

# Proyecto-Prueba de Desempeño NoSQL

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**MongoDB**

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Link del dataset : <https://github.com/JafetMs/Proyecto-MD--appPlayStore>

## Diccionario de Datos

Campo	Tipo de dato	Nulo	Longitud	Descripción
_id	ObjectId	No		Id que asigna mongo a cada documento.
App	String	No		Nombre de la App
Category	String	No		Categoría de la App
Rating	Number	No		Puntuación de la aplicación.
Reviews	Number	No		Número de opiniones de la aplicación
Size	String	No		Tamaño de almacenamiento.
Installs	Number	No		Número de instalaciones
Type	String	No		Si es de paga o gratis
Price	String	No		Precio de la aplicación
Content Rating	String	No		Público dirigido
Genres	String	No		Generos de la App

Last Updated	String	No		Última actualización
Current Ver	String			Versión Actual
Android Ver	String			Versión de Android requerida

**La Base de datos a Modelar con MongoDB se llama playStoreApps y almacenaremos sus documentos en las colecciones**

**apps,apps2 y appsMain.**

**Las colecciones apps y apps2 son copias del dataset original donde podemos hacer distintas consultas sin el riesgo de perder datos mientras que apps Main es donde está el dataset Original con muy pocos cambios**

# MongoDB

## Importación de Datos

El primer paso que debemos hacer antes de importar los datos en MongoDB es crear la base de datos.

En este caso usaré la Shell de Mongo para poder crear la base de datos.



Para poder hacer este proceso primero debemos inicializar MongoDB con el comando en la terminal de su preferencia “Mongo”.

```
Windows PowerShell
PS C:\Users\JafetMs\Desktop\Proyecto__PlaySotre> mongo
MongoDB shell version v5.0.14
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("546226f0-5cbc-48d5-8353-a782fcc91773") }
MongoDB server version: 5.0.14
=====
Warning: the "mongo" shell has been superseded by "mongosh",
which delivers improved usability and compatibility. The "mongo" shell has been deprecated and will be removed in
an upcoming release.
For installation instructions, see
https://docs.mongodb.com/mongodb-shell/install/
=====
The server generated these startup warnings when booting:
  2022-12-03T04:58:20.827-06:00: Access control is not enabled for the database. Read and write access to data and
  configuration is unrestricted
-----
  Enable MongoDB's free cloud-based monitoring service, which will then receive and display
  metrics about your deployment (disk utilization, CPU, operation statistics, etc).

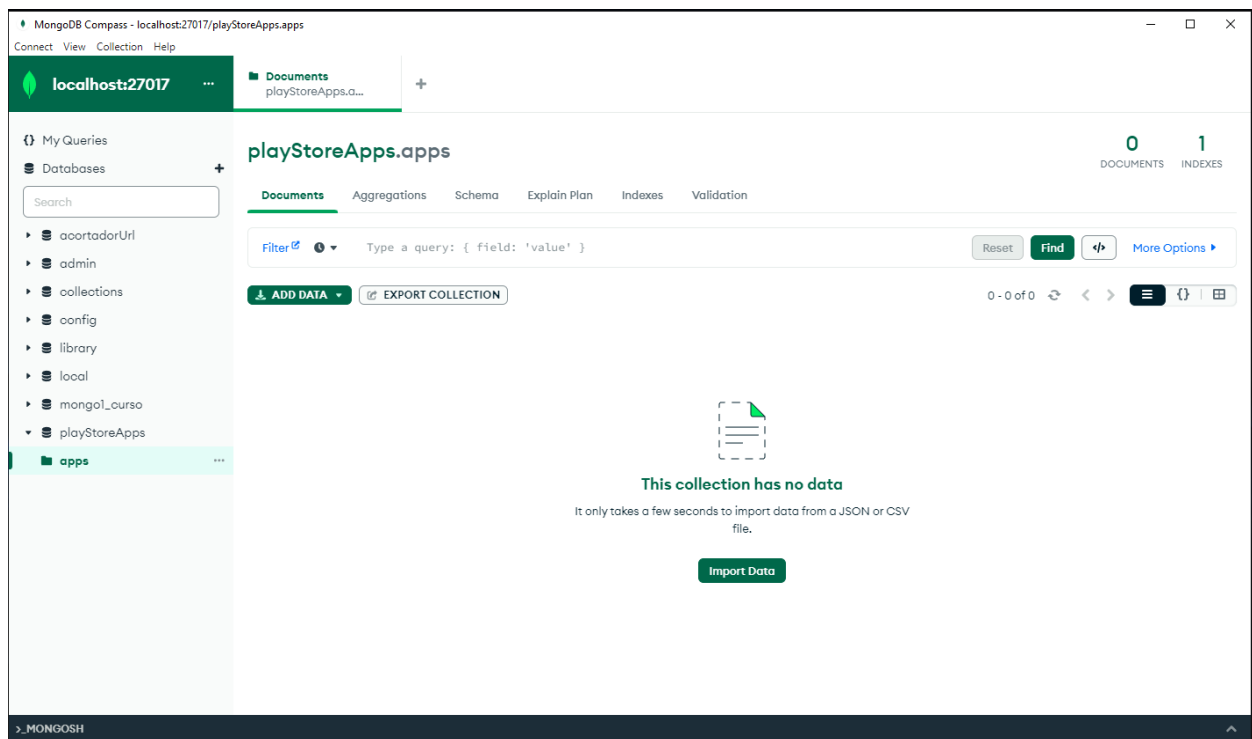
  The monitoring data will be available on a MongoDB website with a unique URL accessible to you
  and anyone you share the URL with. MongoDB may use this information to make product
  improvements and to suggest MongoDB products and deployment options to you.

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

La primera sentencia que usamos fue el “use” para poder crear la base de datos. Después nos aseguramos que estamos trabajando en la base de datos playStoreApps usando el comando db. Finalmente creamos la colección donde estarán los datos usando db.createCollection(‘ ‘)

```
Windows PowerShell
> use playStoreApps
switched to db playStoreApps
> db
playStoreApps
> db.createCollection('apps')
{ "ok" : 1 }
> show collections
apps
```

Ahora que creamos DB hacemos uso del MongoDB Compass para poder importar los datos del CSV donde se almacenan los datos.



## Importamos datos del archivo csv

Import To Collection playStoreApps.apps

Select File  
googleplaystore.csv

Input File Type  
JSON CSV

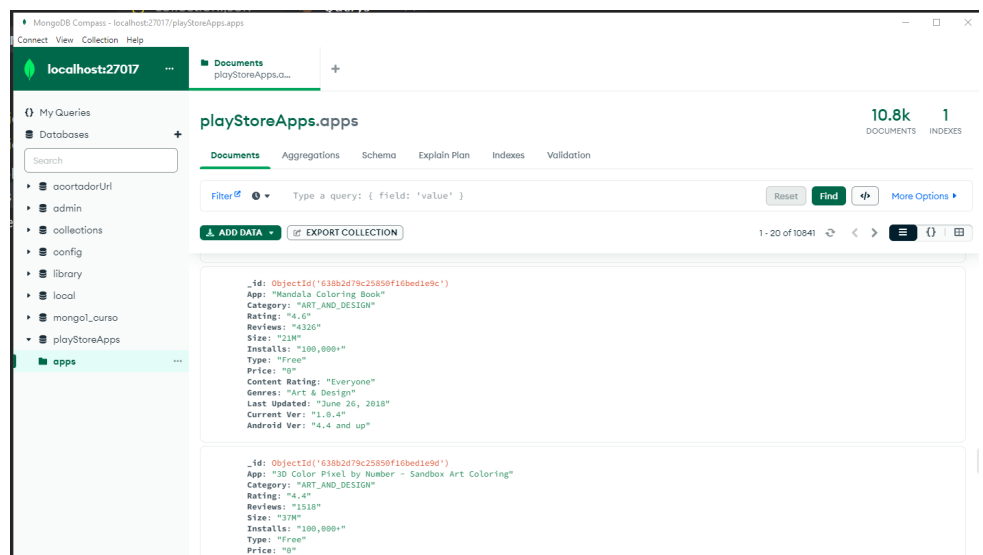
Options  
Select delimiter COMMA  
☒ Ignore empty strings  
☐ Stop on errors

Specify Fields and Types

	App (string)	Category (string)	Rating (string)
1	Photo Editor & Candy Camera & Grid & ScrapBook	ART_AND_DESIGN	4.1
2	Coloring book moana	ART_AND_DESIGN	3.9
3	U Launcher Lite - FREE Live Cool Themes, Hide Apps	ART_AND_DESIGN	4.7
4	Sketch - Draw & Paint	ART_AND_DESIGN	4.5
5	Pixel Draw - Number Art Coloring Book	ART_AND_DESIGN	4.3
6	Paper Flowers Instructions	ART_AND_DESIGN	4.4
7	Smoke Effect Photo Maker - Smoke Editor	ART_AND_DESIGN	3.8
8	Infinite Painter	ART_AND_DESIGN	4.1
9	Garden Coloring Book	ART_AND_DESIGN	4.4
10	Kids Paint Free - Drawing Fun	ART_AND_DESIGN	4.7

CANCEL IMPORT

Ahora podemos ver  
todos nuestros datos  
importados desde el  
MongoDB Compass



O también podemos verla desde la terminal haciendo uso de la sentencia `"db.apps.find().pretty().limit(3)"`, la cual nos mostrará los primeros 3 documentos

```
Windows PowerShell
> db.apps.find().pretty().limit(3)
{
  "_id" : ObjectId("638b2d79c25850f16bed1e8f"),
  "App" : "Photo Editor & Candy Camera & Grid & ScrapBook",
  "Category" : "ART_AND_DESIGN",
  "Rating" : "4.1",
  "Reviews" : "159",
  "Size" : "19M",
  "Installs" : "10,000+",
  "Type" : "Free",
  "Price" : "0",
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design",
  "Last Updated" : "January 7, 2018",
  "Current Ver" : "1.0.0",
  "Android Ver" : "4.0.3 and up"
}

{
  "_id" : ObjectId("638b2d79c25850f16bed1e90"),
  "App" : "Coloring book moana",
  "Category" : "ART_AND_DESIGN",
  "Rating" : "3.9",
  "Reviews" : "967",
  "Size" : "14M",
  "Installs" : "500,000+",
  "Type" : "Free",
  "Price" : "0",
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design;Pretend Play",
  "Last Updated" : "January 15, 2018",
  "Current Ver" : "2.0.0",
  "Android Ver" : "4.0.3 and up"
}

{
  "_id" : ObjectId("638b2d79c25850f16bed1e91"),
  "App" : "U Launcher Lite – FREE Live Cool Themes, Hide Apps",
  "Category" : "ART_AND_DESIGN",
  "Rating" : "4.7",
  "Reviews" : "87510",
  "Size" : "8.7M",
  "Installs" : "5,000,000+",
  "Type" : "Free",
  "Price" : "0",
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design",
  "Last Updated" : "August 1, 2018",
  "Current Ver" : "1.2.4",
  "Android Ver" : "4.0.3 and up"
}
```



## Sentencias

### Sentencias Insert

1. Usar la sentencia insertOne usando la terminal

Insertarse una app a nuestra colección de la base de datos

```
Windows PowerShell
> db.apps.insertOne({
...   "App" : "HBO MAX",
...   "Category" : "Entertainment",
...   "Rating" : "4.4",
...   "Reviews" : "486,000",
...   "Size" : "52 MB",
...   "Installs" : "100,000,000+",
...   "Type" : "Free",
...   "Price" : "0",
...   "Content Rating" : "+17",
...   "Genres" : "Entertainment",
...   "Last Updated" : "June 29,2021",
...   "Current Ver" : "52.50.0.6",
...   "Android Ver" : "5.0 and up"
... })
{
  "acknowledged" : true,
  "insertedId" : ObjectId("638c748607771e22c568ba8d")
}
```

Podemos verificar se ha insertado correctamente mediante una consulta por el nombre de la App

```
Windows PowerShell
> db.apps.find({App: "HBO MAX"}).pretty()
{
  "_id" : ObjectId("638c748607771e22c568ba8d"),
  "App" : "HBO MAX",
  "Category" : "Entertainment",
  "Rating" : "4.4",
  "Reviews" : "486,000",
  "Size" : "52 MB",
  "Installs" : "100,000,000+",
  "Type" : "Free",
  "Price" : "0",
  "Content Rating" : "+17",
  "Genres" : "Entertainment",
  "Last Updated" : "June 29,2021",
  "Current Ver" : "52.50.0.6",
  "Android Ver" : "5.0 and up"
}
```

si

2. En esa usaremos la sentencia insertMany para poder agregar mas de un objeto json a la colección

En esta ocasión agregare 3 apps a la colección

```
Windows PowerShell
> db.apps.insertMany([
...   {
...     "App" : "Wild Rift",
...     "Category" : "Rol_Action",
...     "Rating" : "3.8",
...     "Reviews" : "2,081,280",
...     "Size" : "3.48 GB",
...     "Installs" : "50,000,000",
...     "Type" : "Free",
...     "Price" : "0",
...     "Content Rating" : "Everyone",
...     "Genres" : "MOBA",
...     "Last Updated" : "31 October, 2022",
...     "Current Ver" : "3.5.06093",
...     "Android Ver" : "5.0 and up"
...   },
...   {
...     "App" : "Apex Legends Mobile",
...     "Category" : "Shooter",
...     "Rating" : "4.1",
...     "Reviews" : "695,420",
...     "Size" : "2GB",
...     "Installs" : "10,000,000+",
...     "Type" : "Free",
...     "Price" : "0",
...     "Content Rating" : "+16",
...     "Genres" : "Action",
...     "Last Updated" : "May 16, 2022",
...     "Current Ver" : "1.2.886.103",
...     "Android Ver" : "6.0 and up"
...   },
...   {
...     "App" : "Disney+",
...     "Category" : "Entertainment",
...     "Rating" : "4.5",
...     "Reviews" : "2,060,774",
...     "Size" : "20 MB",
...     "Installs" : "100,000,000+",
...     "Type" : "Free",
...     "Price" : "0",
...     "Content Rating" : "+9",
...     "Genres" : "Entertainment",
...     "Last Updated" : "December 2, 2022",
...     "Current Ver" : "2.15.0-rc8",
...     "Android Ver" : "5.0 and up"
...   }
... ])
```

También notamos que los objetos fueron agregados con su respectivo ObjectId

```
{
  "acknowledged" : true,
  "insertedIds" : [
    ObjectId("638c76bb07771e22c568ba8e"),
    ObjectId("638c76bb07771e22c568ba8f"),
    ObjectId("638c76bb07771e22c568ba90")
  ]
}
```

3. En esta ocasión usare la sentencia insert para agregar uno o mas elementos. Esta se usa cuando no sabemos la cantidad de elementos a agregar.

```
Windows PowerShell
> db.apps.insert(
... [
...   {
...     "App" : "Minecraft",
...     "Category" : "FAMILY",
...     "Rating" : "4.6",
...     "Reviews" : "4.78M",
...     "Size" : "782 MB",
...     "Installs" : "10,000,000+",
...     "Type" : "Paid",
...     "Price" : "$6.99",
...     "Content Rating" : "Everyone 10+",
...     "Genres" : "Arcade;Action & Adventure",
...     "Last Updated" : "November 23, 2022",
...     "Current Ver" : "1.19.60.22",
...     "Android Ver" : "5.0 and up"
...   },
...   {
...     "App" : "Warzone 2.0",
...     "Category" : "Shooter",
...     "Rating" : "4.8",
...     "Reviews" : "1.3M",
...     "Size" : "2.4 GB",
...     "Installs" : "4,000,000+",
...     "Type" : "Free",
...     "Price" : "$0.00",
...     "Content Rating" : "Everyone 13+",
...     "Genres" : "Action",
...     "Last Updated" : "November 16, 2022",
...     "Current Ver" : "2.0",
...     "Android Ver" : "6.0 and up"
...   },
...   {
...     "App" : "Spotify",
...     "Category" : "Music",
...     "Rating" : "4.5",
...     "Reviews" : "27.5M",
...     "Size" : "2.4 GB",
...     "Installs" : "100,000,000",
...     "Type" : "Free",
...     "Price" : "$0.00",
...     "Content Rating" : "Everyone 13+",
...     "Genres" : "Music",
...     "Last Updated" : "November 30, 2022",
...     "Current Ver" : "8.7.88.496",
...     "Android Ver" : "5.0 and up"
...   }
... ]
> ]]
```

También notamos que los objetos fueron agregados con su respectivo ObjectId

```
BulkWriteResult({
  "writeErrors" : [ ],
  "writeConcernErrors" : [ ],
  "nInserted" : 3,
  "nUpserted" : 0,
  "nMatched" : 0,
  "nModified" : 0,
  "nRemoved" : 0,
  "upserted" : [ ]
})
```

El mensaje dice que se han insertado 3 documentos correctamente.

#### 4. Insert Ordered false

Agregar 3 apps a la colección con ordered : false

Con esto logramos indicar a mongo que no hay orden en específico

```
> db.apps.insert(
... [
...   {
...     "App" : "Wild Rift",
...     "Category" : "Rol_Action",
...     "Rating" : "3.8",
...     "Reviews" : "2,081,280",
...     "Size" : "3.48 GB",
...     "Installs" : "50,000,000",
...     "Type" : "Free",
...     "Price" : "0",
...     "Content Rating" : "Everyone",
...     "Genres" : "MOBA",
...     "Last Updated" : "31 October, 2022",
...     "Current Ver" : "3.5.06093",
...     "Android Ver" : "5.0 and up"
...   },
...   {
...     "App" : "Apex Legends Mobile",
...   },
... ],
... {
...   "ordered": false
... }
... );
...
... "Genres" : "Action",
... "Last Updated" : "May 16, 2022",
... "Current Ver" : "1.2.886.103",
... "Android Ver" : "6.0 and up"
... },
... {
...   "App" : "Disney+",
...   "Category" : "Entertainment",
...   "Rating" : "4.5",
...   "Reviews" : "2,060,774",
...   "Size" : "20 MB",
...   "Installs" : "100,000,000+",
...   "Type" : "Free",
...   "Price" : "0",
...   "Content Rating" : "+9",
...   "Genres" : "Entertainment",
...   "Last Updated" : "December 2, 2022",
...   "Current Ver" : "2.15.0-rc8",
...   "Android Ver" : "5.0 and up"
... }
... ],
```

Notamos que se ha insertado más de un elemento correctamente.

```
BulkWriteResult({
  "writeErrors" : [ ],
  "writeConcernErrors" : [ ],
  "nInserted" : 3,
  "nUpserted" : 0,
  "nMatched" : 0,
  "nModified" : 0,
  "nRemoved" : 0,
  "upserted" : [ ]
})
```

## 5. Agregaré 3 apps a la colección con `ordered : true`

Con esto logramos indicar a mongo que hay orden en específico

```
Windows PowerShell
... [
...   {
...     "App" : "Wild Rift",
...     "Category" : "Rol_Action",
...     "Rating" : 3.8,
...     "Reviews" : 2081280,
...     "Size" : "3.48 GB",
...     "Installs" : "50,000,000",
...     "Type" : "Free",
...     "Price" : "0",
...     "Content Rating" : "Everyone",
...     "Genres" : "MOBA",
...     "Last Updated" : "31 October, 2022",
...     "Current Ver" : "3.5.06093",
...     "Android Ver" : "5.0 and up"
...   },
...   {
...     "App" : "Apex Legends Mobile",
...     "Category" : "Shooter",
...     "Rating" : 4.1,
...     "Reviews" : 695420,
...     "Size" : "2GB",
...     "Installs" : 100000000,
...     "Type" : "Free",
...     "Price" : "0",
...     "Content Rating" : "+16",
...     "Genres" : "Action",
...     "Last Updated" : "May 16, 2022",
...     "Current Ver" : "1.2.886.103",
...     "Android Ver" : "6.0 and up"
...   },
...   {
...     "App" : "Disney+",
...     "Category" : "Entertainment",
...     "Rating" : 4.5,
...     "Reviews" : 2060774,
...     "Size" : "20 MB",
...     "Installs" : 100000000,
...     "Type" : "Free",
...     "Price" : "0",
...     "Content Rating" : "+9",
...     "Genres" : "Entertainment",
...     "Last Updated" : "December 2, 2022",
...     "Current Ver" : "2.15.0-rc8",
...     "Android Ver" : "5.0 and up"
...   }
... ],
... {
...   "ordered": true
... }
```

```
BulkWriteResult({
  "writeErrors" : [ ],
  "writeConcernErrors" : [ ],
  "nInserted" : 3,
  "nUpserted" : 0,
  "nMatched" : 0,
  "nModified" : 0,
  "nRemoved" : 0,
  "upserted" : [ ]
})
```

Se insertó correctamente

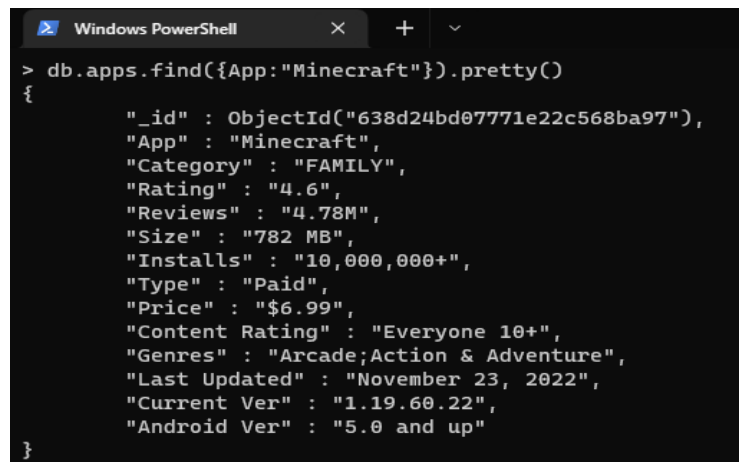
## 2. Sentencias Delete

Supongamos que somos los encargados de la base de datos que administra las aplicaciones que se encuentran en la playStore y nos piden eliminar

### 1.deleteOne

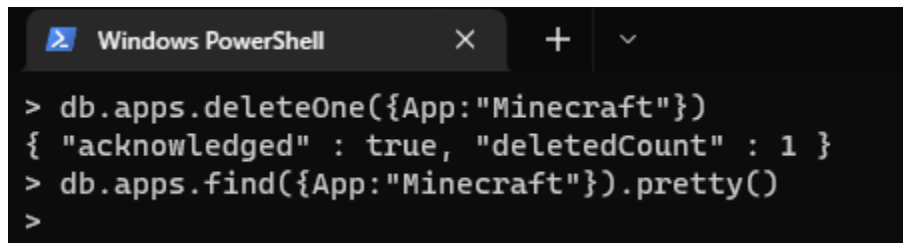
Esta se usa para eliminar un objeto. Si nos pidieran eliminar cierta aplicación de nuestra base de datos se haría de la siguiente manera

En esta ocasión eliminar la aplicación de Minecraft. Es recomendable primero asegurarnos si existe esta aplicación en nuestra colección.



```
Windows PowerShell
> db.apps.find({App:"Minecraft"}).pretty()
{
  "_id" : ObjectId("638d24bd07771e22c568ba97"),
  "App" : "Minecraft",
  "Category" : "FAMILY",
  "Rating" : "4.6",
  "Reviews" : "4.78M",
  "Size" : "782 MB",
  "Installs" : "10,000,000+",
  "Type" : "Paid",
  "Price" : "$6.99",
  "Content Rating" : "Everyone 10+",
  "Genres" : "Arcade;Action & Adventure",
  "Last Updated" : "November 23, 2022",
  "Current Ver" : "1.19.60.22",
  "Android Ver" : "5.0 and up"
}
```

Nos percatamos de que si existe y luego procedemos a eliminar de la siguiente manera

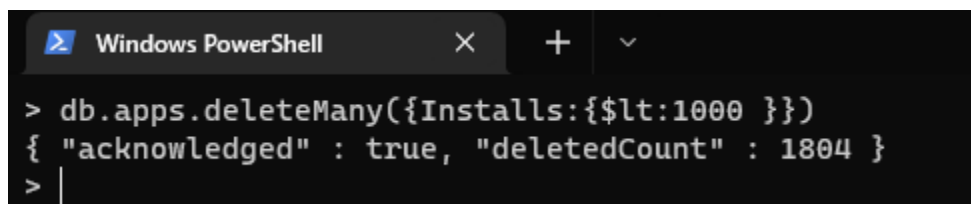


```
> db.apps.deleteOne({App:"Minecraft"})
{ "acknowledged" : true, "deletedCount" : 1 }
> db.apps.find({App:"Minecraft"}).pretty()
>
```

La primera sentencia es la de eliminar la app que tenga el nombre Minecraft. La segunda sentencia fue para verificar si se eliminó correctamente y notamos que no nos devuelve nada por lo tanto se eliminó correctamente

## 2. deleteMany

Aquí eliminaremos todas las apps que menos de mil personas hayan instalado



```
> db.apps.deleteMany({Installs:{$lt:1000 }})
{ "acknowledged" : true, "deletedCount" : 1804 }
> |
```

Nos arroja que se completó correctamente y el contador de eliminaciones

## 3ra Sentencia

En la coleccion apps elimino los documentos que cumpla la condicion de que su genero sea and y que tenga Reviews mayores a 1000

```
Windows PowerShell
> db.apps.find({Genres:"Dating"}).count()
183
> db.apps.deleteMany({Genres:"Dating",Reviews:{$gt:1000}})
{ "acknowledged" : true, "deletedCount" : 113 }
>
```

#### 4 Sentencia

Eliminamos todas las aplicaciones que den soporte a una version de android muy antigua ya que no se les da soporte actualmente

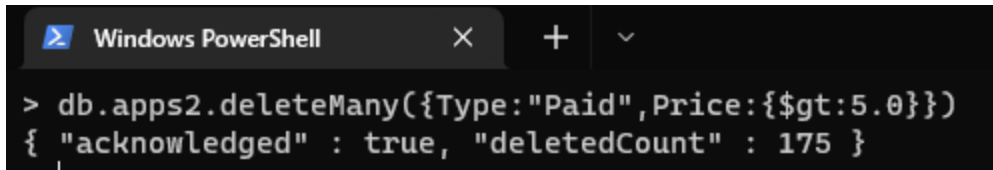
```
Windows PowerShell
> db.apps2.deleteMany({"Android Ver":"2.2 and up"})
{ "acknowledged" : true, "deletedCount" : 244 }
```



## 5ta sentencia

En esta última sentencia eliminamos las aplicaciones que sean de paga y que tengan un precio mayor a 5 dólares

en nuestra colección 2



```
> db.apps2.deleteMany({Type:"Paid",Price:{$gt:5.0}})
{ "acknowledged" : true, "deletedCount" : 175 }
```

## 4. Querys

En esta primera consulta queremos saber el número de aplicaciones de nuestra colección que tienen un Rating mayor o igual que 5.0

```
Windows PowerShell
> db.apps.find({"Rating":{"$gte:5.0"}}).count()
43
```

Tenemos un total de 43 apps que cumplen con esta condición

### 2da Sentencia

Seleccionamos las aplicaciones que sean gratis ordenar de la Z a la A con un límite de 3

```
Windows PowerShell
> db.apps2.find({"Type":"Free"}).sort({"Content": -1}).pretty().limit(3)
{
  "_id" : ObjectId("638d5d1444624e666d499075"),
  "App" : "Photo Editor & Candy Camera & Grid & ScrapBook",
  "Category" : "ART_AND_DESIGN",
  "Rating" : 4.1,
  "Reviews" : 159,
  "Size" : "19M",
  "Installs" : 10000,
  "Type" : "Free",
  "Price" : 0,
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design",
  "Last Updated" : "January 7, 2018",
  "Current Ver" : "1.0.0",
  "Android Ver" : "4.0.3 and up"
}
{
  "_id" : ObjectId("638d5d1444624e666d499076"),
  "App" : "Coloring book moana",
  "Category" : "ART_AND_DESIGN",
  "Rating" : 3.9,
  "Reviews" : 967,
  "Size" : "14M",
  "Installs" : 500000,
  "Type" : "Free",
  "Price" : 0,
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design;Pretend Play",
  "Last Updated" : "January 15, 2018",
  "Current Ver" : "2.0.0",
  "Android Ver" : "4.0.3 and up"
}
{
  "_id" : ObjectId("638d5d1444624e666d499077"),
  "App" : "U Launcher Lite - FREE Live Cool Themes, Hide Apps",
  "Category" : "ART_AND_DESIGN",
  "Rating" : 4.7,
  "Reviews" : 87510,
  "Size" : "8.7M",
  "Installs" : 5000000,
  "Type" : "Free",
  "Price" : 0,
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design",
  "Last Updated" : "August 1, 2018",
  "Current Ver" : "1.2.4",
  "Android Ver" : "4.0.3 and up"
}
```

3. Esta función es muy útil para ver los datos en formato json desde la terminal, ayuda a entender de mejor manera los datos

```
Windows PowerShell
> db.apps.find().limit(3).pretty()
{
  "_id" : ObjectId("638d5a4c44624e666d49661b"),
  "App" : "Photo Editor & Candy Camera & Grid & ScrapBook",
  "Category" : "ART_AND_DESIGN",
  "Rating" : 4.1,
  "Reviews" : 159,
  "Size" : "19M",
  "Installs" : 10000,
  "Type" : "Free",
  "Price" : 0,
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design",
  "Last Updated" : "January 7, 2018",
  "Current Ver" : "1.0.0",
  "Android Ver" : "4.0.3 and up"
}

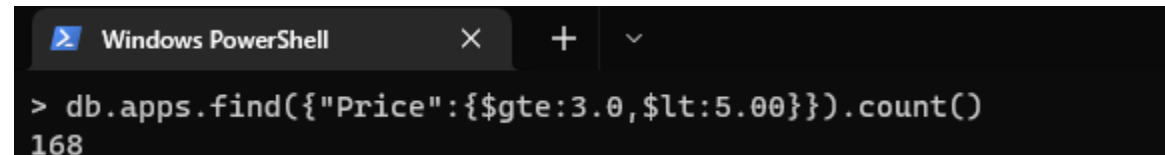
{
  "_id" : ObjectId("638d5a4c44624e666d49661c"),
  "App" : "Coloring book moana",
  "Category" : "ART_AND_DESIGN",
  "Rating" : 3.9,
  "Reviews" : 967,
  "Size" : "14M",
  "Installs" : 500000,
  "Type" : "Free",
  "Price" : 0,
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design;Pretend Play",
  "Last Updated" : "January 15, 2018",
  "Current Ver" : "2.0.0",
  "Android Ver" : "4.0.3 and up"
}

{
  "_id" : ObjectId("638d5a4c44624e666d49661d"),
  "App" : "U Launcher Lite - FREE Live Cool Themes, Hide Apps",
  "Category" : "ART_AND_DESIGN",
  "Rating" : 4.7,
  "Reviews" : 87510,
  "Size" : "8.7M",
  "Installs" : 5000000,
  "Type" : "Free",
  "Price" : 0,
  "Content Rating" : "Everyone",
  "Genres" : "Art & Design",
  "Last Updated" : "August 1, 2018",
  "Current Ver" : "1.2.4",
  "Android Ver" : "4.0.3 and up"
}
```

La función del cual les hablo es del .pretty().

4. En esta consulta queremos saber el número de aplicaciones que tienen un precio entre 3 a 5 dólares

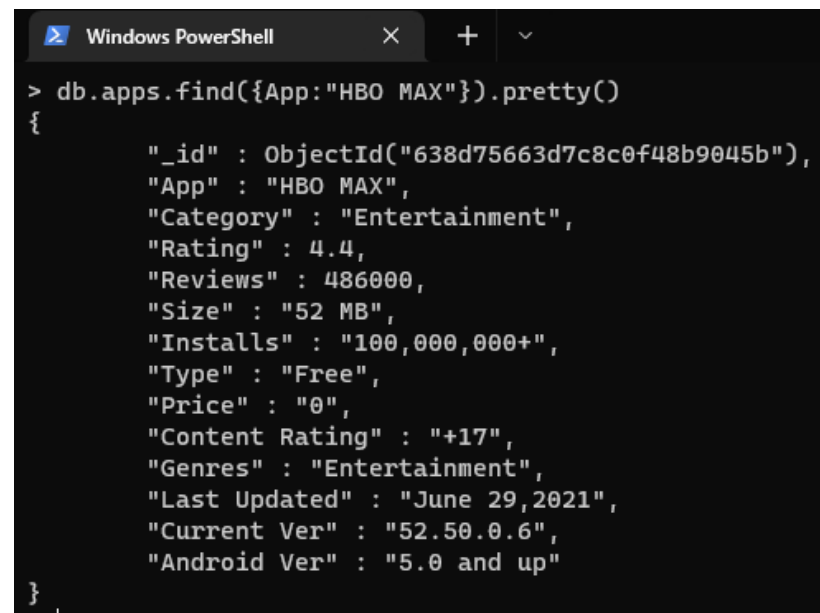
```
db.apps.find({"Price":{"$gte:3.0,$lt:5.00}}).count()
```



```
Windows PowerShell
> db.apps.find({"Price":{"$gte:3.0,$lt:5.00}}).count()
168
```

En total tenemos 168 apps que cumplen correctamente

5. Buscamos por la aplicación llamada HBO MAX



```
Windows PowerShell
> db.apps.find({App:"HBO MAX"}).pretty()
{
  "_id" : ObjectId("638d75663d7c8c0f48b9045b"),
  "App" : "HBO MAX",
  "Category" : "Entertainment",
  "Rating" : 4.4,
  "Reviews" : 486000,
  "Size" : "52 MB",
  "Installs" : "100,000,000+",
  "Type" : "Free",
  "Price" : "0",
  "Content Rating" : "+17",
  "Genres" : "Entertainment",
  "Last Updated" : "June 29,2021",
  "Current Ver" : "52.50.0.6",
  "Android Ver" : "5.0 and up"
}
```

## 4. Updates

1. Con este update actualizar la claves de todas las apps para un mayor entendimiento

```
> db.apps.updateMany({Type:"Free"},{$rename:{"Android Ver": 'Android V'}})
{ "acknowledged" : true, "matchedCount" : 8409, "modifiedCount" : 8409 }
> db.apps.updateMany({Type:"Paid"},{$rename:{"Android Ver": 'Android V'}})
{ "acknowledged" : true, "matchedCount" : 515, "modifiedCount" : 515 }
```

Paso de android ver a Android V

### 2.Actualizar valor de cierta Aplicación

Recordemos que cuando insertamos esta aplicación fue con estos datos

```
{
  "App" : "Minecraft",
  "Category" : "FAMILY",
  "Rating" : 4.6,
  "Reviews" : 4000000,
  "Size" : "782 MB",
  "Installs" : 10000000,
  "Type" : "Paid",
  "Price" : "$6.99",
  "Content Rating" : "Everyone 10+",
  "Genres" : "Arcade;Action & Adventu",
  "Last Updated" : "November 23, 202",
  "Current Ver" : "1.19.60.22",
  "Android Ver" : "5.0 and up"
```

Suponga que el precio sube entonces tenemos que actualizar la base de datos y se hace de la siguiente manera

```
> db.apps.update({App:"Minecraft"},{$set: {Price:15,"Current Ver": 1.20}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

Verificamos

```
> db.apps.find({App:"Minecraft"}).pretty()
{
  "_id" : ObjectId("638d802ca024f5c5aba1433d"),
  "App" : "Minecraft",
  "Category" : "FAMILY",
  "Rating" : 4.6,
  "Reviews" : 40000000,
  "Size" : "782 MB",
  "Installs" : 100000000,
  "Type" : "Paid",
  "Price" : 15,
  "Content Rating" : "Everyone 10+",
  "Genres" : "Arcade;Action & Adventure",
  "Last Updated" : "November 23, 2022",
  "Current Ver" : 1.2,
  "Android Ver" : "5.0 and up"
}
```

Notamos que si se actualizaron los atributos requeridos

3. Supongamos que nuestros datos no fueron insertados de manera correcta por lo tanto podemos actualizar todo el documento completo de la sig manera

Actualizamos todos los valores de la respectivas claves

```
> db.apps.update({App:"Minecraft"},
...   {
...     "App" : "Minecraft PE",
...     "Category" : "FAMILY",
...     "Rating" : 5.0,
...     "Reviews" : 5000000,
...     "Size" : "1 GB",
...     "Installs" : 10000000,
...     "Type" : "Paid",
...     "Price" : "$6.99",
...     "Content Rating" : "Everyone 12+",
...     "Genres" : "Arcade;Action & Adventure",
...     "Last Updated" : "December 5, 2022",
...     "Current Ver" : "1.21",
...     "Android Ver" : "7.0 and up"
...   })
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

Verificamos

```
> db.apps.find({App:"Minecraft PE"}).pretty()
{
  "_id" : ObjectId("638d802ca024f5c5aba1433d"),
  "App" : "Minecraft PE",
  "Category" : "FAMILY",
  "Rating" : 5,
  "Reviews" : 5000000,
  "Size" : "1 GB",
  "Installs" : 10000000,
  "Type" : "Paid",
  "Price" : "$6.99",
  "Content Rating" : "Everyone 12+",
  "Genres" : "Arcade;Action & Adventure",
  "Last Updated" : "December 5, 2022",
  "Current Ver" : "1.21",
  "Android Ver" : "7.0 and up"
}
```

Notamos que fue satisfactorio el update.

4. En este update actualizalos las aplicaciones que tienen un rating de 5 y las volvemos de paga con precio de 5 dólares

```
db.appsMain.updateMany({Rating:5}, {$set:{Type:"Paid",Price:5.00}})
```

```
Windows PowerShell
> db.appsMain.updateMany({Rating:5}, {$set:{Type:"Paid",Price:5.00}})
{ "acknowledged" : true, "matchedCount" : 274, "modifiedCount" : 274 }
```

Notamos que 274 documentos con 5 de rating han sido modificados.

5. Mediante una expresión regular actualiza todas las Apps que tengan que ver con Facebook a apps de paga y asignarle un precio

Primero usamos una expresión regular para verificar cuantas apps tiene q ver con Facebook

```
> db.appsMain.find({App:{$regex:"Facebook"}}).count()
33
```

Notamos que 33 apps tienen que ver con facebook

Hacemos el update mencionado anteriormente

```
> db.appsMain.updateMany({App:{$regex:"Facebook"}},{$set:{Type:"Paid",Price:25.00}})
{ "acknowledged" : true, "matchedCount" : 33, "modifiedCount" : 33 }
```



Nos ayudamos de otra expresión regular para verificar el update

```
Windows PowerShell
> db.appsMain.find({App:{$regex:"Facebook"}}).pretty().limit(2)
{
  "_id" : ObjectId("638d842444624e666d49bb98"),
  "App" : "Facebook Pages Manager",
  "Category" : "BUSINESS",
  "Rating" : 4,
  "Reviews" : 1279184,
  "Size" : "Varies with device",
  "Installs" : 50000000,
  "Type" : "Paid",
  "Price" : 25,
  "Content Rating" : "Everyone",
  "Genres" : "Business",
  "Last Updated" : "August 2, 2018",
  "Current Ver" : "Varies with device",
  "Android Ver" : "Varies with device"
}
{
  "_id" : ObjectId("638d842444624e666d49c4bf"),
  "App" : "Facebook",
  "Category" : "SOCIAL",
  "Rating" : 4.1,
  "Reviews" : 78158306,
  "Size" : "Varies with device",
  "Installs" : 1000000000,
  "Type" : "Paid",
  "Price" : 25,
  "Content Rating" : "Teen",
  "Genres" : "Social",
  "Last Updated" : "August 3, 2018",
  "Current Ver" : "Varies with device",
  "Android Ver" : "Varies with device"
}
```

Hacemos una consulta mediante expresiones regulares y verificamos que el update se realizó con éxito.