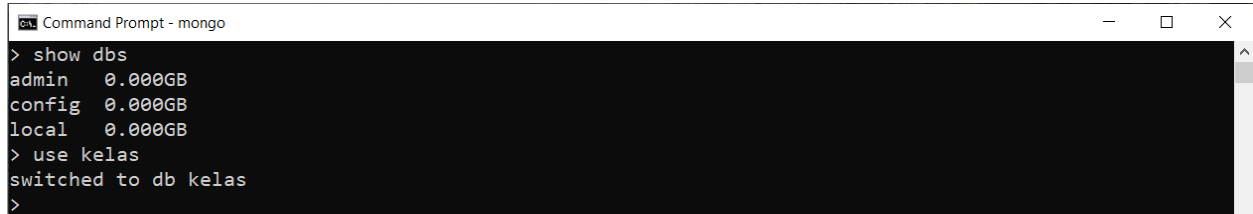


NAMA : TONY BASKORO
NIM : 17050623016
KELAS : D3 MI 2017

1. ONE TO MANY

Buata database baru dengan

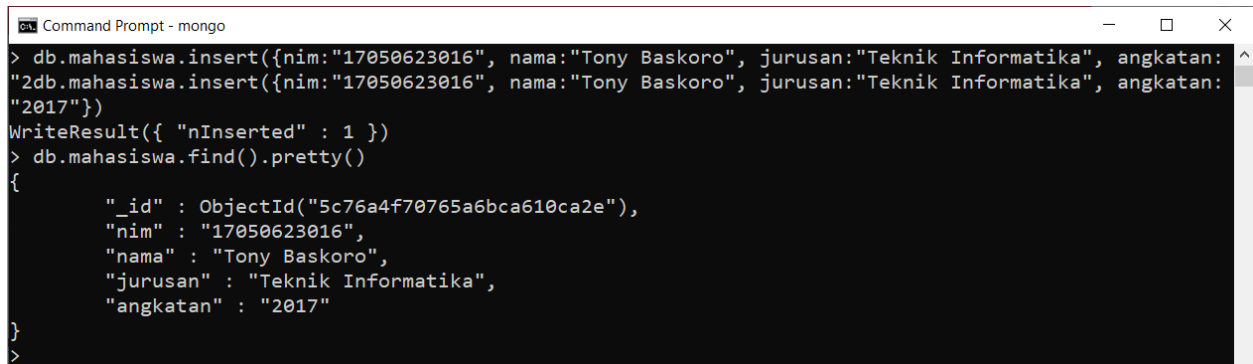
>use kelas



```
Command Prompt - mongo
> show dbs
admin    0.000GB
config  0.000GB
local    0.000GB
> use kelas
switched to db kelas
>
```

Membuat Collections mahasiswa

>db.mahasiswa.insert()



```
Command Prompt - mongo
> db.mahasiswa.insert({nim:"17050623016", nama:"Tony Baskoro", jurusan:"Teknik Informatika", angkatan:
"2017"})
WriteResult({ "nInserted" : 1 })
> db.mahasiswa.find().pretty()
{
  "_id" : ObjectId("5c76a4f70765a6bca610ca2e"),
  "nim" : "17050623016",
  "nama" : "Tony Baskoro",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017"
}
>
```

Membuat Collection mata_kuliah dan merelasikan dengan mahasiswa

```
Command Prompt - mongo
{
  "_id" : ObjectId("5c76a4f70765a6bca610ca2e"),
  "nim" : "17050623016",
  "nama" : "Tony Baskoro",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017"
}
{
  "_id" : ObjectId("5c76a7280765a6bca610ca2f"),
  "nim" : "17050623013",
  "nama" : "Gigih Prasetya",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017"
}
{
  "_id" : ObjectId("5c76a7480765a6bca610ca30"),
  "nim" : "17050623014",
  "nama" : "Charisma Aulya",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017"
}
> db.mata_kuliah.insert({nama_mata_kuliah:"basis data lanjut", sks:"4", dosen:"Andi Iwan Nurhidayat, S.Kom., MT", mahasiswa: [ObjectId("5c76a4f70765a6bca610ca2e"),ObjectId("5c76a7280765a6bca610ca2f"),ObjectId("5c76a7480765a6bca610ca30")]})
WriteResult({ "nInserted" : 1 })
>
```

Dengan ini tercipta relasi *ONE TO MANY*, yaitu satu mata kuliah dapat diampu banyak mahasiswa

```
Command Prompt - mongo
> db.mata_kuliah.find().pretty()
{
  "_id" : ObjectId("5c76a7c20765a6bca610ca31"),
  "nama_mata_kuliah" : "basis data lanjut",
  "sks" : "4",
  "dosen" : "Andi Iwan Nurhidayat, S.Kom., MT",
  "mahasiswa" : [
    ObjectId("5c76a4f70765a6bca610ca2e"),
    ObjectId("5c76a7280765a6bca610ca2f"),
    ObjectId("5c76a7480765a6bca610ca30")
  ]
}
>
```

Update juga Collection mahasiswa

>db.mahasiswa.update()

```
Command Prompt - mongo
> db.mahasiswa.update({'nim':'17050623016'},{$set:{'mata_kuliah':[ObjectId("5c76a7c20765a6bca610ca31")
... )
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.mahasiswa.find().pretty()
{
  "_id" : ObjectId("5c76a4f70765a6bca610ca2e"),
  "nim" : "17050623016",
  "nama" : "Tony Baskoro",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017",
  "mata_kuliah" : [
    ObjectId("5c76a7c20765a6bca610ca31")
  ]
}
```

2. MANY TO MANY

Tambahkan beberapa mata kuliah baru

```
>db.mata_kuliah.insert()
```

```
Command Prompt - mongo
> db.mata_kuliah.insert({nama_mata_kuliah:"Pemrograman Web lanjut", sks:"4", dosen:"Ari Kurniawan, S.Kom., MT", mahasiswa: [ObjectId("5c76a4f70765a6bca610ca2e"),ObjectId("5c76a7280765a6bca610ca2f"),ObjectId("5c76a7480765a6bca610ca30")]}})
WriteResult({ "nInserted" : 1 })
> db.mata_kuliah.insert({nama_mata_kuliah:"Jaringan Komputer lanjut", sks:"4", dosen:"Ibnu Febry Kurniawan, S.Kom., M.Sc.", mahasiswa: [ObjectId("5c76a4f70765a6bca610ca2e"),ObjectId("5c76a7280765a6bca610ca2f"),ObjectId("5c76a7480765a6bca610ca30")]}})
WriteResult({ "nInserted" : 1 })
>
```

```
Command Prompt - mongo
> db.mata_kuliah.find().pretty()
{
  "_id" : ObjectId("5c76a7c20765a6bca610ca31"),
  "nama_mata_kuliah" : "basis data lanjut",
  "sks" : "4",
  "dosen" : "Andi Iwan Nurhidayat, S.Kom., MT",
  "mahasiswa" : [
    ObjectId("5c76a4f70765a6bca610ca2e"),
    ObjectId("5c76a7280765a6bca610ca2f"),
    ObjectId("5c76a7480765a6bca610ca30")
  ]
}
{
  "_id" : ObjectId("5c76a9c40765a6bca610ca32"),
  "nama_mata_kuliah" : "Pemrograman Web lanjut",
  "sks" : "4",
  "dosen" : "Ari Kurniawan, S.Kom., MT",
  "mahasiswa" : [
    ObjectId("5c76a4f70765a6bca610ca2e"),
    ObjectId("5c76a7280765a6bca610ca2f"),
    ObjectId("5c76a7480765a6bca610ca30")
  ]
}
{
  "_id" : ObjectId("5c76aa040765a6bca610ca33"),
  "nama_mata_kuliah" : "Jaringan Komputer lanjut",
  "sks" : "4",
  "dosen" : "Ibnu Febry Kurniawan, S.Kom., M.Sc.",
  "mahasiswa" : [
    ObjectId("5c76a4f70765a6bca610ca2e"),
    ObjectId("5c76a7280765a6bca610ca2f"),
    ObjectId("5c76a7480765a6bca610ca30")
  ]
}
>
```

Update Collection mahasiswa

>db.mahasiswa.update()

```
Command Prompt - mongo
> db.mahasiswa.update({'nim':'17050623016'},{$set: {'mata_kuliah': [ObjectId("5c76a7c20765a6bca610ca31"),
, ObjectId("5c76a9c40765a6bca610ca32"), ObjectId("5c76aa040765a6bca610ca33")]} })
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.mahasiswa.update({'nim':'17050623014'},{$set: {'mata_kuliah': [ObjectId("5c76a7c20765a6bca610ca31")
, ObjectId("5c76a9c40765a6bca610ca32"), ObjectId("5c76aa040765a6bca610ca33")]} })
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.mahasiswa.update({'nim':'17050623013'},{$set: {'mata_kuliah': [ObjectId("5c76a7c20765a6bca610ca31")
, ObjectId("5c76a9c40765a6bca610ca32"), ObjectId("5c76aa040765a6bca610ca33")]} })
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

Dengan begini tercipta relasi *MANY TO MANY*, dimana banyak mahasiswa dapat mengampu banyak matakuliah

```
Command Prompt - mongo
> db.mahasiswa.find().pretty()
{
  "_id" : ObjectId("5c76a4f70765a6bca610ca2e"),
  "nim" : "17050623016",
  "nama" : "Tony Baskoro",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017",
  "mata_kuliah" : [
    ObjectId("5c76a7c20765a6bca610ca31"),
    ObjectId("5c76a9c40765a6bca610ca32"),
    ObjectId("5c76aa040765a6bca610ca33")
  ]
}
{
  "_id" : ObjectId("5c76a7280765a6bca610ca2f"),
  "nim" : "17050623013",
  "nama" : "Gigih Prasetya",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017",
  "mata_kuliah" : [
    ObjectId("5c76a7c20765a6bca610ca31"),
    ObjectId("5c76a9c40765a6bca610ca32"),
    ObjectId("5c76aa040765a6bca610ca33")
  ]
}
{
  "_id" : ObjectId("5c76a7480765a6bca610ca30"),
  "nim" : "17050623014",
  "nama" : "Charisma Aulya",
  "jurusan" : "Teknik Informatika",
  "angkatan" : "2017",
  "mata_kuliah" : [
    ObjectId("5c76a7c20765a6bca610ca31"),
    ObjectId("5c76a9c40765a6bca610ca32"),
    ObjectId("5c76aa040765a6bca610ca33")
  ]
}
>
```