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Academic Semester:  AY21/22 - S2

Module Code: ST1501

Module Name: Database Engineering (DENG)

Assignment: CA2

Class: DIT/FT/2B/24

Project Title:  
CA2 Individual Assignment

**Done by:**

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Lecturer:

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Date of Submission: 06 June 2022

**ST1501 CA2 Indiviudal Task**

**Class: DIT/FT/2B/24**

**Group No: 4**

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**Individual Task**

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| Item | SQL statement for JSON format |
| UnSold – create a collection to store those products which have never been sold | SELECT  p.product\_id,  p.product\_name,  b.brand\_name,  c.category\_name,  p.model\_year,  p.list\_price  FROM  production.products as p,  production.brands as b,  production.categories as c,  production.stocks as s  WHERE  p.product\_id NOT IN(  SELECT  OI.product\_id  FROM  sales.order\_items AS OI  ) AND  p.brand\_id = b.brand\_id AND  p.category\_id = c.category\_id  GROUP BY  p.product\_id,  p.product\_name,  b.brand\_name,  c.category\_name,  p.model\_year,  p.list\_price  FOR JSON PATH |
| ZeroStock – create a collection to store products which have zero stock | SELECT  P.product\_id, P.product\_name, B.brand\_name, C.category\_name, P.model\_year, P.list\_price  FROM  production.products AS P,  production.brands AS B,  production.categories AS C  WHERE  P.product\_id IN (  SELECT  products.product\_id  FROM  production.products AS products  LEFT JOIN  production.stocks AS S  ON  products.product\_id = S.product\_id  GROUP BY  products.product\_id  HAVING  sum(S.quantity) IS NULL  )  AND  B.brand\_id = P.brand\_id  AND  C.category\_id = P.category\_id  FOR JSON PATH |
| Stock – create a collection to store products which have stock | SELECT  \*  FROM  production.stocks as S  FOR JSON PATH |

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| Item | MongoDB command | Results |
| Count of Unsold Collection | db.UnSold.count() |  |
| Count of ZeroStock Collection | db.ZeroStock.count() |  |
| Count of Stock Collection | db.Stocks.count() |  |
| Query 1 | db.ZeroStock.find({  $and: [  {"category\_name": "Road Bikes"},  {"list\_price": {$lt: 2000}}  ]}).pretty() |  |
| Query 2 | db.UnSold.distinct("category\_name")  db.UnSold.distinct("brand\_name") |  |
| Query 3 | db.UnSold.aggregate([  {$group : { \_id: {brand\_name: "$brand\_name", category\_name: "$category\_name"}}}  ]) |  |
| Query 4 | db.UnSold.aggregate([  {  $lookup: {  from: "Stocks",  localField: "product\_id",  foreignField: "product\_id",  as: "Unsold\_w\_Stock"  }  },  {  $match:  {  "Unsold\_w\_Stock":  {  $ne: [ ]  }  }  }  ]).pretty() | {  "\_id" : ObjectId("62e385ca7f8927eba92ba1fe"),  "product\_id" : "CHB267",  "product\_name" : "Trek Precaliber 12 Girl's - 2018",  "brand\_name" : "Trek",  "category\_name" : "Children Bicycles",  "model\_year" : 2018,  "list\_price" : 199.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1a11"),  "store\_id" : "ST1",  "product\_id" : "CHB267",  "quantity" : 27  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1b4a"),  "store\_id" : "ST2",  "product\_id" : "CHB267",  "quantity" : 21  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1c83"),  "store\_id" : "ST3",  "product\_id" : "CHB267",  "quantity" : 12  }  ]  }  {  "\_id" : ObjectId("62e385ca7f8927eba92ba1ff"),  "product\_id" : "CHB284",  "product\_name" : "Electra Savannah 1 (20-inch) - Girl's - 2018",  "brand\_name" : "Electra",  "category\_name" : "Children Bicycles",  "model\_year" : 2018,  "list\_price" : 319.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1a22"),  "store\_id" : "ST1",  "product\_id" : "CHB284",  "quantity" : 27  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1b5b"),  "store\_id" : "ST2",  "product\_id" : "CHB284",  "quantity" : 6  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1c94"),  "store\_id" : "ST3",  "product\_id" : "CHB284",  "quantity" : 26  }  ]  }  {  "\_id" : ObjectId("62e385ca7f8927eba92ba200"),  "product\_id" : "CHB291",  "product\_name" : "Electra Sweet Ride 1 (20-inch) - Girl's - 2018",  "brand\_name" : "Electra",  "category\_name" : "Children Bicycles",  "model\_year" : 2018,  "list\_price" : 319.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1a29"),  "store\_id" : "ST1",  "product\_id" : "CHB291",  "quantity" : 9  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1b62"),  "store\_id" : "ST2",  "product\_id" : "CHB291",  "quantity" : 22  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1c9b"),  "store\_id" : "ST3",  "product\_id" : "CHB291",  "quantity" : 10  }  ]  }  {  "\_id" : ObjectId("62e385ca7f8927eba92ba201"),  "product\_id" : "ELB195",  "product\_name" : "Electra Townie Go! 8i Ladies' - 2018",  "brand\_name" : "Electra",  "category\_name" : "Electric Bikes",  "model\_year" : 2018,  "list\_price" : 2599.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1ac0"),  "store\_id" : "ST1",  "product\_id" : "ELB195",  "quantity" : 1  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1bf9"),  "store\_id" : "ST2",  "product\_id" : "ELB195",  "quantity" : 19  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1d32"),  "store\_id" : "ST3",  "product\_id" : "ELB195",  "quantity" : 20  }  ]  }  {  "\_id" : ObjectId("62e385ca7f8927eba92ba202"),  "product\_id" : "MOB1",  "product\_name" : "Trek 820 - 2016",  "brand\_name" : "Trek",  "category\_name" : "Mountain Bikes",  "model\_year" : 2016,  "list\_price" : 379.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1ace"),  "store\_id" : "ST1",  "product\_id" : "MOB1",  "quantity" : 27  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1c07"),  "store\_id" : "ST2",  "product\_id" : "MOB1",  "quantity" : 14  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1d40"),  "store\_id" : "ST3",  "product\_id" : "MOB1",  "quantity" : 14  }  ]  }  {  "\_id" : ObjectId("62e385ca7f8927eba92ba203"),  "product\_id" : "MOB121",  "product\_name" : "Surly Krampus Frameset - 2018",  "brand\_name" : "Surly",  "category\_name" : "Mountain Bikes",  "model\_year" : 2018,  "list\_price" : 2499.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1ad8"),  "store\_id" : "ST1",  "product\_id" : "MOB121",  "quantity" : 19  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1c11"),  "store\_id" : "ST2",  "product\_id" : "MOB121",  "quantity" : 3  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1d4a"),  "store\_id" : "ST3",  "product\_id" : "MOB121",  "quantity" : 4  }  ]  }  {  "\_id" : ObjectId("62e385ca7f8927eba92ba204"),  "product\_id" : "MOB125",  "product\_name" : "Trek Kids' Dual Sport - 2018",  "brand\_name" : "Trek",  "category\_name" : "Mountain Bikes",  "model\_year" : 2018,  "list\_price" : 469.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1adc"),  "store\_id" : "ST1",  "product\_id" : "MOB125",  "quantity" : 22  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1c15"),  "store\_id" : "ST2",  "product\_id" : "MOB125",  "quantity" : 10  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1d4e"),  "store\_id" : "ST3",  "product\_id" : "MOB125",  "quantity" : 2  }  ]  }  {  "\_id" : ObjectId("62e385ca7f8927eba92ba205"),  "product\_id" : "RDB154",  "product\_name" : "Trek Domane SLR 6 Disc Women's - 2018",  "brand\_name" : "Trek",  "category\_name" : "Road Bikes",  "model\_year" : 2018,  "list\_price" : 5499.99,  "Unsold\_w\_Stock" : [  {  "\_id" : ObjectId("62e7b434a277885b4c0f1b15"),  "store\_id" : "ST1",  "product\_id" : "RDB154",  "quantity" : 13  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1c4e"),  "store\_id" : "ST2",  "product\_id" : "RDB154",  "quantity" : 9  },  {  "\_id" : ObjectId("62e7b434a277885b4c0f1d87"),  "store\_id" : "ST3",  "product\_id" : "RDB154",  "quantity" : 22  }  ]  } |
| Query 5 | db.UnSold.aggregate([  {  $lookup:  {  from: "Stocks",  localField: "product\_id",  foreignField: "product\_id",  as: "Unsold\_w\_Stock"  }  },  {  $match:  {  "Unsold\_w\_Stock":  {  $ne: []  }  }  },  {  $unwind: "$Unsold\_w\_Stock"  },  {  $group:  {  \_id: "$product\_id" ,  quantity:{$sum: "$Unsold\_w\_Stock.quantity"}  }  },  {  $sort: {"quantity": -1}  }  ]).pretty() | { "\_id" : "CHB267", "quantity" : 60 }  { "\_id" : "CHB284", "quantity" : 59 }  { "\_id" : "MOB1", "quantity" : 55 }  { "\_id" : "RDB154", "quantity" : 44 }  { "\_id" : "CHB291", "quantity" : 41 }  { "\_id" : "ELB195", "quantity" : 40 }  { "\_id" : "MOB125", "quantity" : 34 }  { "\_id" : "MOB121", "quantity" : 26 } |
| Query 6 | db.ZeroStock.aggregate([  {  $lookup: {  from: "UnSold",  localField: "product\_id",  foreignField: "product\_id",  as: "Sold\_wo\_Stock"  }  },  {  $match: {  "Sold\_wo\_Stock": {  $eq: []  }  }  },  {  $group: {  \_id: {  product\_id: "$product\_id",  product\_name: "$product\_name",  brand\_name: "$brand\_name",  category\_name: "$category\_name",  model\_year: "$model\_year",  list\_price: "$list\_price"  }  }  }  ]).pretty() | {  "\_id" : {  "product\_id" : "CMB314",  "product\_name" : "Electra Townie Original 21D EQ Ladies' - 2018",  "brand\_name" : "Electra",  "category\_name" : "Comfort Bicycles",  "model\_year" : 2018,  "list\_price" : 679.99  }  }  {  "\_id" : {  "product\_id" : "CMB315",  "product\_name" : "Electra Townie Original 21D Ladies' - 2018",  "brand\_name" : "Electra",  "category\_name" : "Comfort Bicycles",  "model\_year" : 2018,  "list\_price" : 559.99  }  } |