es decir, de los quizz, de los exámenes y de los homeworks (2 pts)**

```
imf>db.practicasimf.aggregate([{"$unwind":"$scores"},{$group:{_id:"$scores.type",
"media":{$avg: $scores.score"}}}])
[
  { _id: 'quiz', media: 73 },
  { _id: 'exam', media: 62.5 },
  { _id: 'homework', media: 76 }
]
```

- **Pregunta 6: Asume que todos las evaluaciones valen lo mismo. Devuelve aquel alumno que haya obtenido una mejor nota media (2 pts).**

```
imf> db.practicasimf.aggregate([{"$unwind":"$scores"},{$group: {_id: "$name", "media": {$avg:
"$scores.score"}}},{$sort: {media: -1}},{$limit:1}])
```

[{ _id: ' Merceditas', media: 97.66666666666667 }]