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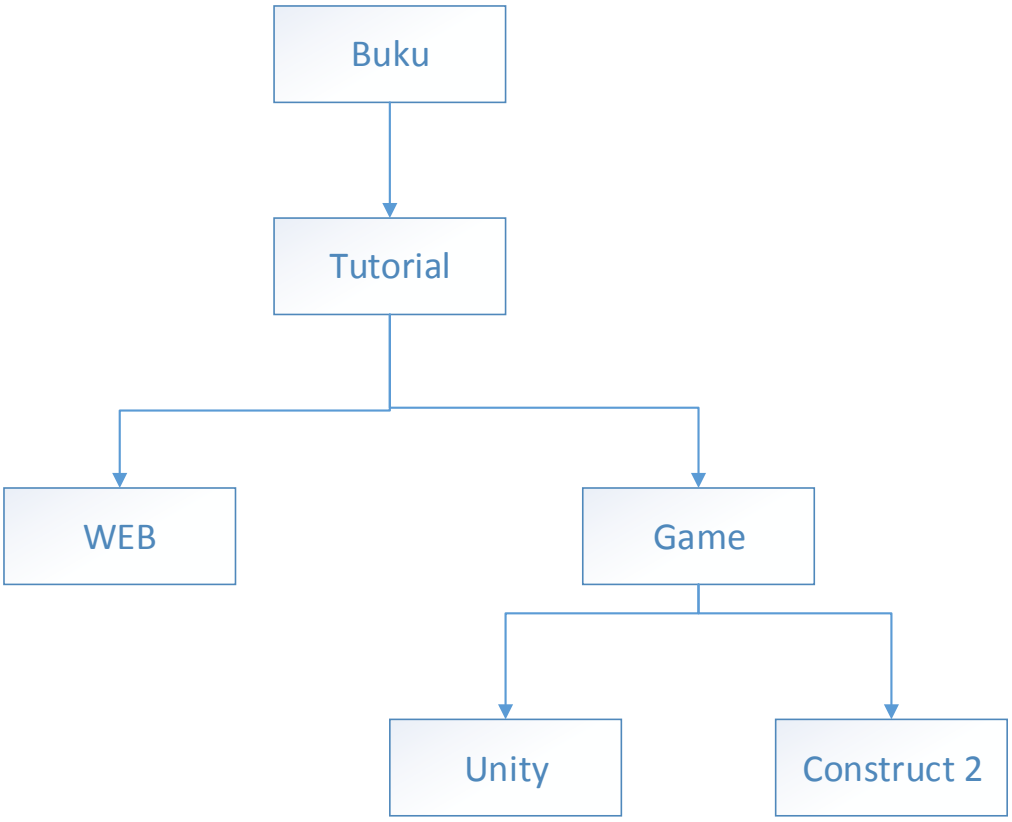
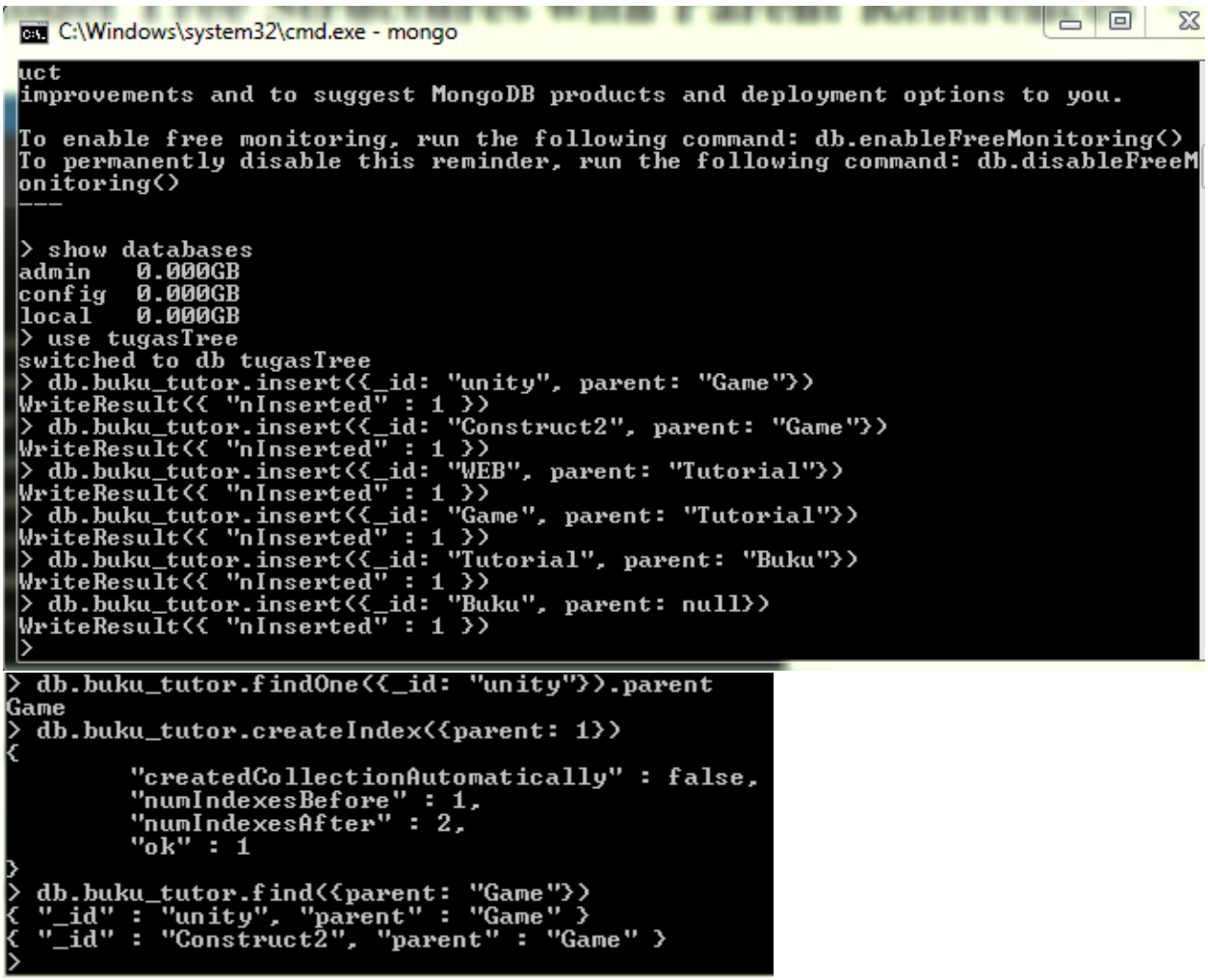
17050623014

Tugas Basis Data Lanjut

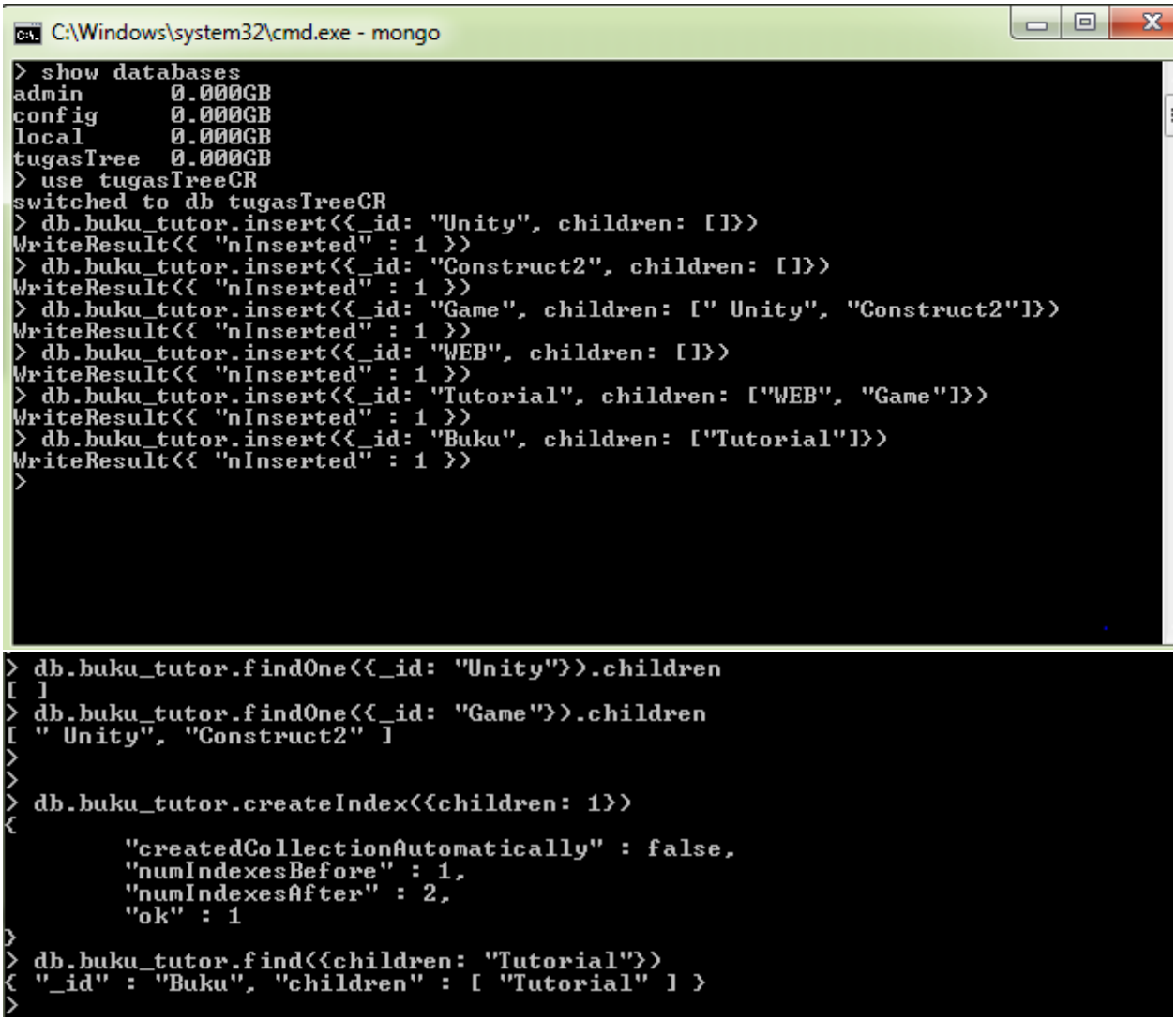


1. **Model Tree Structures with Parent References**

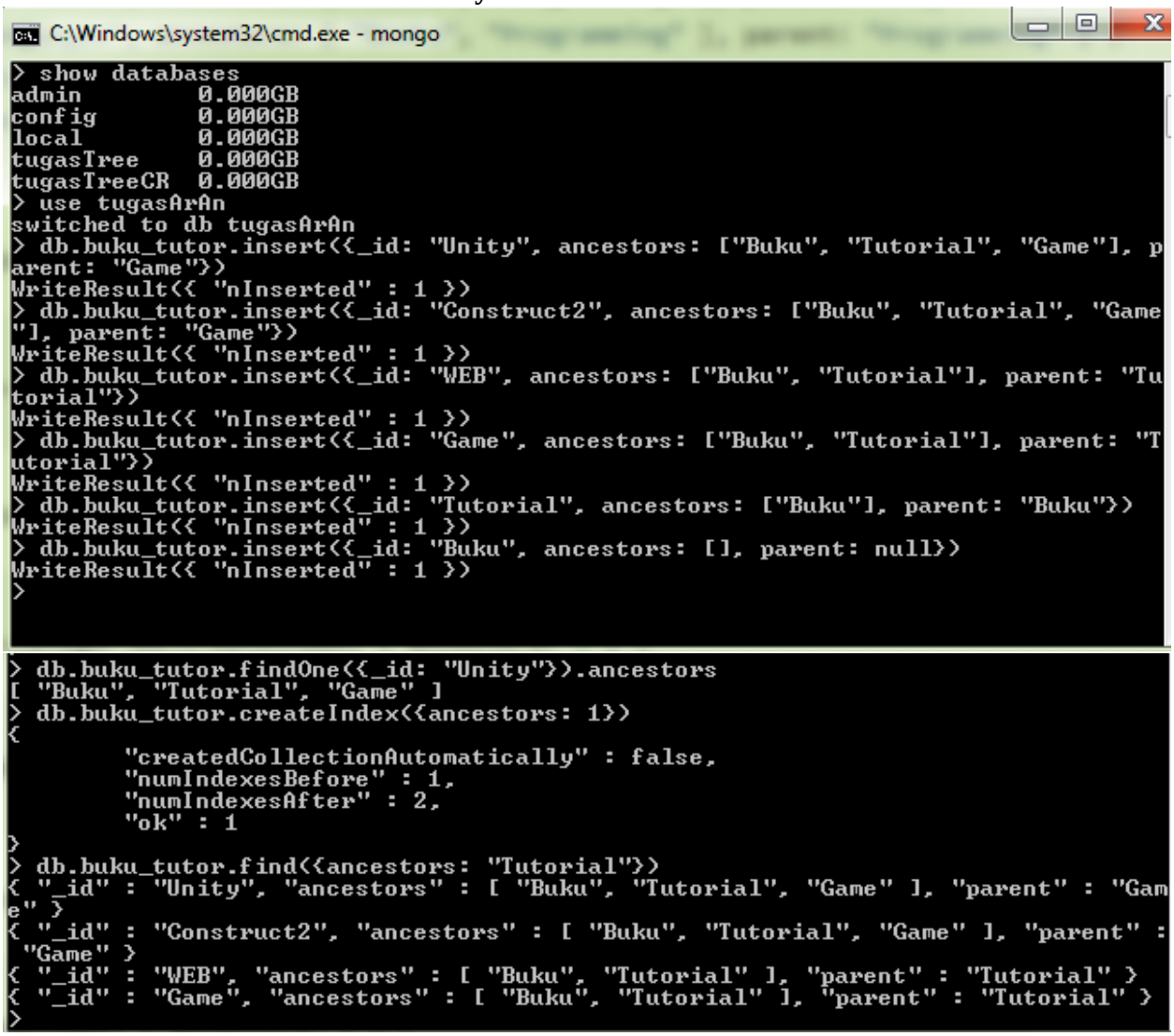



```
> db.buku_tutor.findOne({_id: "unity"}).parent
Game
> db.buku_tutor.createIndex({parent: 1})
{
        "createdCollectionAutomatically" : false,
        "numIndexesBefore" : 1,
        "numIndexesAfter" : 2,
        "ok" : 1
}
> db.buku_tutor.find({parent: "Game"})
{ "_id" : "unity", "parent" : "Game" }
{ "_id" : "Construct2", "parent" : "Game" }
>
```

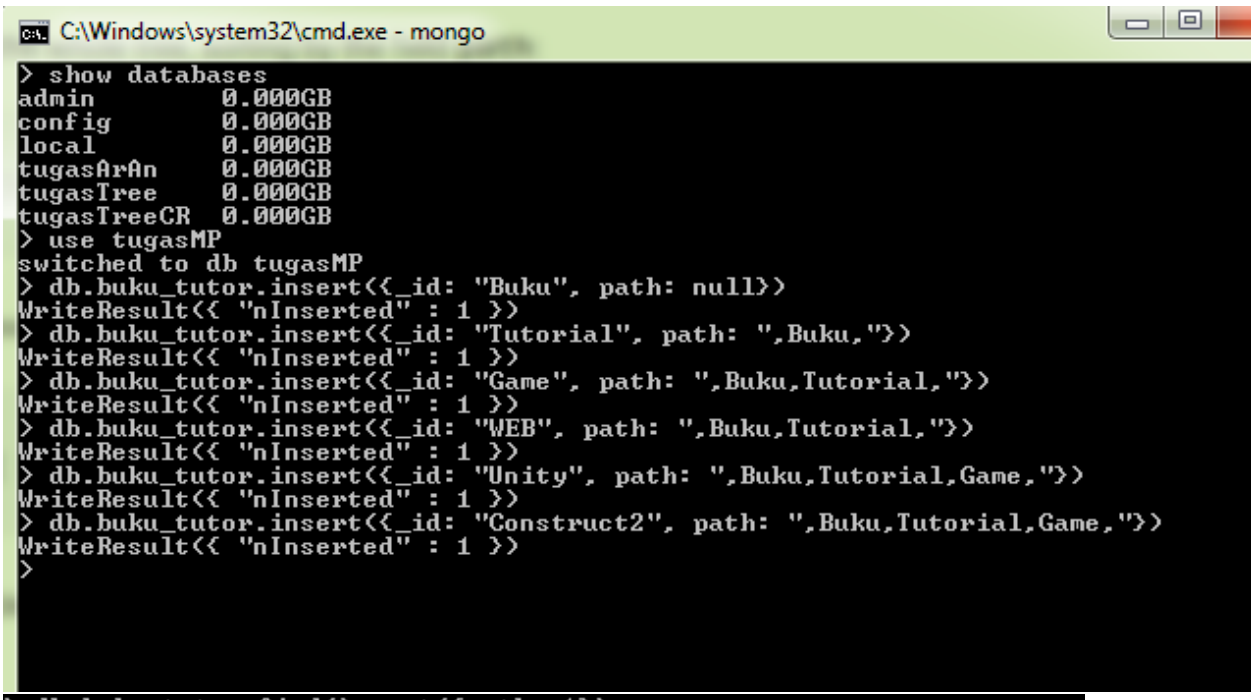
2. Model Tree Structures with Child References



3. **Model Tree Structures with An Array of Ancestors**



4. **Model Tree Structures with Materialized Paths**




```
> 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
}
>
```