Applied 12 Non-Relational Databases - Big Data and NoSQL Sample Solutions

A12 Non-Relational Databases - Big Data and NoSQL Sample Solutions

A12-3 MongoDB Tasks - applied12_oracle.sql

```
/*
Applied 12 Sample Solution
applied12_task1_sol.sql

Databases Units
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*/

SELECT
    JSON_OBJECT ( '_id' VALUE stuid, 'name' VALUE stufname
                || ' '
                || stulname,
                'contactInfo' VALUE JSON_OBJECT (
                                'address' VALUE stuaddress,
                                'phone' VALUE stuphone,
                                'email' VALUE stuemail ),
                'dob' VALUE to_char(studob, 'dd-mm-yyyy'),
                'enrolmentInfo' VALUE JSON_ARRAYAGG(
                                JSON_OBJECT('unitcode' VALUE unitcode,
                                'unitname' VALUE unitname,
                                'year' VALUE to_char(ofyear, 'yyyy'),
                                'semester' VALUE ofsemester,
                                'mark' VALUE enrolmark,
                                'grade' VALUE enrolgrade))
    FORMAT JSON )
    || ','
FROM
    uni.student
    NATURAL JOIN uni.enrolment
    NATURAL JOIN uni.unit
GROUP BY
    stuid,
```

```
    stufname,
    stulname,
    stuaddress,
    stuphone,
    stuemail,
    studob
ORDER BY
    stuid;
```

A12-3 MongoDB Tasks - applied12_mongo.mongodb.js

```
/*
Applied 12 Sample Solution
applied12_mongo_soln.mongodb.js

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*/

// Must be changed to your authcate
use ("abc001");

//2. Create a new collection named as enrolment and insert the first 10 documents
//generated by the select statement from 1 above into MongoDB.
//Provide a drop collection statement right above the create collection statement.
//After the documents have been inserted, use an appropriate db.find command to list all the docume
db.enrolment.drop();

db.enrolment.insertMany([
    {"_id":11443959,"name":"Geraldine Lomb","contactInfo":{"address":"55 Northwestern Trail, Toorak
    {"_id":11620237,"name":"Marlane Joiris","contactInfo":{"address":"385 Warbler Road, Preston","p
    {"_id":12489379,"name":"Gilberto Bwy","contactInfo":{"address":"5664 Loomis Parkway, Melbourne"
    {"_id":12511467,"name":"Francyne Rigney","contactInfo":{"address":"75 Buhler Street, Mulgrave",
    {"_id":12609485,"name":"Cassondra Sedcole","contactInfo":{"address":"6507 Tennessee Alley, Melb
    {"_id":12802225,"name":"Friedrick Geist","contactInfo":{"address":"99271 Eliot Pass, Dingley","
    {"_id":12842838,"name":"Herminia Mendus","contactInfo":{"address":"64186 East Lane, Moorabbin",
    {"_id":13019582,"name":"Tani Aitchison","contactInfo":{"address":"842 Paget Drive, Mount Waverl
    {"_id":13028303,"name":"Herculie Mendus","contactInfo":{"address":"44 Becker Street, Mulgrave",
    {"_id":13119134,"name":"Shandra Lindblom","contactInfo":{"address":"9241 Rieder Parkway, Chelse
]);

db.enrolment.find();

//3. Create a new enrolment for studid 12489379, the student is enrolled in FIT2002
// (IT Project Management) in semester 1 2022. Since this is a new enrolment,
// set the mark and the grade as null. Use an appropriate db.find command after making the change
// so that you illustrate/confirm the change which was made.
```

```
db.enrolment.updateOne(
    {"_id":12489379},
    {"$push":
        {
            "enrolmentInfo":
            {
                "unitcode":"FIT2002",
                "unitname":"IT Project Management",
                "year":"2022",
                "semester":1,
                "mark":null,
                "grade":null
            }
        }
    }
);

db.enrolment.find(
    {"_id":12489379}
);

//4. Update this enrolment for studid 12489379 in FIT2002,
// set the mark to 65 and grade to C. Use an appropriate db.find command after making the change
// so that you illustrate/confirm the change which was made.

db.enrolment.updateOne(
    {
        "_id":12489379,
        "enrolmentInfo.unitcode":"FIT2002",
        "enrolmentInfo.year":"2022",
        "enrolmentInfo.semester":1
    },
    {
        "$set":
        {
            "enrolmentInfo.$.mark":65,
            "enrolmentInfo.$.grade":"C"
        }
    }
);

db.enrolment.find(
    {"_id":12489379}
);

//5. Delete this enrolment for student id 12489379 in FIT2002. Use an appropriate db.find
// command after making the change so that you illustrate/confirm the change which was made.

db.enrolment.updateOne(
    {"_id":12489379},
    {
        "$pull":{
        "enrolmentInfo":{
```

```
            "unitcode":"FIT2002",
            "year":"2022",
            "semester":1
            }
        }
    }
);

db.enrolment.find({"_id":12489379});

//-------------------------------------------------------------
//MongoDB Read
//Write db.find() commands for following questions:
//1. Retrieve the document for student id = 12802225
db.enrolment.find(
    {"_id":12802225}
);
//or
db.enrolment.find(
    {"_id":{"$eq":12802225}}
);

//2. Show the id and name of students who have any mark greater than 95 in any enrolment (hint: use
db.enrolment.find(
    {"enrolmentInfo.mark":{"$gt":95}},
    {"_id":1,"name":1}
);

//3. Retrieve the name and contact info of students who enrolled in any unit which has "web design"
db.enrolment.find(
    {"enrolmentInfo.unitname":/.*web design.*/},
    {"name":1,"contactInfo":1}
);

//4. Retrieve the  id and name of any students who have grades WH or N
//v1
db.enrolment.find(
    {"enrolmentInfo.grade":{"$in":["WH","N"]}},
    {"_id":1,"name":1}
);
//v2
db.enrolment.find(
    {"$or":[{"enrolmentInfo.grade":"WH"},{"enrolmentInfo.grade":"N"}]},
    {"_id":1,"name":1}
);
```