

**Q. Write an example of Map reduce using MongoDB**

```
db.FootballPlayers.find().pretty();
{
  "_id" : ObjectId("5d77344ccf5de44f995e742d"),
  "name" : [
    {
      "fname" : "Cristiano",
      "lname" : "Ronaldo"
    }
  ],
  "age" : 34,
  "teams" : [
    "Juventus",
    "Portugal"
  ],
  "position" : "ST",
  "rating" : 93
}
{
  "_id" : ObjectId("5d7734dccf5de44f995e742e"),
  "name" : [
    {
      "fname" : "Lionel",
      "lname" : "Messi"
    }
  ],
  "age" : 32,
  "teams" : [
    "FCBarcelona",
    "Argentina"
  ],
  "position" : "RW",
  "rating" : 94
}
{
  "_id" : ObjectId("5d77350ccf5de44f995e742f"),
  "name" : [
    {
      "fname" : "Neymar",
      "lname" : "Jr"
    }
  ],
  "age" : 27,
  "teams" : [
    "FCBarcelona",
    "Brazil"
  ],
  "position" : "LW",
}
```

```
    "rating" : 92
  }
  {
    "_id" : ObjectId("5d7735d9cf5de44f995e7430"),
    "name" : [
      {
        "fname" : "Eden",
        "lname" : "Hazard"
      }
    ],
    "age" : 28,
    "teams" : [
      "RealMadrid",
      "Belgium"
    ],
    "position" : "LW",
    "rating" : 91
  }
  {
    "_id" : ObjectId("5d773611cf5de44f995e7431"),
    "name" : [
      {
        "fname" : "Kevin",
        "lname" : "DeBruyne"
      }
    ],
    "age" : 28,
    "teams" : [
      "ManCity",
      "Belgium"
    ],
    "position" : "CAM",
    "rating" : 91
  }
  {
    "_id" : ObjectId("5d7736c4cf5de44f995e7432"),
    "name" : [
      {
        "fname" : "Jan",
        "lname" : "Oblak"
      }
    ],
    "age" : 26,
    "teams" : [
      "AthleticoMadrid",
      "Slovenia"
    ],
    "position" : "GK",
    "rating" : 90
  }
}
```

```

}
{
  "_id" : ObjectId("5d7736ffcf5de44f995e7433"),
  "name" : [
    {
      "fname" : "Virgil",
      "lname" : "VanDijk"
    }
  ],
  "age" : 28,
  "teams" : [
    "Liverpool",
    "Netherlands"
  ],
  "position" : "CB",
  "rating" : 90
}
{
  "_id" : ObjectId("5d77379bcf5de44f995e7434"),
  "name" : [
    {
      "fname" : "Mohamed",
      "lname" : "Salah"
    }
  ],
  "age" : 27,
  "teams" : [
    "Liverpool",
    "Egypt"
  ],
  "position" : "RW",
  "rating" : 90
}
{
  "_id" : ObjectId("5d7737bfcf5de44f995e7435"),
  "name" : [
    {
      "fname" : "Luka",
      "lname" : "Modric"
    }
  ],
  "age" : 34,
  "teams" : [
    "RealMadrid",
    "Croatia"
  ],
  "position" : "CM",
  "rating" : 90
}

```

```

{
  "_id" : ObjectId("5d77381ccf5de44f995e7436"),
  "name" : [
    {
      "fname" : "MarcAndre",
      "lname" : "TerStegen"
    }
  ],
  "age" : 27,
  "teams" : [
    "FCBarcelona",
    "Germany"
  ],
  "position" : "GK",
  "rating" : 90
}
{
  "_id" : ObjectId("5d773e444f61de78cbd01f92"),
  "name" : "Pep",
  "Team" : "ManCity"
}

```

**Q. Write a map reduce function to calculate the average of ratings of all players whose age is greater than 25 and group by age.**

```

> db.FootballPlayers.mapReduce(function(){emit(this.age, this.rating);},function(key, values){return
Array.avg(values)},{query:{age:{>25}},out:"Result"}).find().pretty()
{ "_id" : 26, "value" : 90 }
{ "_id" : 27, "value" : 90.666666666666667 }
{ "_id" : 28, "value" : 90.666666666666667 }
{ "_id" : 32, "value" : 94 }
{ "_id" : 34, "value" : 91.5 }

```

**Q. Write a map reduce function to calculate the sum of ratings of all players**

```

> db.FootballPlayers.mapReduce(function(){emit(this.age, this.rating);},function(key, values){return
Array.sum(values)},{query:{rating:90},out:"Result"}).find().pretty()
{ "_id" : 26, "value" : 90 }
{ "_id" : 27, "value" : 180 }
{ "_id" : 28, "value" : 90 }
{ "_id" : 34, "value" : 90 }

```