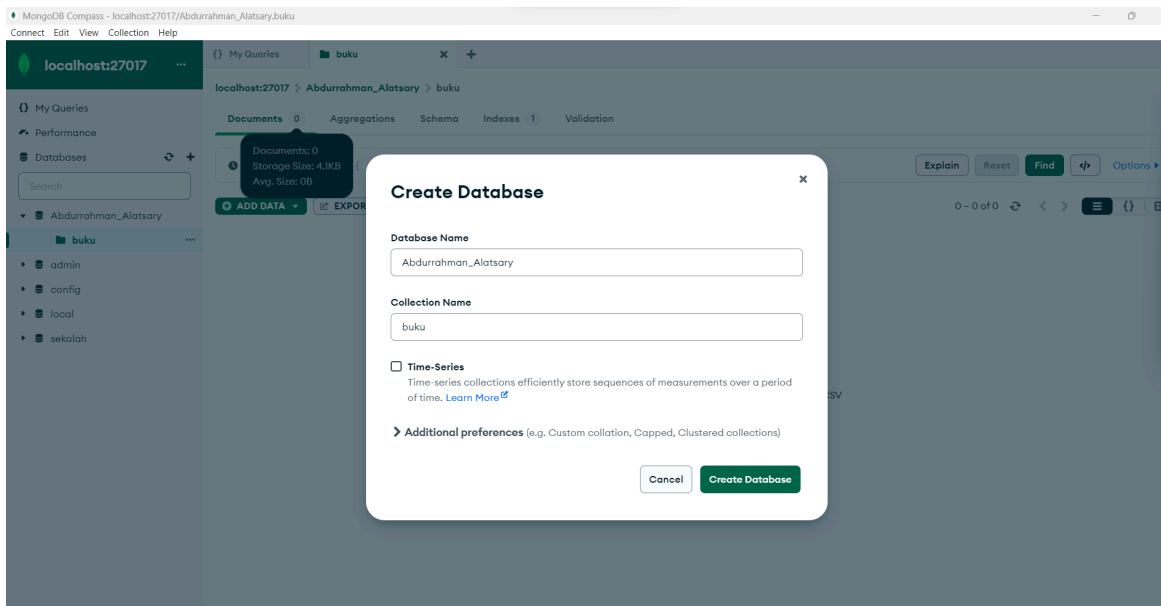


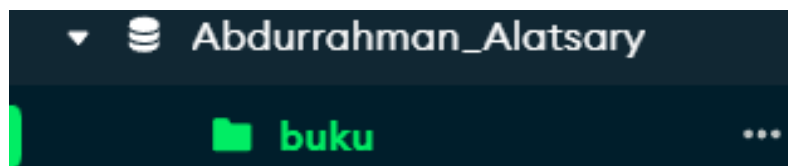
Abdurrahman Al-atsary
121450128
Tugas individu Praktikum TBD RA

Hasil Code dan Output Tugas Induvidu

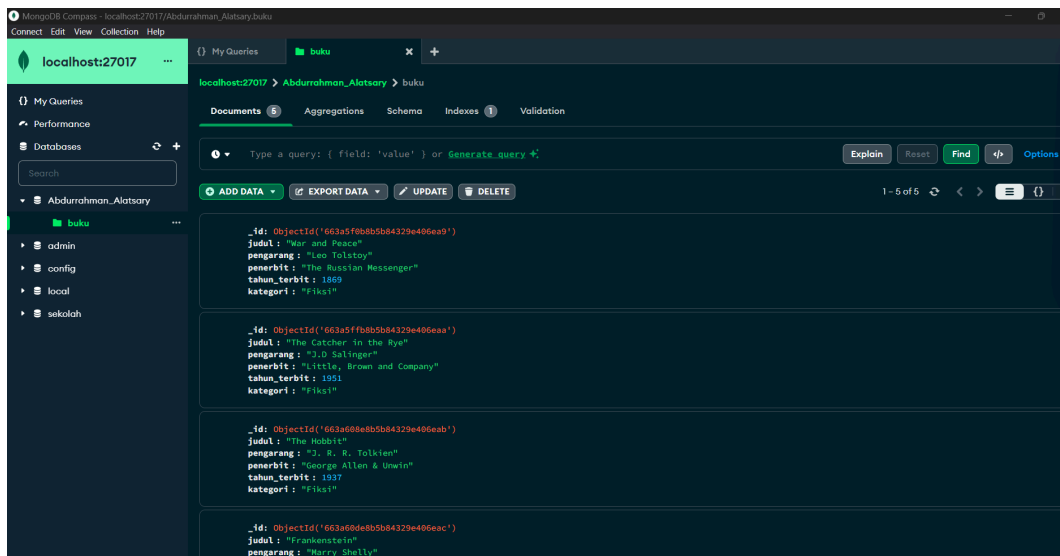
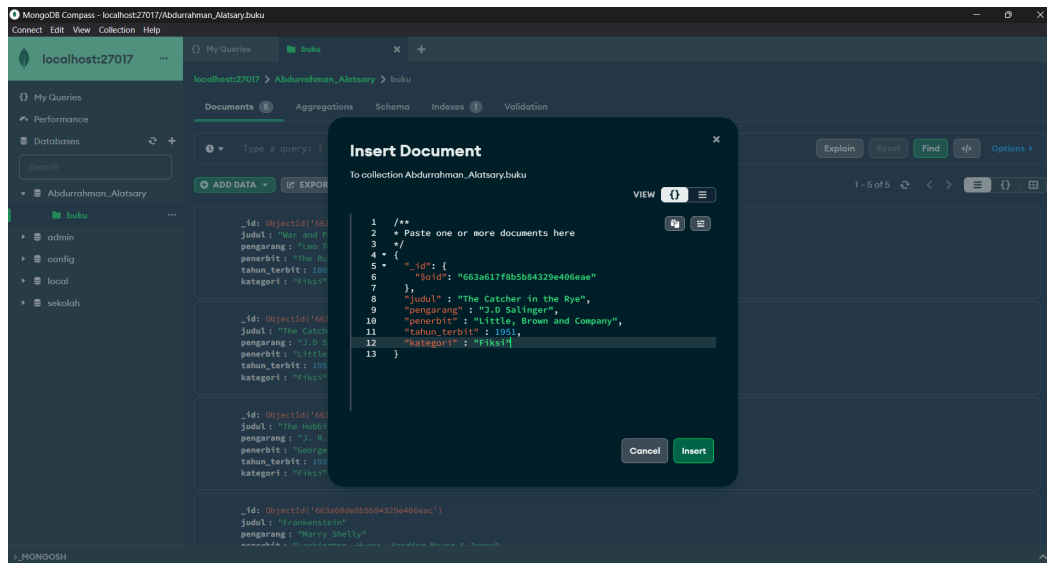
Langkah 1 : Membuat Database di MongoDB dengan format “Nama-lengkap”



Langkah 2 : Membuat Collections dengan nama buku



Langkah 3 : Membuat beberapa data Sesuai ketentuan



Langkah 4 : Membuat Validasi Data

```
Validation Action ⓘ Error Validation Level ⓘ Strict
1 {
2   $jsonSchema: {
3     required: [
4       'judul',
5       'pengarang',
6       'penerbit',
7       'tahun_terbit',
8       'kategori'
9     ],
10    properties: {
11      judul: {
12        bsonType: 'string',
13        description: 'Harus String'
14      },
15      pengarang: {
16        bsonType: 'string',
17        description: 'Harus String'
18      },
19      penerbit: {
20        bsonType: 'string',
21        description: 'harus string'
22      },
23      tahun_terbit: {
24        pattern: '^[0-9]{4}$',
25        description: 'Harus integer'
26      },
27      kategori: {
28        bsonType: 'string',
29        description: 'Harus String'
30      }
31    }
32  }
33 }
```

Langkah 5 : Menampilkan hasil buku dalam beberapa format tabel didalam MongoDB

Json Mode

```
Type a query: ( field: 'value' ) or Generate query + Explain Reset Find </> Options
ADD DATA EXPORT DATA UPDATE DELETE 1 - 5 of 5 < > ⌵ ⌶
{
  "_id": {},
  "judul": "War and Peace",
  "pengarang": "Leo Tolstoy",
  "penerbit": "The Russian Messenger",
  "tahun_terbit": 1869,
  "kategori": "Fiksi"
}
{
  "_id": {},
  "judul": "The Catcher in the Rye",
  "pengarang": "J.D Salinger",
  "penerbit": "Little, Brown and Company",
  "tahun_terbit": 1951,
  "kategori": "Fiksi"
}
{
  "_id": {},
  "judul": "The Hobbit",
  "pengarang": "J. R. R. Tolkien",
  "penerbit": "George Allen & Unwin",
  "tahun_terbit": 1937,
  "kategori": "Fiksi"
}
{
  "_id": {},
  "judul": "Frankenstein",
  "pengarang": "Mary Shelley",
  "penerbit": "Lloyd's London",
  "tahun_terbit": 1818,
  "kategori": "Fiksi"
}
```

Tabular Mode

Type a query: { field: 'value' } or [Generate query](#)

Explain

Reset

Find

Options

ADD DATA

EXPORT DATA

UPDATE

DELETE

1 - 5 of 5

☆ buku

| | _id ObjectId | judul String | pengarang String | penerbit String | tahun_terbit Int32 | kategori String | |
|---|--------------------------------|------------------------------|--------------------|------------------------------|--------------------|-----------------|-------------------------------------|
| 1 | ObjectId('663a5f8b8b5b843...') | "War and Peace" | "Leo Tolstoy" | "The Russian Messenger" | 1869 | "Fiksi" | <div></div> <div></div> <div></div> |
| 2 | ObjectId('663a5ffb8b5b843...') | "The Catcher in the Rye" | "J.D Salinger" | "Little, Brown and Compan... | 1951 | "Fiksi" | <div></div> <div></div> <div></div> |
| 3 | ObjectId('663a608e8b5b843...') | "The Hobbit" | "J. R. R. Tolkien" | "George Allen & Unwin" | 1937 | "Fiksi" | <div></div> <div></div> <div></div> |
| 4 | ObjectId('663a60de8b5b843...') | "Frankenstein" | "Marry Shelly" | "Lackington, Huges, Hardi... | 1818 | "Fiksi" | <div></div> <div></div> <div></div> |
| 5 | ObjectId('663a61368b5b843...') | "Alice's Adventure in Won... | "Lewis Carroll" | "Macmillan" | 1865 | "Fiksi" | <div></div> <div></div> <div></div> |

Dengan Menggunakan Python dan pymongo

Connect to database mongodb

```
connect-mongodb.py x create.py 1
Modul-4 (MongoDB) > tugas-individu > connect-mongodb.py > ...
1 from pymongo import MongoClient
2
3 # menghubungkan kedalam server mongodb
4 try:
5     client = MongoClient('mongodb://localhost:27017/') # Ganti mongodb string connection
6     print("Connected successfully to MongoDB server!")
7 except Exception as e:
8     print(f"Error connecting to MongoDB: {e}")
9
10 # Akses Spesifik Data
11 db = client['Abdurrahman_Alatsary']
12
13 # Akses Spesifik Collections
14 collection = db['perpustakaan']
15
16 # Menutup Koneksi dengan mongodb
17 client.close()

TERMINAL PROBLEMS 1 OUTPUT DEBUG CONSOLE PORTS GITLENS SQL CONSOLE

bash: ng: command not found

ACER@Khirtz MINGW64 D:/Microsoft VS Code (main)
$ python -u "d:\My Wish\Collage Data\Semester 6\Teknologi Basis Data\Praktikum-TBD\Modul-4 (MongoDB)\tugas-individu\connect-mongodb.py"
• Connected successfully to MongoDB server!
```

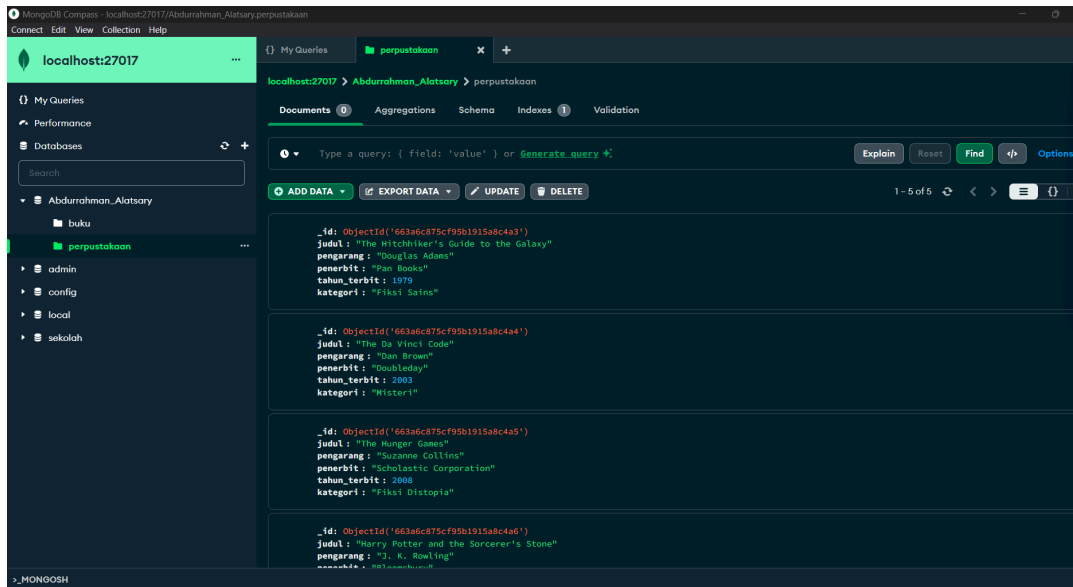
Insert data (5 data) to MongoDB via Python

```
create.py U x
Modul-4 (MongoDB) > tugas-individu > create.py > [0] data
16 # List data yang akan dimasukan
17 data = [
18     {
19         "judul" : "The Hitchhiker's Guide to the Galaxy",
20         "pengarang" : "Douglas Adams",
21         "penerbit" : "Pan Books",
22         "tahun_terbit" : 1979,
23         "kategori" : "Fiksi Sains"
24     },
25     {
26         "judul" : "The Da Vinci Code",
27         "pengarang" : "Dan Brown",
28         "penerbit" : "Doubleday",
29         "tahun_terbit" : 2003,
30         "kategori" : "Misteri"
31     },
32     {
33         "judul" : "The Hunger Games",
34         "pengarang" : "Suzanne Collins",
35         "penerbit" : "Scholastic",
36         "tahun_terbit" : 2008,
37         "kategori" : "Fiksi Remaja"
38     },
39     {
40         "judul" : "1984",
41         "pengarang" : "George Orwell",
42         "penerbit" : "Secker and Warburg",
43         "tahun_terbit" : 1949,
44         "kategori" : "Fiksi Dystopian"
45     },
46     {
47         "judul" : "The Great Gatsby",
48         "pengarang" : "F. Scott Fitzgerald",
49         "penerbit" : "Scribner",
50         "tahun_terbit" : 1925,
51         "kategori" : "Fiksi Klasik"
52     }
53 ]

TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE PORTS GITLENS SQL CONSOLE

ACER@Khirtz MINGW64 D:/Microsoft VS Code (main)
$ python -u "d:\My Wish\Collage Data\Semester 6\Teknologi Basis Data\Praktikum-TBD\Modul-4 (MongoDB)\tugas-individu\create.py"
Connected successfully to MongoDB server!
```

Output dalam MongoDB



localhost:27017 > Abdurrahman_Alatsary > perpustakaan

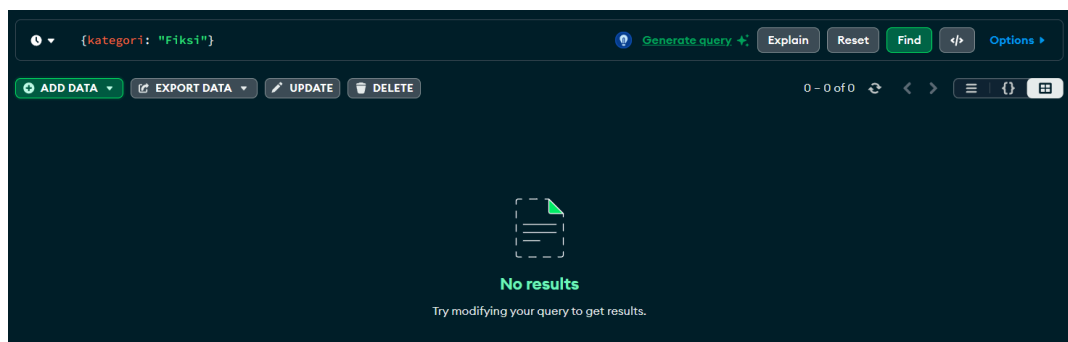
Documents 0 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#)

ADD DATA EXPORT DATA UPDATE DELETE 1 - 5 of 5

| | _id ObjectId | judul String | pengarang String | penerbit String | tahun_terbit Int32 | ka |
|---|--------------------------------------|---|-------------------|--------------------------|--------------------|------------------|
| 1 | ObjectId('663a6c875cf95b1915a8c4a3') | "The Hitchhiker's Guide to the Galaxy" | "Douglas Adams" | "Pan Books" | 1979 | "Fiksi Sains" |
| 2 | ObjectId('663a6c875cf95b1915a8c4a4') | "The Da Vinci Code" | "Dan Brown" | "Doubleday" | 2003 | "Histori" |
| 3 | ObjectId('663a6c875cf95b1915a8c4a5') | "The Hunger Games" | "Suzanne Collins" | "Scholastic Corporation" | 2008 | "Fiksi Distopia" |
| 4 | ObjectId('663a6c875cf95b1915a8c4a6') | "Harry Potter and the Sorcerer's Stone" | "J. K. Rowling" | "Bloomsbury" | 1997 | "Fiksi" |
| 5 | ObjectId('663a6c875cf95b1915a8c4a7') | "A Brief History of Time" | "Stephen Hawking" | "Bantam Books" | 1988 | "Fiksi Sains" |

Menampilkan kategori Fiksi



Memasukan 3 data tambahan dengan pengarang nama dan tahun 2024

```
create.py U  add_books.py U ×
Modul-4 (MongoDB) > tugas-individu > add_books.py > [data]
17 data = [
18     {
19         "judul" : "Laskar Pelangi",
20         "pengarang" : "Abdurrahman A",
21         "penerbit" : "ITERA",
22         "tahun_terbit" : 2024,
23         "kategori" : "Fiksi"
24     },
25     {
26         "judul" : "Machine Learning for Beginner",
27         "pengarang" : "Abdurrahman A",
28         "penerbit" : "Databits Corp",
29         "tahun_terbit" : 2024,
30         "kategori" : "Pemrograman"
31     },
32     {
33         "judul" : "Soft Skill to Show",
34         "pengarang" : "Abdurrahman A",
```

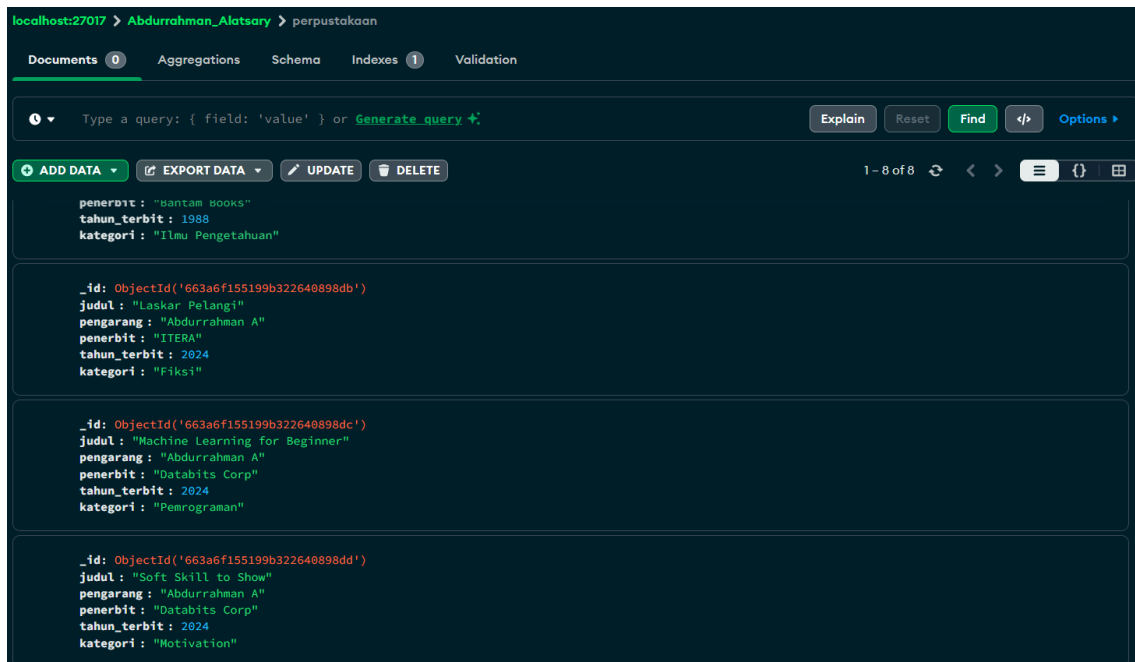
TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE PORTS GITLENS SQL CONSOLE

```
• $ cd tugas-individu/

ACER@Khirtz MINGW64 /d/My Wish/Collage Data/Semester 6/Teknologi Basis Data/Praktikum-TBD/Modul-4 (MongoDB)/tugas-individu (main)
• $ ls
connect-mongodb.py  create.py

ACER@Khirtz MINGW64 /d/My Wish/Collage Data/Semester 6/Teknologi Basis Data/Praktikum-TBD/Modul-4 (MongoDB)/tugas-individu (main)
• $ code add_books.py

ACER@Khirtz MINGW64 /d/My Wish/Collage Data/Semester 6/Teknologi Basis Data/Praktikum-TBD/Modul-4 (MongoDB)/tugas-individu (main)
• $ python -u "d:\My Wish\Collage Data\Semester 6\Teknologi Basis Data\Praktikum-TBD\Modul-4 (MongoDB)\tugas-individu\add_books.py"
Connected successfully to MongoDB server!
Data inserted successfully.
```



Update Kategori dari Buku Stephen Hawking jadi “Popular Sains”

```
create.py U  add_books.py U  update_one.py •
1  from pymongo import MongoClient
2
3  # Menghubungkan kedalam server mongodb
4  try:
5      client = MongoClient('mongodb://localhost:27017/') # Ganti mongodb string connection
6      print("Connected successfully to MongoDB server!")
7  except Exception as e:
8      print(f"Error connecting to MongoDB: {e}")
9
10 # Akses Spesifik Data
11 db = client['Abdurrahman_Alatsary']
12
13 # Akses Spesifik Collections
14 collection = db['perpustakaan']
15
16
17 # Criteria to find the document to update
18 filter_criteria = {"pengarang": "Stephen Hawking"}
19
20 # New values to set
21 new_values = {"$set": {"kategori": "Popular Science"}}
22
23 # Perform the update
24 collection.update_one(filter_criteria, new_values)
25
26 print("Data updated successfully.")
```

TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE PORTS GITLENS SQL CONSOLE

```
ACER@Khirtz MINGW64 /d/My Wish/Collage Data/Semester 6/Teknologi Basis Data/Praktikum-TBD/Modul-4 (MongoDB)/tugas-individu (main)
• $ python -u "d:/My Wish/Collage Data/Semester 6/Teknologi Basis Data/Praktikum-TBD/tempCodeRunnerFile.py"
Connected successfully to MongoDB server!
Data updated successfully.
```

```
_id: ObjectId('663a6c875cf95b1915a8c4a7')
judul : "A Brief History of Time"
pengarang : "Stephen Hawking"
penerbit : "Bantam Books"
tahun_terbit : 1988
kategori : "Popular Science"
```

Menghapus Buku yang dikarang "Lewis Carroll"

```
create.py U  add_books.py U  update_one.py U  delete_one.py X
Modul-4 (MongoDB) > tugas-individu > delete_one.py > ...
1  from pymongo import MongoClient
2
3  # Menghubungkan kedalam server mongodb
4  try:
5      client = MongoClient('mongodb://localhost:27017/') # Ganti mongodb string connection
6      print("Connected successfully to MongoDB server!")
7  except Exception as e:
8      print(f"Error connecting to MongoDB: {e}")
9
10 # Akses Spesifik Data
11 db = client['Abdurrahman_Alatsary']
12
13 # Akses Spesifik Collections
14 collection = db['buku']
15
16 # Mencari kriteria yang mau dihapus
17 filter_criteria = {"pengarang": "Lewis Carroll"}
18
19 # Eksekusi kriteria yang mau dihapus
20 collection.delete_one(filter_criteria)
21
22 print("Berhasil menghapus 1 baris data")
23
24
```

TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE PORTS GITLENS SQL CONSOLE

```
• $ code delete_one.py

ACER@Khirtz MINGW64 /d/My Wish/Collage Data/Semester 6/Teknologi Basis Data/Praktikum-TBD/Modul-4 (MongoDB)/tugas-individu (main)
$ python -u "d:\My Wish\Collage Data\Semester 6\Teknologi Basis Data\Praktikum-TBD\Modul-4 (MongoDB)\tugas-individu\delete_one.py"
• Connected successfully to MongoDB server!
Berhasil menghapus 1 baris data
```

Data sudah tidak ada di dalam mongodb

localhost:27017 > Abdurrahman_Alatsary > buku

Documents 5 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#)

EXPLAIN RESET FIND </> OPTIONS

ADD DATA EXPORT DATA UPDATE DELETE 1 - 4 of 4

| | _id ObjectId | judul String | pengarang String | penerbit String | tahun_terbit Int32 | ka |
|---|--------------------------------|--------------------------|--------------------|-------------------------------|--------------------|----------------------------|
| 1 | ObjectId('663a5f0b8b5b843...') | "War and Peace" | "Leo Tolstoy" | "The Russian Messenger" | 1869 | "F" / [icon] [icon] [icon] |
| 2 | ObjectId('663a5ffb8b5b843...') | "The Catcher in the Rye" | "J.D Salinger" | "Little, Brown and Compan..." | 1951 | "F" / [icon] [icon] [icon] |
| 3 | ObjectId('663a608e8b5b843...') | "The Hobbit" | "J. R. R. Tolkien" | "George Allen & Unwin" | 1937 | "F" / [icon] [icon] [icon] |
| 4 | ObjectId('663a60de8b5b843...') | "Frankenstein" | "Marry Shelly" | "Lackington, Huges, Hardi..." | 1818 | "F" / [icon] [icon] [icon] |