Tugas Basis Data Lanjut

Membuat Relasi Database

Nama : Gigih Prasetya

NIM   : 17050623013

Prodi   : D3 Manajemen Informatika

1. One to One

2. One to Many

3. Many to Many

```
Command Prompt - mongo                                                    —   □   ×
> db.detail.insert({id_detail:'', buku: [{id_buku:'', judul:'', pengarang:'', penerbit:'', tahun:''}], peminjaman: [{id_
pinjam:'', tgl_pinjam:'', tgl_kembali:'', tgl_harus_kembali:''}]})
WriteResult({ "nInserted" : 1 })
> db.detail.find().pretty()
{
        "_id" : ObjectId("5c78088a41e266ece79197e0"),
        "id_detail" : "",
        "buku" : [
                {
                        "id_buku" : "",
                        "judul" : "",
                        "pengarang" : "",
                        "penerbit" : "",
                        "tahun" : ""
                }
        ],
        "peminjaman" : [
                {
                        "id_pinjam" : "",
                        "tgl_pinjam" : "",
                        "tgl_kembali" : "",
                        "tgl_harus_kembali" : ""
                }
        ]
}
>
```

4. Tree Structures With Parent References

```
C:\Windows\system32\cmd.exe - mongo
> db.parent.insert({_id:"kendaraan", parent:null})
WriteResult({ "nInserted" : 1 })
> db.parent.insert({_id:"mobil", parent:"kendaraan"})
WriteResult({ "nInserted" : 1 })
> db.parent.insert({_id:"motor", parent:"kendaraan"})
WriteResult({ "nInserted" : 1 })
> db.parent.insert({_id:"manual", parent:"motor"})
WriteResult({ "nInserted" : 1 })
> db.parent.insert({_id:"automatis", parent:"motor"})
WriteResult({ "nInserted" : 1 })
> db.parent.insert({_id:"jupiter z", parent:"manual"})
WriteResult({ "nInserted" : 1 })
> db.parent.insert({_id:"vario", parent:"automatis"})
WriteResult({ "nInserted" : 1 })
> db.paren.find().pretty()
> db.parent.find().pretty()
{ "_id" : "kendaraan", "parent" : null }
{ "_id" : "mobil", "parent" : "kendaraan" }
{ "_id" : "motor", "parent" : "kendaraan" }
{ "_id" : "manual", "parent" : "motor" }
{ "_id" : "automatis", "parent" : "motor" }
{ "_id" : "jupiter z", "parent" : "manual" }
{ "_id" : "vario", "parent" : "automatis" }
>
```

5. Tree Structures With Child References

```
C:\Windows\system32\cmd.exe - mongo

> db.children.insert({_id:"vario", children:[]})
WriteResult({ "nInserted" : 1 })
> db.children.insert({_id:"jupiter z", children:[]})
WriteResult({ "nInserted" : 1 })
> db.children.insert({_id:"mobil", children:[]})
WriteResult({ "nInserted" : 1 })
> db.children.insert({_id:"manual", children:["jupiter z"]})
WriteResult({ "nInserted" : 1 })
> db.children.insert({_id:"automatis", children:["vario"]})
WriteResult({ "nInserted" : 1 })
> db.children.insert({_id:"motor", children:["manual","automatis"]})
WriteResult({ "nInserted" : 1 })
> db.children.insert({_id:"kendaraan", children:["mobil","motor"]})
WriteResult({ "nInserted" : 1 })
> db.children.find().pretty()
{ "_id" : "vario", "children" : [ ] }
{ "_id" : "jupiter z", "children" : [ ] }
{ "_id" : "mobil", "children" : [ ] }
{ "_id" : "manual", "children" : [ "jupiter z" ] }
{ "_id" : "automatis", "children" : [ "vario" ] }
{ "_id" : "motor", "children" : [ "manual", "automatis" ] }
{ "_id" : "kendaraan", "children" : [ "mobil", "motor" ] }
>
```

6. Tree Structures With an Array of Ancestors

```
C:\Windows\system32\cmd.exe - mongo
> db.ancestors.insert({_id:"jupiter z", ancestors:["kendaraan", "motor", "manual"], parent:"manual"})
WriteResult({ "nInserted" : 1 })
> db.ancestors.insert({_id:"vario", ancestors:["kendaraan", "motor", "automatis"], parent:"automatis"})
WriteResult({ "nInserted" : 1 })
> db.ancestors.insert({_id:"manual", ancestors:["kendaraan", "motor"], parent:"motor"})
WriteResult({ "nInserted" : 1 })
> db.ancestors.insert({_id:"automatis", ancestors:["kendaraan", "motor"], parent:"motor"})
WriteResult({ "nInserted" : 1 })
> db.ancestors.insert({_id:"mobil", ancestors:["kendaraan"], parent:"kendaraan"})
WriteResult({ "nInserted" : 1 })
> db.ancestors.insert({_id:"motor", ancestors:["kendaraan"], parent:"kendaraan"})
WriteResult({ "nInserted" : 1 })
> db.ancestors.insert({_id:"kendaraan", ancestors:[], parent:null})
WriteResult({ "nInserted" : 1 })
> db.ancestors.find().pretty()
{
        "_id" : "jupiter z",
        "ancestors" : [
                "kendaraan",
                "motor",
                "manual"
        ],
        "parent" : "manual"
}
{
        "_id" : "vario",
        "ancestors" : [
                "kendaraan",
                "motor",
                "automatis"
        ],
        "parent" : "automatis"
}
{
        "_id" : "manual",
        "ancestors" : [
                "kendaraan",
                "motor"
        ],
        "parent" : "motor"
}
```

```
{
        "_id" : "automatis",
        "ancestors" : [
                "kendaraan",
                "motor"
        ],
        "parent" : "motor"
}
{
        "_id" : "mobil",
        "ancestors" : [
                "kendaraan"
        ],
        "parent" : "kendaraan"
}
{
        "_id" : "motor",
        "ancestors" : [
                "kendaraan"
        ],
        "parent" : "kendaraan"
}
{ "_id" : "kendaraan", "ancestors" : [ ], "parent" : null }
>
```

7. Tree Structures With Materialized Paths

```
C:\Windows\system32\cmd.exe - mongo

> db.path.insert({_id:"kendaraan", path:null})
WriteResult({ "nInserted" : 1 })
> db.path.insert({_id:"mobil", path:"kendaraan"})
WriteResult({ "nInserted" : 1 })
> db.path.insert({_id:"motor", path:"kendaraan"})
WriteResult({ "nInserted" : 1 })
> db.path.insert({_id:"manual", path:"kendaraan,motor,"})
WriteResult({ "nInserted" : 1 })
> db.path.insert({_id:"automatis", path:"kendaraan,motor,"})
WriteResult({ "nInserted" : 1 })
> db.path.insert({_id:"jupiter z", path:"kendaraan,motor,manual"})
WriteResult({ "nInserted" : 1 })
> db.path.insert({_id:"vario", path:"kendaraan,motor,automtis"})
WriteResult({ "nInserted" : 1 })
> db.path.find().pretty()
{ "_id" : "kendaraan", "path" : null }
{ "_id" : "mobil", "path" : "kendaraan" }
{ "_id" : "motor", "path" : "kendaraan" }
{ "_id" : "manual", "path" : "kendaraan,motor," }
{ "_id" : "automatis", "path" : "kendaraan,motor," }
{ "_id" : "jupiter z", "path" : "kendaraan,motor,manual" }
{ "_id" : "vario", "path" : "kendaraan,motor,automtis" }
>
```