```
1. $project:{name:1,"company.title":1}}

2. $project:{_id:1, name:1, age:1}}

3. $project: {eyeColor:0, age:0}}

4. $project:{name:1, newAge:"$age"}}
```

```
db.Person.aggregate([
    {$project:{name:1,"company.location.country":1}}
])

db.Person.aggregate([
    {$project:{name:1,isActive:1,gender:1}}
])



db.Person.aggregate([
    {$project:{name:1,isActive:1,gender:1}},
    {$count:"total"}
])

{
    "total" : 1000
}




db.Person.aggregate([
    {$match:{age:30}},
    {$project:{name:1,isActive:1,gender:1,age:1}},
])

{
    "_id" : ObjectId("61b3a30d34f4a3ee3fff302d"),
    "name" : "Constance Alvarado",
    "isActive" : false,
    "age" : 30,
    "gender" : "female"
}

db.Person.aggregate([
    {$match:{age:30}},
    {$project:{_id:0,name:1,isActive:1,gender:1,age:1}},
])

{
    "name" : "Constance Alvarado",
    "isActive" : false,
    "age" : 30,
    "gender" : "female"
}

db.Person.aggregate([
    {$match:{age:30}},
    {$project:{name:0,isActive:0,gender:0}},
])

{
    "_id" : ObjectId("61b3a30d34f4a3ee3fff302d"),
    "index" : 100,
    "registered" : ISODate("2015-05-22T10:34:36.000Z"),
    "age" : 30,
    "eyeColor" : "green",
    "favoriteFruit" : "strawberry",
    "company" : {
        "title" : "ENJOLA",
        "email" : "constancealvarado@enjola.com",
        "phone" : "+1 (842) 501-2698",
        "location" : {
            "country" : "France",
            "address" : "503 Pooles Lane"
        }
    },
    "tags" : [
        "laborum",
        "voluptate",
        "anim"
    ]
}

db.Person.aggregate([
    {$project:{
        _id:0,
        name:1,
        info:{
            eyes:"$eyeColor",
            fruit:"$favoriteFruit",
            country:"$company.location.country"
        }
        }},
])

{
    "name" : "Carmella Morse",
    "info" : {
        "eyes" : "green",
        "fruit" : "apple",
        "country" : "Germany"
    }
}

db.Person.aggregate([
    {$limit:100},
    {$match:{age:{$gt:27}}},
    {$group:{_id:"$company.location.country"}}
])


{
    "_id" : "Italy"
}
{
    "_id" : "USA"
}
{
    "_id" : "Germany"
}
{
    "_id" : "France"
}


db.Person.aggregate([
```

```
    {$limit:5},
    {$match:{eyeColor:{$ne:"blue"}}},
    {$group:{_id:{eyeColor:"$eyeColor",favoriteFruit:"$favoriteFruit"}}},
    {$sort:{"_id.eyeColor":1,"_id.favoriteFruit":-1}}
])


{
    "_id" : {
        "eyeColor" : "brown",
        "favoriteFruit" : "strawberry"
    }
}
{
    "_id" : {
        "eyeColor" : "brown",
        "favoriteFruit" : "banana"
    }
}
{
    "_id" : {
        "eyeColor" : "green",
        "favoriteFruit" : "banana"
    }
}
{
    "_id" : {
        "eyeColor" : "green",
        "favoriteFruit" : "apple"
    }
}
```

$ UNWIND → Array'i elemanlarına ayırır.

```
db.Person.aggregate([
    {$unwind:"$tags"},
    {$project:{name:1,gender:1,tags:1}}
])

{
    "_id" : ObjectId("61b3a30d34f4a3ee3fff2fcf"),
    "name" : "Carmella Morse",
    "gender" : "female",
    "tags" : "amet"
}
{
    "_id" : ObjectId("61b3a30d34f4a3ee3fff2fcf"),
    "name" : "Carmella Morse",
    "gender" : "female",
    "tags" : "cillum"
}

db.Person.aggregate([          ⟹ Tags'daki tüm farklı
    {$unwind:"$tags"},              kelimeleri getirir. Yani
    {$group:{_id:"$tags"}}          farklı dizi elemanlarını.
])
        ↳ kaç farklı tags elemanı var.
```

ACCUMULATORS

$sum $avg $max $min } Sadece group stage
                              içinde kullanılır.

{ total : { $sum : "$quantity"}}

{count : { $sum:1 }} →her gruptaki elemen sayını verir.

```
db.Person.aggregate([
    {$group:{
        _id:"$eyeColor",
        count:{$sum:1}
    }}
])

{
    "_id" : "green",
    "count" : 330.0
}
{
    "_id" : "blue",
    "count" : 333.0
}
{
    "_id" : "brown",
    "count" : 337.0
}

db.Person.aggregate([
    {$group:{
        _id:"$age",
        count:{$sum:1}
    }}
])


db.Person.aggregate([
    {$unwind:"$tags"},  → dizi elemanlarını ayırır.
    {$group:{
        _id:"$tags",      ⟶ elemanın her biri kaç
        count:{$sum:1}         defa geçmiş.
    }}
])
```
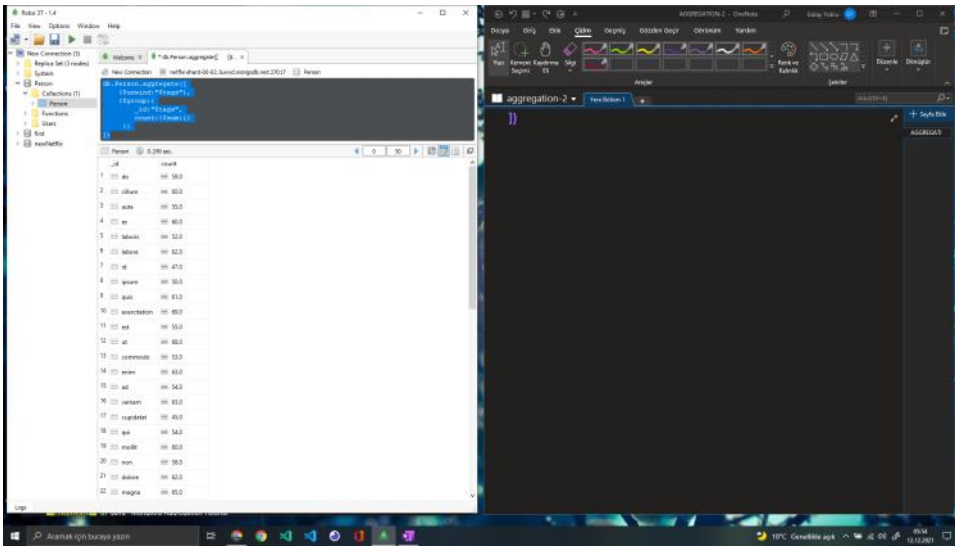
```
db.Person.aggregate([
  {$group:{
    _id:"$eyeColor",
    avgAge:{$avg:"$age"}
  }}
])
```
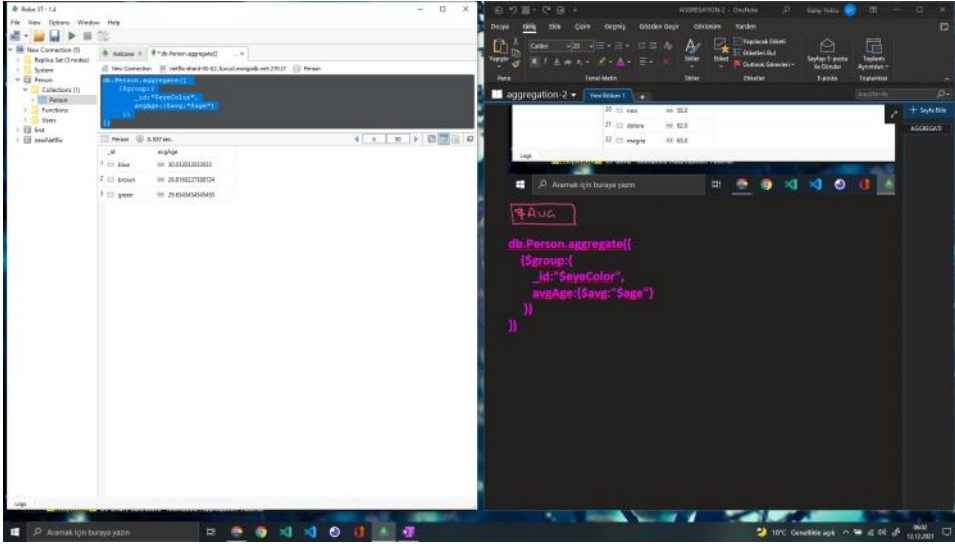


```
db.Person.aggregate([
  {$group:{
    _id:"$company.location.country",
    avgAge:{$avg:"$age"}
  }}
])
```

```
{
  "_id" : "Germany",
  "avgAge" : 29.72030651341
}
{
  "_id" : "USA",
  "avgAge" : 30.3254901960784
}
{
  "_id" : "Italy",
  "avgAge" : 29.2719665271967
}
{
  "_id" : "France",
  "avgAge" : 29.9959183673469
}
```

→ Tekli:

UNARY OPERATORS   1\Project içinde kullanılır

$type $multiply $or $and $lt $gt

2\Sadece value tarafında kullanılır (Conjuction)

```
db.Person.aggregate([
  {
    $project:{
      name:1,
      eyeColorType:{$type:"$eyeColor"},
      ageType:{$type:"$age"}
    }
  }
])
```

```
{
  "_id" : ObjectId("61b3a30d34f4a3ee3fff2fcf"),
  "name" : "Carmella Morse",
  "eyeColorType" : "string",
  "ageType" : "int"
}
```

```
db.Person.aggregate([
```

```
    {
        $project:{
            name:1,
            nameType:{$type:"$name"},
            tagsType:{$type:"$tags"},
            companyType:{$type:"$company"}
        }
    }
])

{
    "_id" : ObjectId("61b3a30d34f4a3ee3fff2fcf"),
    "name" : "Carmella Morse",
    "nameType" : "string",
    "tagsType" : "array",
    "companyType" : "object"
}

db.Person.aggregate([
    {$group:{_id:{age:"$age",eyeColor:"$eyeColor"}}},
    {$out:"aggregationResult"}
])
```

⤷ Jeni dizi oluşturur
Sgiliden: view gibi, belli akanlar