

MONGODB ASSIGNMENT-OTT MANAGEMENT SYSTEM

1. Create the database and collections

```
> show dbs
local    0.03125GB
```

- *Use ottmanagement*

```
> use ottmanagement
switched to db ottmanagement
```

- *db.createCollection("subscription")*
- *db.createCollection("userott")*
- *db.createCollection("content_type")*
- *db.createCollection("payment_type")*
- *db.createCollection("has_payment")*

```
> db.createCollection("subscription")
{ "ok" : 1 }
> db.createCollection("userott")
{ "ok" : 1 }
> db.createCollection("content_type")
{ "ok" : 1 }
> db.createCollection("payment_type")
{ "ok" : 1 }
> db.createCollection("has_payment")
{ "ok" : 1 }
```

Display the database and collections

```
local    0.03125GB
ottmanagement  0.0625GB
> show collections
content_type
has_payment
payment_type
subscription
system.indexes
userott
```

2. Insert documents into collections.

SUBSCRIPTION TABLE

- *db.subscription.insert ([{subscription_id : 1 , subscription_type : "Free", amount:0},{subscription_id : 2 , subscription_type : "Basic", amount: 250} , {subscription_id : 3 , subscription_type : "Gold", amount:500} , {subscription_id : 4 , subscription_type : "Premium", amount:750},{subscription_id : 5, subscription_type : "Ultra", amount:1000}])*

```
> db.subscription.insert ( [{subscription_id : 1 , subscription_type : "Free", amount:0},{subscription_id : 2 , subscription_type : "Basic", amount:250},{subscription_id : 3 , subscription_type : "Gold", amount:500},{subscription_id : 4 , subscription_type : "Premium", amount:750},{subscription_id : 5, subscription_type : "Ultra", amount:1000}] )
> db.subscription.find().pretty()
{
  "_id" : ObjectId("6061f7435092a50b1dd68b96"),
  "subscription_id" : 1,
  "subscription_type" : "Free",
  "amount" : 0
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b97"),
  "subscription_id" : 2,
  "subscription_type" : "Basic",
  "amount" : 250
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b98"),
  "subscription_id" : 3,
  "subscription_type" : "Gold",
  "amount" : 500
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b99"),
  "subscription_id" : 4,
  "subscription_type" : "Premium",
  "amount" : 750
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b9a"),
  "subscription_id" : 5,
  "subscription_type" : "Ultra",
  "amount" : 1000
}
>
```

USER TABLE

- `db.userott.insert({user_id:1,name:'Ishani Vaghela',age:23,phone:'9843542314',city:'Chennai',state:'Tamil Nadu', subscription_start_date: new Date("2021-12-17T17:00:00.832Z"),subscription_end_date:new Date("2022-12-17T17:00:00.832Z") , subscription: [{subscription_id : 5, subscription_type:'Ultra', amount:1000}]})`
- `db.userott.insert({user_id:2,name:'Ranveer Vaghela',age:23,phone:'8843542314',city:'Chennai',state:'Tamil Nadu', subscription_start_date: new Date("2021-02-01T17:00:00.832Z"),subscription_end_date:new Date("2022-02-01T17:00:00.832Z") , subscription: [{subscription_id : 5, subscription_type:'Ultra', amount:1000}]})`
- `db.userott.insert({user_id:3,name:'pragya',age:23,phone:'8003542314',city:'Coimbatore',state:'Tamil Nadu', subscription_start_date: new Date("2021-11-17T17:00:00.832Z"),subscription_end_date:new Date("2022-12-17T17:00:00.832Z") , subscription: [{subscription_id : 3, subscription_type : 'Gold', amount:500}]})`

```
> db.userott.find().pretty()
{
  "_id" : ObjectId("6061fc7e5092a50b1dd68b9b"),
  "user_id" : 1,
  "name" : "Ishani Vaghela",
  "age" : 23,
  "phone" : "9843542314",
  "city" : "Chennai",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-12-17T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-12-17T17:00:00.832Z"),
  "subscription" : [
    {
      "subscription_id" : 5,
      "subscription_type" : "Ultra",
      "amount" : 1000
    }
  ]
}
{
  "_id" : ObjectId("6061fe825092a50b1dd68b9c"),
  "user_id" : 1,
  "name" : "Ranveer Vaghela",
  "age" : 23,
  "phone" : "8843542314",
  "city" : "Chennai",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-02-01T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-02-01T17:00:00.832Z"),
  "subscription" : [
    {
      "subscription_id" : 5,
      "subscription_type" : "Ultra",
      "amount" : 1000
    }
  ]
}
{
  "_id" : ObjectId("6061ff825092a50b1dd68b9d"),
  "user_id" : 3,
  "name" : "pragya",
  "age" : 23,
  "phone" : "8003542314",
  "city" : "Coimbatore",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-11-17T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-12-17T17:00:00.832Z"),
  "subscription" : [
    {
      "subscription_id" : 3,
      "subscription_type" : "Gold",
      "amount" : 500
    }
  ]
}
```

3. Practice UPDATE,SAVE and DROP methods.

★ *Update the name of 'Basic' subscription type to 'Standard'*

- *`db.subscription.update({subscription_type:'Basic'},{$set:{subscription_type:'Standard'}})`*

```
> db.subscription.update({subscription_type:'Basic'},{$set:{subscription_type:'Standard'}})
> db.subscription.find().pretty();
{
  "_id" : ObjectId("6061f7435092a50b1dd68b96"),
  "subscription_id" : 1,
  "subscription_type" : "Free",
  "amount" : 0
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b97"),
  "amount" : 250,
  "subscription_id" : 2,
  "subscription_type" : "Standard"
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b98"),
  "subscription_id" : 3,
  "subscription_type" : "Gold",
  "amount" : 500
}
```

★ *Update the amount and type of 'Premium' subscription type to 700 and 'Platinum' respectively using save method*

- *db.subscription.save({_id : ObjectId("6061f7435092a50b1dd68b99"),*

```
> db.subscription.save({_id : ObjectId('6061f7435092a50b1dd68b99'),subscription_id : 4 , subscription_type
: 'Platinum',amount: 700 })
> db.subscription.find().pretty();
{
  "_id" : ObjectId("6061f7435092a50b1dd68b96"),
  "subscription_id" : 1,
  "subscription_type" : "Free",
  "amount" : 0
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b97"),
  "amount" : 250,
  "subscription_id" : 2,
  "subscription_type" : "Standard"
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b98"),
  "subscription_id" : 3,
  "subscription_type" : "Gold",
  "amount" : 500
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b99"),
  "subscription_id" : 4,
  "subscription_type" : "Platinum",
  "amount" : 700
}
```

subscription_id : 4 , subscription_type : "Platinum",amount: 700 })

★ *Drop the collection, subscription*

- *db.subscription.drop()*

4. Perform the following queries.

a. Simple find query.

★ *List the contents of user table*

- *db.userott.find().pretty()*

```
> db.userott.find().pretty()
{
  "_id" : ObjectId("6061fc7e5092a50b1dd68b9b"),
  "user_id" : 1,
  "name" : "Ishani Vaghela",
  "age" : 23,
  "phone" : "9843542314",
  "city" : "Chennai",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-12-17T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-12-17T17:00:00.832Z"),
  "subscription" : [
    {
      "subscription_id" : 5,
      "subscription_type" : "Ultra",
      "amount" : 1000
    }
  ]
}
{
  "_id" : ObjectId("6061fe825092a50b1dd68b9c"),
  "user_id" : 1,
  "name" : "Ranveer Vaghela",
  "age" : 23,
  "phone" : "8843542314",
  "city" : "Chennai",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-02-01T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-02-01T17:00:00.832Z"),
  "subscription" : [
    {
      "subscription_id" : 5,
      "subscription_type" : "Ultra",
      "amount" : 1000
    }
  ]
}
```

b. Query with a logical operator.

★ *Retrieving the user documents whose city is coimbatore and age is greater than 20*

★ *db.userott.find({\$and: [{city:"Coimbatore"}, {age: {\$gt:20}}]}).pretty()*

```
> db.userott.find({$and: [{city: "Coimbatore"}, {age: {$gt:20}}]}).pretty()
{
  "_id" : ObjectId("6061ff305092a50b1dd68b9d"),
  "user_id" : 3,
  "name" : "pragya",
  "age" : 23,
  "phone" : "8003542314",
  "city" : "Coimbatore",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-11-17T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-12-17T17:00:00.832Z"),
  "subscription" : [
    {
      "subscription_id" : 3,
      "subscription_type" : "Gold",
      "amount" : 500
    }
  ]
}
```

★ *Retrieving the subscription documents whose subscription amount is not less than 600*

★ *db.subscription.find({amount:{\$not:{\$lt:600}}}).pretty()*

```
> db.subscription.find({amount:{$not:{$lt:600}}}).pretty()
{
  "_id" : ObjectId("6064816e48135ef68d52b815"),
  "subscription_id" : 4,
  "subscription_type" : "Premium",
  "amount" : 750
}
{
  "_id" : ObjectId("6064816e48135ef68d52b816"),
  "subscription_id" : 5,
  "subscription_type" : "Ultra",
  "amount" : 1000
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b99"),
  "subscription_id" : 4,
  "subscription_type" : "Platinum",
  "amount" : 700
}
```

c. Deleting a particular document

★ *Remove the documents from subscription table having amount greater than 500*

- *db.subscription.remove({amount:{\$gt:800}})*

```
> db.subscription.remove({amount:{$gt:800}})
> db.subscription.find().pretty();
{
  "_id" : ObjectId("6061f7435092a50b1dd68b96"),
  "subscription_id" : 1,
  "subscription_type" : "Free",
  "amount" : 0
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b97"),
  "amount" : 250,
  "subscription_id" : 2,
  "subscription_type" : "Standard"
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b98"),
  "subscription_id" : 3,
  "subscription_type" : "Gold",
  "amount" : 500
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b99"),
  "subscription_id" : 4,
  "subscription_type" : "Platinum",
  "amount" : 700
}
```


d. Project some of the attributes from the document.

★ List all the names of the available subscription types

- `db.subscription.find({}, {subscription_type : 1, _id:0})`

```
> db.subscription.find({}, {subscription_type : 1, _id:0})
{ "subscription_type" : "Free" }
{ "subscription_type" : "Standard" }
{ "subscription_type" : "Gold" }
{ "subscription_type" : "Platinum" }
```

e. Use limit , skip methods in the query

- **List two subscriptions whose subscription amount is greater than 600**
- `db.subscription.find({amount:{$gt:600}}).pretty()`

```
[> db.subscription.find({amount:{$gt:600}}).limit(2).pretty()
{
  "_id" : ObjectId("6064816e48135ef68d52b815"),
  "subscription_id" : 4,
  "subscription_type" : "Premium",
  "amount" : 750
}
{
  "_id" : ObjectId("6064816e48135ef68d52b816"),
  "subscription_id" : 5,
  "subscription_type" : "Ultra",
  "amount" : 1000
}
```

- **List all paid subscriptions**

- `db.subscription.aggregate([{$skip:1}]).pretty()`

```
> db.subscription.aggregate([{$skip:1}]).pretty()
{
  "_id" : ObjectId("6064816e48135ef68d52b813"),
  "subscription_id" : 2,
  "subscription_type" : "Standard",
  "amount" : 250
}
{
  "_id" : ObjectId("6064816e48135ef68d52b814"),
  "subscription_id" : 3,
  "subscription_type" : "Gold",
  "amount" : 500
}
{
  "_id" : ObjectId("6064816e48135ef68d52b815"),
  "subscription_id" : 4,
  "subscription_type" : "Premium",
  "amount" : 750
}
{
  "_id" : ObjectId("6064816e48135ef68d52b816"),
  "subscription_id" : 5,
  "subscription_type" : "Ultra",
  "amount" : 1000
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b99"),
  "subscription_id" : 4,
  "subscription_type" : "Platinum",
  "amount" : 700
}
```

f. Query for sorting the data

- **Display the subscriptions in decreasing order of the amount paid**

- `db.subscription.aggregate([{$sort:{amount:-1}}]).pretty()`

```
> db.subscription.aggregate([{$sort:{amount:-1}}]).pretty()
{
  "_id" : ObjectId("6064816e48135ef68d52b816"),
  "subscription_id" : 5,
  "subscription_type" : "Ultra",
  "amount" : 1000
}
{
  "_id" : ObjectId("6064816e48135ef68d52b815"),
  "subscription_id" : 4,
  "subscription_type" : "Premium",
  "amount" : 750
}
{
  "_id" : ObjectId("6061f7435092a50b1dd68b99"),
  "subscription_id" : 4,
  "subscription_type" : "Platinum",
  "amount" : 700
}
{
  "_id" : ObjectId("6064816e48135ef68d52b814"),
  "subscription_id" : 3,
  "subscription_type" : "Gold",
  "amount" : 500
}
{
  "_id" : ObjectId("6064816e48135ef68d52b813"),
  "subscription_id" : 2,
  "subscription_type" : "Standard",
  "amount" : 250
}
{
  "_id" : ObjectId("6064816e48135ef68d52b812"),
  "subscription_id" : 1,
  "subscription_type" : "Free",
  "amount" : 0
}
```

g. Use aggregate and group in the query

- **Remove top-level nested field subscription in userott**

- `db.userott.aggregate([{$unset:"subscription"}]).pretty()`

```
> db.userott.aggregate([{$unset:"subscription"}]).pretty()
{
  "_id" : ObjectId("6064823648135ef68d52b817"),
  "user_id" : 1,
  "name" : "IshaniVaghela",
  "age" : 23,
  "phone" : "9843542314",
  "city" : "Chennai",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-12-17T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-12-17T17:00:00.832Z")
}
{
  "_id" : ObjectId("6064827b48135ef68d52b818"),
  "user_id" : 2,
  "name" : "Ranveer Vaghela",
  "age" : 23,
  "phone" : "8843542314",
  "city" : "Chennai",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-02-01T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-02-01T17:00:00.832Z")
}
{
  "_id" : ObjectId("6064829d48135ef68d52b819"),
  "user_id" : 3,
  "name" : "pragya",
  "age" : 23,
  "phone" : "8003542314",
  "city" : "Coimbatore",
  "state" : "Tamil Nadu",
  "subscription_start_date" : ISODate("2021-11-17T17:00:00.832Z"),
  "subscription_end_date" : ISODate("2022-12-17T17:00:00.832Z")
}
```

- **Group the users by their city**

- `db.userott.aggregate([{$group:{_id:"$city"}}])`

```
> db.userott.aggregate([{$group:{_id:"$city"}}]).pretty()
{ "_id" : "Chennai" }
{ "_id" : "Coimbatore" }
>
```

h. Try aggregation pipeline

- **Compute the total amount payable after applying 18% GST for subscription amounts greater than 600**
- `db.subscription.aggregate([
 {$match:{amount:{$gt:600}}},
 {$addFields:{GST:{$trunc:[$multiply:["$amount",0.18]],2}}},
 {$addFields:{totalAmount:{$round:[$sum:["$amount","$GST"]],0}}}
]).pretty()`

```
> db.subscription.aggregate([  
... {$match:{amount:{$gt:600}}}, {$addFields:{GST:{$trunc:[$multiply:["$amount",0.18]],2}}},  
... {$addFields:{totalAmount:{$round:[$sum:["$amount","$GST"]],0}}}  
... ] ).pretty()  
{  
  "_id" : ObjectId("6064816e48135ef68d52b815"),  
  "subscription_id" : 4,  
  "subscription_type" : "Premium",  
  "amount" : 750,  
  "GST" : 135,  
  "totalAmount" : 885  
}  
{  
  "_id" : ObjectId("6064816e48135ef68d52b816"),  
  "subscription_id" : 5,  
  "subscription_type" : "Ultra",  
  "amount" : 1000,  
  "GST" : 180,  
  "totalAmount" : 1180  
}  
{  
  "_id" : ObjectId("6061f7435092a50b1dd68b99"),  
  "subscription_id" : 4,  
  "subscription_type" : "Platinum",  
  "amount" : 700,  
  "GST" : 126,  
  "totalAmount" : 826  
}  
>
```