CSE-5331-001 DBMS MODELS AND IMPLEMENTATION

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PROJECT 2

TEAM :

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QUESTION 1:

Combining Project with Department and storing it in ProjDept

```
db.PROJECT.aggregate(
[
  {
    '$lookup': {
      'from': 'DEPARTMENT',
      'localField': 'Dnum',
      'foreignField': 'Dnumber',
      'as': 'ProjDept'
    }
  }, {
    '$unwind': {
      'path': '$ProjDept'
    }
  }, {
    '$project': {
      'Pname': 1,
      'Pnumber': 1,
      'ProjDept.Dname': 1
    }
  }, {
    '$out': 'ProjDept'
  }
])
```

Combining Project with Employee and storing it in ProjEmp

db.PROJECT.aggregate(

```
[
  {
    '$lookup': {
      'from': 'EMPLOYEE',
      'localField': 'Dnum',
      'foreignField': 'Dno',
      'as': 'ProjEmp'
    }
  }, {
    '$project': {
      'Pname': 1,
      'Pnumber': 1,
      'ProjEmp.Fname': 1,
      'ProjEmp.Lname': 1
    }
  }, {
    '$out': 'ProjEmp'
  }
])
```

Combining ProjEmp with WORKS_ON and storing it in ProjEmpWorks

```
db.ProjEmp.aggregate([
  {
    '$lookup': {
      'from': 'WORKS_ON',
      'localField': 'Pnumber',
      'foreignField': 'Pno',
```

```
      'as': 'ProjEmpWorks'

    }

  }, {

    '$project': {

      'Pname': 1,

      'Pnumber': 1,

      'ProjEmp.Fname': 1,

      'ProjEmp.Lname': 1,

      'ProjEmpWorks.Hours': 1

    }

  }, {

    '$out': 'ProjEmpWorks'

  }

])
```

Merging ProjEmpWorks with ProjDept and storing it in ProjectFinal

```
db.ProjEmpWorks.aggregate([

  {

    '$lookup': {

      'from': 'ProjDept',

      'localField': 'Pnumber',

      'foreignField': 'Pnumber',

      'as': 'ProjectFinal'

    }

  },

      {

$replaceRoot: { newRoot: { $mergeObjects: [ { $arrayElemAt: [ "$ProjectFinal", 0 ] }, "$$ROOT" ] } }
```

```
},

{ $project: { ProjectFinal: 1 } },

{$out:"ProjectFinal"}

])
```
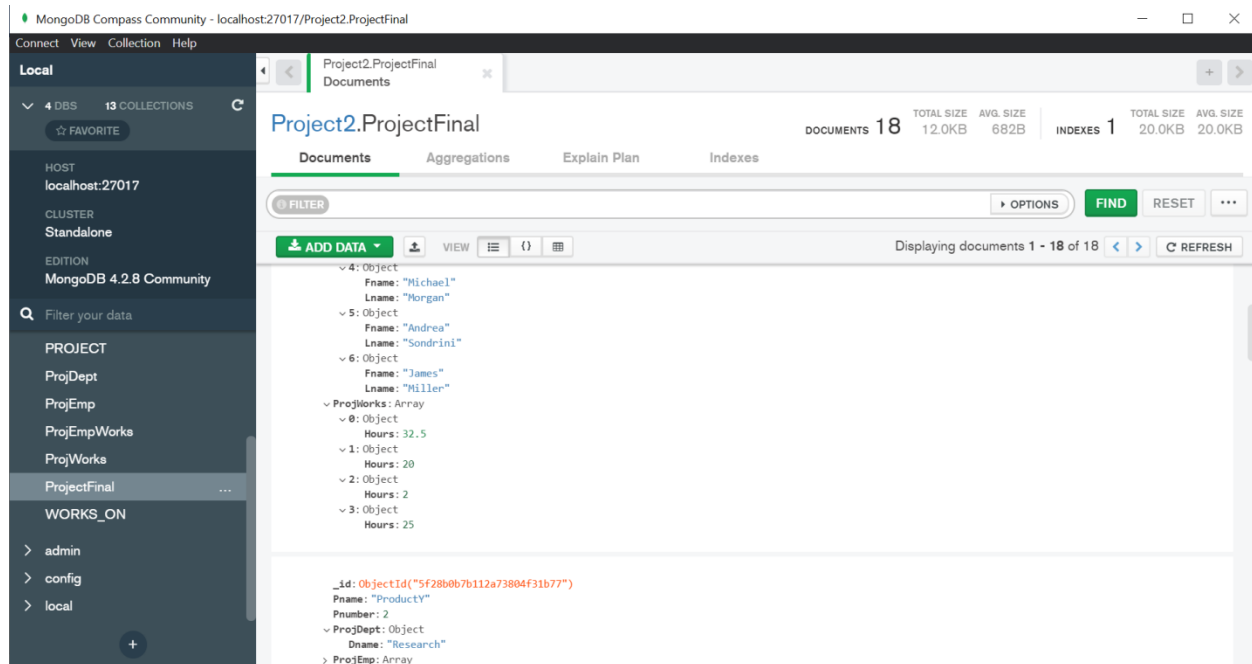
Complex Object for Project:

QUERIES FOR QUESTION 1:

QUESTION 2:

Combining Employee with Department and storing it in EmpDept

db.EMPLOYEE.aggregate(

[

  {

    '$lookup': {

      'from': 'DEPARTMENT',

      'localField': 'Dno',

      'foreignField': 'Dnumber',

      'as': 'EmpDept'

    }

```
  }, {
    '$unwind': {

      'path': '$EmpDept'

    }

  }, {

    '$project': {

      'Fname': 1,

      'Lname': 1,

      'Dno': 1,

      'EmpDept.Dname': 1

    }

  }, {

    '$out': 'EmpDept'

  }

])
```

Combining Project and Works_on and storing it in ProjWorks

```
db.PROJECT.aggregate(

[

  {

    '$lookup': {

      'from': 'WORKS_ON',

      'localField': 'Pnumber',

      'foreignField': 'Pno',

      'as': 'ProjWorks'

    }

  }, {
```

```
      '$project': {

        'Pname': 1,

        'Pnumber': 1,

        'Dnum': 1,

        'ProjWorks.Hours': 1

      }

  }, {

      '$out': 'ProjWorks'

  }

])
```

Merging EmpDept with ProjWorks and storing it in EmployeeFinal

```
db.EmpDept.aggregate(

[

  {

    '$lookup': {

      'from': 'ProjWorks',

      'localField': 'Dno',

      'foreignField': 'Dnum',

      'as': 'EmployeeFinal'

    }

  }, {

    '$replaceRoot': {

      'newRoot': {

        '$mergeObjects': [

          {

            '$arrayElemAt': [

              '$EmployeeFinal', 0
```

```
                ]
            }, '$$ROOT'
          ]
        }
      }
    }, {
      '$project': {
        'Fname': 1,
        'Lname': 1,
        'EmpDept.Dname': 1,
        'Pname': 1,
        'Pnumber': 1,
        'ProjWorks.Hours': 1
      }
    }, {
      '$out': 'EmployeeFinal'
    }
])
```
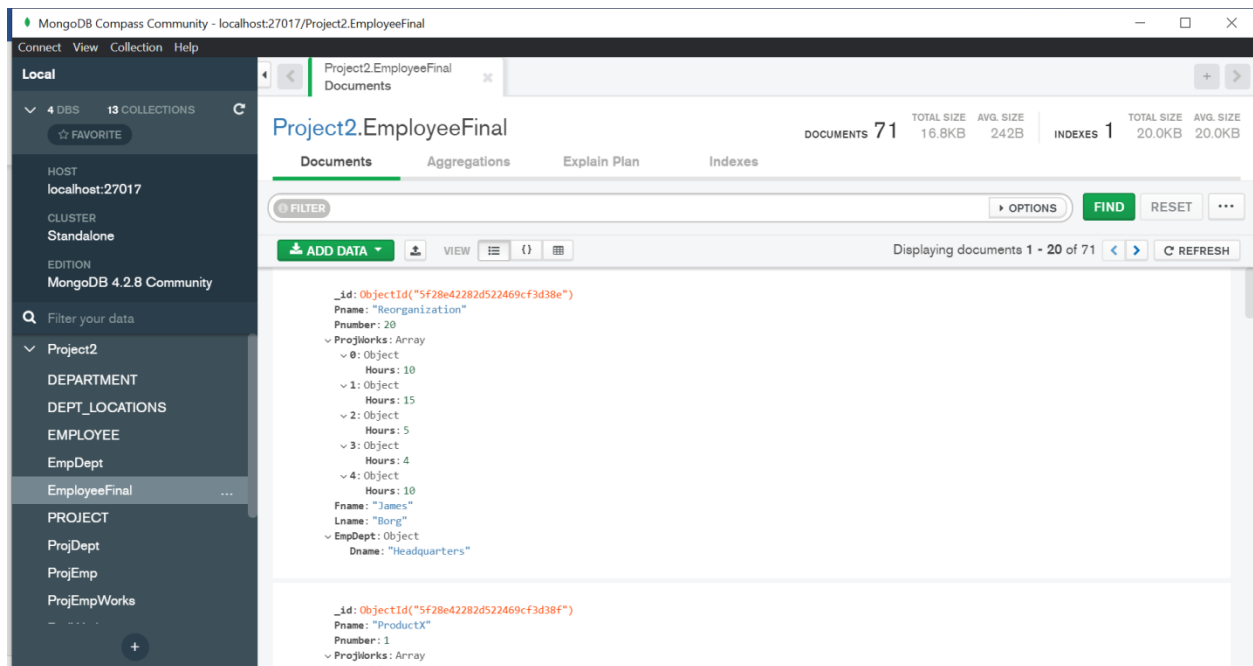
Complex Object for Employee

EXTRA CREDIT :

The XML files were created using an online tool .

https://www.convertjson.com/json-to-xml.htm