

**Rois Sholehan**

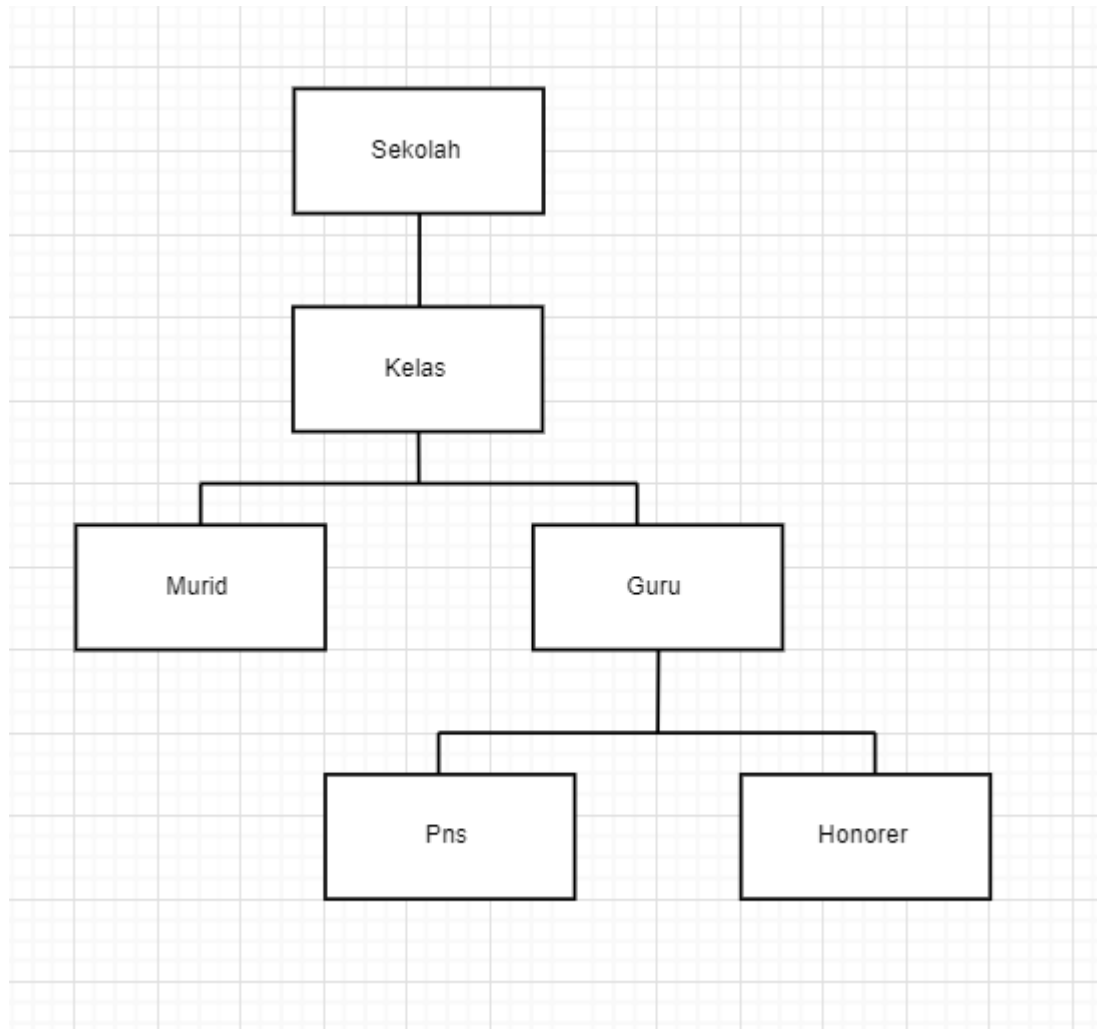
**17050623008**

**D3 – Manajemen Informatika**

## **TUGAS BASIS DATA LANJUT**

### **MONGO DB TREE STRUCTURE**

**Tingkatan Field darii collection “kategori”**



## 1. Parrent References

```
> show databases
admin            0.000GB
config           0.000GB
hutanrimbun      0.000GB
local            0.000GB
parentreferences 0.000GB
> use parent_preferences
switched to db parent_preferences
> db.categories.insert({_id:'Pns', parent:'Guru'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Honoror', parent:'Guru'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Guru', parent:'Kelas'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Murid', parent:'Kelas'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Kelas', parent:'Sekolah'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Kelas', parent:null})
WriteResult({
  "nInserted" : 0,
  "writeError" : {
    "code" : 11000,
    "errmsg" : "E11000 duplicate key error collection: parent_preferences.categories index: _id_ dup key: { : \"Kelas\" }"
  }
})
> db.categories.insert({_id:'Sekolah', parent:null})
WriteResult({ "nInserted" : 1 })
```

```
> db.categories.findOne({_id:'Pns'}).parent
Guru
```

```
> db.categories.createIndex({parent:1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
```

```
> db.categories.find({parent:'Guru'})
{ "_id" : "Pns", "parent" : "Guru" }
{ "_id" : "Honoror", "parent" : "Guru" }
> _
```

## 2. Child References

cmd C:\WINDOWS\system32\cmd.exe - mongo

```
> show databases
admin                0.000GB
config               0.000GB
hutanrimbun          0.000GB
local                0.000GB
parent_preferences   0.000GB
parentreferences      0.000GB
> use childpreferences
switched to db childpreferences
> db.categories.insert({_id:'Pns', children:[]})
Display all 180 possibilities? (y or n)
> db.categories.insert({_id:'Pns', children:[]})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Honorer', children:[]})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Guru', children:['Pns','Hoorer']})
2019-03-27T21:15:59.001+0700 E QUERY [js] SyntaxError: missing } after property list @(shell):1:46
> db.categories.insert({_id:'Guru', children:['Pns','Hoorer']})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Murid', children:[]})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Kelas', children:['Murid','Guru']})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Sekolah', children:['Kelas']})
WriteResult({ "nInserted" : 1 })
```

```
> db.categories.findOne({_id:'Guru'}).children
[ "Pns", "Hoorer" ]
```

```
> db.categories.findOne({children:'Pns'})
{ "_id" : "Guru", "children" : [ "Pns", "Hoorer" ] }
>
```

### 3. 3.Array Of Ancestors

ca. C:\WINDOWS\system32\cmd.exe - mongo

```
> show databases
admin                0.000GB
childpreferences     0.000GB
config               0.000GB
hutanrimbun          0.000GB
local                0.000GB
parent_preferences   0.000GB
parentreferences      0.000GB
> use arrayancestors
switched to db arrayancestors
> db.categories.insert({_id:'Pns',ancestors:['Sekolah','Kelas','Guru'],parent:'Guru'})
2019-03-27T21:40:56.623+0700 E QUERY [js] SyntaxError: missing ) after argument list @(shell):1:24
> db.categories.insert({_id:'Pns',ancestors:['Sekolah','Kelas','Guru'],parent:'Guru'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Honorer',ancestors:['Sekolah','Kelas','Guru'],parent:'Guru'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Guru',ancestors:['Sekolah','kelas'],parent:'Kelas'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Murid',ancestors:['Sekolah','kelas'],parent:'Kelas'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Kelas',ancestors:['Sekolah'],parent:'Sekolah'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'sekolah',ancestors:[],parent:null})
WriteResult({ "nInserted" : 1 })
```

```
> db.categories.findOne({_id:'Pns'}).ancestors
[ "Sekolah", "Kelas", "Guru" ]
```

```
> db.categories.createIndex({ancestors:1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
```

```
> db.categories.find({ancestors:'Kelas'})
{ "_id" : "Pns", "ancestors" : [ "Sekolah", "Kelas", "Guru" ], "parent" : "Guru" }
{ "_id" : "Honorer", "ancestors" : [ "Sekolah", "Kelas", "Guru" ], "parent" : "Guru" }
> -
```

#### 4. Materialized Paths

Ca. C:\WINDOWS\system32\cmd.exe - mongo

```
switched to db materialized
> db.categories.insert({_id:'Sekolah',path:null})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Kelas',path:',Sekolah,'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Guru',path:',Sekolah,Kelas'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Murid',path:',Sekolah,Kelas'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Pns',path:',Sekolah,Kelas,Guru,'})
WriteResult({ "nInserted" : 1 })
> db.categories.insert({_id:'Honorar',path:',Sekolah,Kelas,Guru,'})
WriteResult({ "nInserted" : 1 })
> db.categories.find().sort({path:1})
{ "_id" : "Sekolah", "path" : null }
{ "_id" : "Kelas", "path" : ",Sekolah," }
{ "_id" : "Guru", "path" : ",Sekolah,Kelas" }
{ "_id" : "Murid", "path" : ",Sekolah,Kelas" }
{ "_id" : "Pns", "path" : ",Sekolah,Kelas,Guru," }
{ "_id" : "Honorar", "path" : ",Sekolah,Kelas,Guru," }
> db.categories.find({path:/,Kelas,/})
{ "_id" : "Pns", "path" : ",Sekolah,Kelas,Guru," }
{ "_id" : "Honorar", "path" : ",Sekolah,Kelas,Guru," }
> db.categories.find({path:/^,Sekolah,/})
{ "_id" : "Kelas", "path" : ",Sekolah," }
{ "_id" : "Guru", "path" : ",Sekolah,Kelas" }
{ "_id" : "Murid", "path" : ",Sekolah,Kelas" }
{ "_id" : "Pns", "path" : ",Sekolah,Kelas,Guru," }
{ "_id" : "Honorar", "path" : ",Sekolah,Kelas,Guru," }
>
```