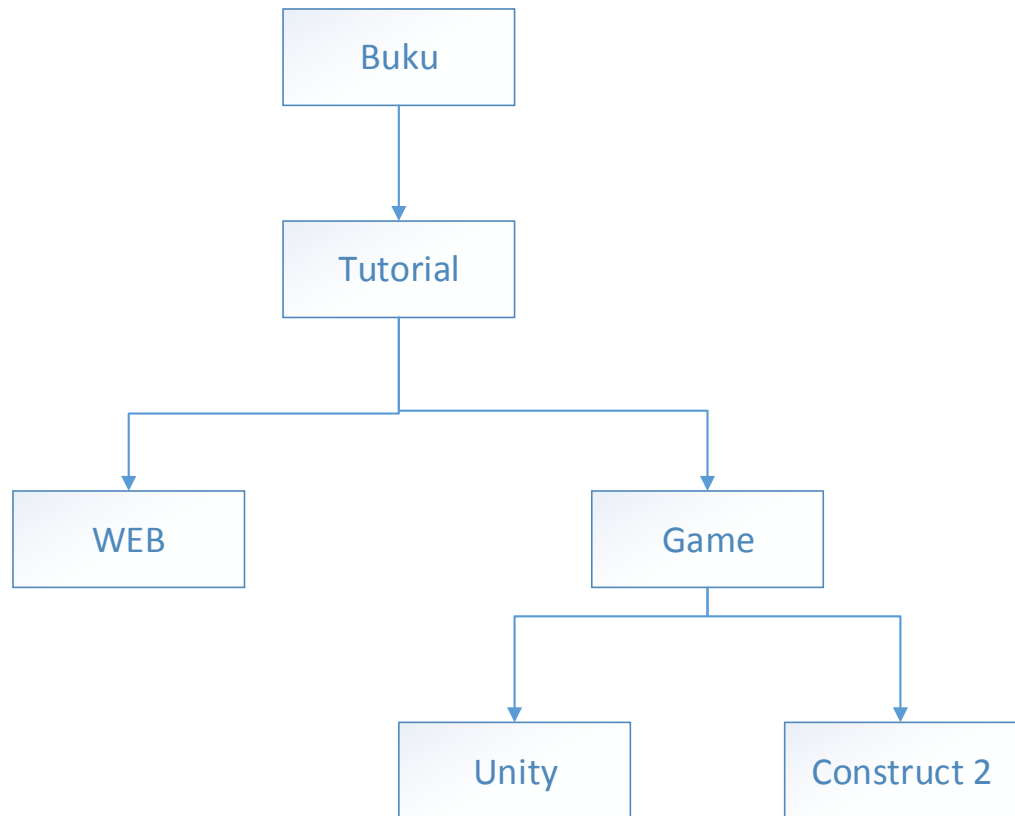


CHARISMA AULYA

17050623014

Tugas Basis Data Lanjut



1. Model Tree Structures with Parent References

```
cal C:\Windows\system32\cmd.exe - mongo
uct
improvements and to suggest MongoDB products and deployment options to you.
To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
> show databases
admin    0.000GB
config  0.000GB
local    0.000GB
> use tugasTree
switched to db tugasTree
> db.buku_tutor.insert({_id: "unity", parent: "Game"})
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert({_id: "Construct2", parent: "Game"})
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert({_id: "WEB", parent: "Tutorial"})
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert({_id: "Game", parent: "Tutorial"})
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert({_id: "Tutorial", parent: "Buku"})
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert({_id: "Buku", parent: null})
WriteResult<< "nInserted" : 1 >>
>
> db.buku_tutor.findOne({_id: "unity"}).parent
Game
> db.buku_tutor.createIndex({parent: 1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
>
> db.buku_tutor.find({parent: "Game"})
{ "_id" : "unity", "parent" : "Game" }
{ "_id" : "Construct2", "parent" : "Game" }
```

2. Model Tree Structures with Child References

```
C:\Windows\system32\cmd.exe - mongo
> show databases
admin      0.000GB
config     0.000GB
local      0.000GB
tugasTree 0.000GB
> use tugasTreeCR
switched to db tugasTreeCR
> db.buku_tutor.insert({_id: "Unity", children: []})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Construct2", children: []})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Game", children: ["Unity", "Construct2"]})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "WEB", children: []})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Tutorial", children: ["WEB", "Game"]})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Buku", children: ["Tutorial"]})
WriteResult({ "nInserted" : 1 })
>

> db.buku_tutor.findOne({_id: "Unity"}).children
[ ]
> db.buku_tutor.findOne({_id: "Game"}).children
[ "Unity", "Construct2" ]
>
>
> db.buku_tutor.createIndex({children: 1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
>
> db.buku_tutor.find({children: "Tutorial"})
{ "_id" : "Buku", "children" : [ "Tutorial" ] }
>
```

3. Model Tree Structures with An Array of Ancestors

```
C:\Windows\system32\cmd.exe - mongo
> show databases
admin          0.000GB
config         0.000GB
local          0.000GB
tugasTree      0.000GB
tugasTreeCR    0.000GB
> use tugasArAn
switched to db tugasArAn
> db.buku_tutor.insert({_id: "Unity", ancestors: ["Buku", "Tutorial", "Game"], parent: "Game"})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Construct2", ancestors: ["Buku", "Tutorial", "Game"], parent: "Game"})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "WEB", ancestors: ["Buku", "Tutorial"], parent: "Tutorial"})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Game", ancestors: ["Buku", "Tutorial"], parent: "Tutorial"})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Tutorial", ancestors: ["Buku"], parent: "Buku"})
WriteResult({ "nInserted" : 1 })
> db.buku_tutor.insert({_id: "Buku", ancestors: [], parent: null})
WriteResult({ "nInserted" : 1 })
>

> db.buku_tutor.findOne({_id: "Unity"}).ancestors
[ "Buku", "Tutorial", "Game" ]
> db.buku_tutor.createIndex({ancestors: 1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
>
> db.buku_tutor.find({ancestors: "Tutorial"})
{ "_id" : "Unity", "ancestors" : [ "Buku", "Tutorial", "Game" ], "parent" : "Game" }
{ "_id" : "Construct2", "ancestors" : [ "Buku", "Tutorial", "Game" ], "parent" : "Game" }
{ "_id" : "WEB", "ancestors" : [ "Buku", "Tutorial" ], "parent" : "Tutorial" }
{ "_id" : "Game", "ancestors" : [ "Buku", "Tutorial" ], "parent" : "Tutorial" }
>
```

4. Model Tree Structures with Materialized Paths

```
C:\Windows\system32\cmd.exe - mongo
> show databases
admin          0.000GB
config         0.000GB
local          0.000GB
tugasArAn      0.000GB
tugasTree      0.000GB
tugasTreeCR    0.000GB
> use tugasMP
switched to db tugasMP
> db.buku_tutor.insert<<_id: "Buku", path: null>>
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert<<_id: "Tutorial", path: ",Buku,">>
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert<<_id: "Game", path: ",Buku,Tutorial,">>
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert<<_id: "WEB", path: ",Buku,Tutorial,">>
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert<<_id: "Unity", path: ",Buku,Tutorial,Game,">>
WriteResult<< "nInserted" : 1 >>
> db.buku_tutor.insert<<_id: "Construct2", path: ",Buku,Tutorial,Game,">>
WriteResult<< "nInserted" : 1 >>
>

> db.buku_tutor.find<<sort<<path: 1>>
{ "_id" : "Buku", "path" : null }
{ "_id" : "Tutorial", "path" : ",Buku," }
{ "_id" : "Game", "path" : ",Buku,Tutorial," }
{ "_id" : "WEB", "path" : ",Buku,Tutorial," }
{ "_id" : "Unity", "path" : ",Buku,Tutorial,Game," }
{ "_id" : "Construct2", "path" : ",Buku,Tutorial,Game," }
>
> db.buku_tutor.find<<path: /,Tutorial,/>>
{ "_id" : "Game", "path" : ",Buku,Tutorial," }
{ "_id" : "WEB", "path" : ",Buku,Tutorial," }
{ "_id" : "Unity", "path" : ",Buku,Tutorial,Game," }
{ "_id" : "Construct2", "path" : ",Buku,Tutorial,Game," }
>
> db.buku_tutor.find<<path: /,Buku,/>>
{ "_id" : "Tutorial", "path" : ",Buku," }
{ "_id" : "Game", "path" : ",Buku,Tutorial," }
{ "_id" : "WEB", "path" : ",Buku,Tutorial," }
{ "_id" : "Unity", "path" : ",Buku,Tutorial,Game," }
{ "_id" : "Construct2", "path" : ",Buku,Tutorial,Game," }
>
> db.buku_tutor.createIndex<<path: 1>>
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
>
```