

WEEK-3 TASKS (MONGODB COURSE)

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QUESTIONS BASED ON UPDATE , AGGREGATE FUNCTIONS

Q1. The total revenue generated from all sales.

```
> db.sales.aggregate([
  {
    $group:{_id:'$item',
    totalPrice:{$sum:'$price'}},
  },
],
]);
< {
  _id: 'Americanos',
  totalPrice: 33
}
{
  _id: 'Mochas',
  totalPrice: 25
}
{
  _id: 'Cappuccino',
  totalPrice: 23
}
{
  _id: 'Lattes',
  totalPrice: 40
}
```

Q2. How many “Americanos” were sold in total?

```
> db.sales.find({item : 'Americanos'}).count()  
< 4
```

Q3. Increase the price of “Lattes” by 5 units.

```
> db.sales.updateMany({item : 'Lattes'},{$inc:{price:5}})  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 2,  
  modifiedCount: 2,  
  upsertedCount: 0  
}
```

Q4. Unset the “size” field for all records where the price is less than 10.

```
> db.sales.updateMany({price:{$lt:10}},{$unset:{size:""}})  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 4,  
  modifiedCount: 4,  
  upsertedCount: 0  
}
```

Q5. Find the average quantity sold for each item where the price is greater than \$10, then sort these averages in descending order, skip the first result, and limit the output to 2 items.

```
> db.sales.aggregate([{$match:{price:{$gt:10}}},
  {$group: {_id:"$item",
    averageQuantity:{$avg:"$quantity"}
  }},
  {$sort:{averageQuantity:-1}},{$skip:1},{$limit:2}
])
< {
  _id: 'Mochas',
  averageQuantity: 11
}
```

Q6. Identify the total quantity sold for each item, but only include those items where the maximum price recorded is at least \$25. Then, sort the results by the total quantity in ascending order and limit the result to 1 item.

```
> db.sales.aggregate([
  {$group : {_id: "$item", totalQuantity: {$sum: "$quantity"}, maxPrice: {$max:"$price"}}},
  {$match: {maxPrice: {$gte:25}}},
  {$sort: {totalQuantity: 1}},
  {$limit: 1}
])
< {
  _id: 'Mochas',
  totalQuantity: 11,
  maxPrice: 25
}
```

QUERIES RELATED TO INDEXING :

//ID1 (VIT5 DB)

```
db.products.find()

{
  _id: 1,
  name: 'xPhone',
  price: 799,  releaseDate: 2011-05-
14T00:00:00.000Z,

  spec: {
    ram: 4,

    screen: 6.5,
    cpu: 2.66
  },
  color: [
    'white',
    'black'
  ],
```

```
    storage: [
      64,
      128,
      256
    ]
  }
}
```

//ID2

```
{
  _id: 2,
  name: 'xTablet',
  price: 899,

  releaseDate: 2011-09-01T00:00:00.000Z,
  spec: {
    ram: 16,

    screen: 9.5,
    cpu: 3.66
  },
  color: [
    'white',
    'black',
    'purple'
  ],
  storage: [
    128,
    256,
    512
  ]
}
```

//ID3

```
  _id: 3,
  name: 'SmartTablet',
  price: 899,

  releaseDate: 2015-01-14T00:00:00.000Z,
  spec: {
    ram: 12,
```

```
    screen: 9.7,  
    cpu: 3.66  
  },
```

```
    color: [  
      'blue'  
    ],  
    storage: [  
      16,  
      64,  
      128  
    ]  
  }  
}
```

//ID4

```
{  
  _id: 4,  
  name: 'SmartPad',  
  price: 699,  
  releaseDate: 2020-05-14T00:00:00.000Z,  
  spec: {  
    ram: 8,  
    screen: 9.7,  
    cpu: 1.66  
  },  
  color: [  
    'white',  
    'orange',  
    'gold',  
    'gray'  
  ],  
  storage: [  
    128,  
    256,  
    1024  
  ]  
}
```

//ID5

```
{
  _id: 5,  name:
  'SmartPhone',

  price: 599,  releaseDate: 2022-09-
14T00:00:00.000Z,

  spec: {
    ram: 4,
screen: 9.7,

    cpu: 1.66
  },
  color: [
    'white',
    'orange',
    'gold',
    'gray'
  ],
  storage: [
    128,
    256
  ]
}
```

//ID6 AND ID7

```
{
  _id: 6,
  name: 'xWidget',
  spec: {
    ram: 64,
    screen: 9.7,
    cpu: 3.66
  },
  color: [
    'black'
  ]
}
```

```
{
  _id: 7, name:
  'xReader',

  price: null,

  spec: {
    ram: 64,
    screen: 6.7,
    cpu: 3.66
  },

  color: [
    'black',
    'white'
  ],
  storage: [
    128
  ]
}
```


TASKS ON VIT5 DB

```
db.products.createIndex({price : 1})
price_1

db.products.getIndexes()

[
  { v: 2, key: { _id: 1 }, name: '_id_ ' },
  { v: 2, key: { price: 1 }, name: 'price_1' }
]
```

```
db.products.dropIndex({price:1})

{ nIndexesWas: 2, ok: 1 }
db.products.getIndexes()

[ { v: 2, key: { _id: 1 }, name: '_id_ ' } ]
```

```
db.products.dropIndex("name_-1_price_1")
{ nIndexesWas: 2, ok: 1 }
db.products.getIndexes()

[ { v: 2, key: { _id: 1 }, name: '_id_ ' } ]
db.products.createIndex({"spec.ram":-1,"spec.cpu":1,"spec.screen":1})

spec.ram_-1_spec.cpu_1_spec.screen_1
db.products.find({"spec.ram":4}).explain()

{
```

```
db.products.getIndexes({"spec.ram":4})

[
  { v: 2, key: { _id: 1 }, name: '_id_' },
  {
    v: 2,    key: { 'spec.ram': -1, 'spec.cpu': 1,
'spec.screen': 1 },

    name: 'spec.ram_-1_spec.cpu_1_spec.screen_1'
  }
]
```

```
db.products.find({"spec.ram":4})

{
  _id: 5,
  name: 'SmartPhone',
  price: 599,  releaseDate: 2022-09-
14T00:00:00.000Z,

  spec: {
ram: 4,

    screen: 9.7,
    cpu: 1.66
  },
  color: [
```

VIT6 DB

```
> db.blog.insertMany( [
  {
    _id: 1,
    content: "This morning I had a cup of coffee.",
    about: {author: "Bharathi", writer:"Bharathi Varsha"},
    keywords: [ "coffee" ]
  },
  {
    _id: 2,
    content: "Who likes chocolate ice cream for dessert?",
    about: {author : "Sri", writer : "Sri Devi"},
    keywords: [ "poll" ]
  },
  {
    _id: 3,
    content: "My favorite flavors are strawberry and coffee",
    about: {author : "Sri",writer : "Sri Thanvi"},
    keywords: [ "food", "dessert" ]
  }
])
```

```
insertedIds: {
  '0': 1,
  '1': 2,
  '2': 3
}
}
```

```
  _id: 1,  content: 'This morning I had a cup  
of coffee.',
```

```
  about: {  
    author: 'Bharathi',  
writer: 'Bharathi Varsha'  
  },  
  keywords: [  
    'coffee'  
  ]  
}
```

```
  _id: 2,  content: 'Who likes chocolate ice cream for  
dessert?',
```

```
  about: {  
author: 'Sri',  
    writer: 'Sri Devi'  
  },  
  keywords: [  
    'poll'  
  ]  
}
```

```
  _id: 3,  
  content: 'My favorite flavors are strawberry and coffee',  
  about: {
```

```
    author: 'Sri',  
    writer: 'Sri Thanvi'  
  },  
  keywords: [  
    'food',  
    'dessert'
```

TASKS ON VIT6 DB

```
db.blog.createIndex({content:'text'})

content_text
db.blog.getIndexes()

[
  { v: 2, key: { _id: 1 }, name: '_id_' },
  {
    v: 2,
    key: { _fts: 'text', _ftsx: 1 },
    name: 'content_text',
    weights: { content: 1 },
    default_language: 'english',
    language_override: 'language',
    textIndexVersion: 3
  }
]
```

```
] db.blog.find({content: 'My favorite flavors are strawberry and
coffee'})

[
  {
    _id: 3, content: 'My favorite flavors are strawberry
and coffee',
    about: {
author: 'Sri',
    writer: 'Sri Thanvi'
  },
keywords: [
  'food',
  'dessert'
]
}
```

```
db.blog.find({$text : {$search : 'cream'}})

[
  {
    _id: 2, content: 'Who likes chocolate ice cream for
dessert?',
    about: {
author: 'Sri',
writer: 'Sri Devi'
  },
keywords: [
  'poll'
]
}
```

```

db.blog.dropIndex("content_text")

{ nIndexesWas: 2, ok: 1 }
db.blog.createIndex({"$**":"text"})

$**_text
db.blog.getIndexes()

[
  { v: 2, key: { _id: 1 }, name: '_id_' },
  {
    v: 2, key: { _fts: 'text',
    _ftsx: 1 },
    name: '$**_text',
    weights: { '$**': 1 },
    default_language: 'english',
    language_override: 'language',
    textIndexVersion: 3
  }
]

```

```

db.blog.find({$text:{$search:'\"ice cream for\"'}})

{
  _id: 2, content: 'Who likes chocolate ice cream for
dessert?',
  about: {
    author: 'Sri',
    writer: 'Sri Devi'
  },
  keywords: [
    'poll' ]}

```