

به نام خدا

گزارش تمرین پنجم درس پایگاه داده پیشرفته



دانشگاه لرستان

نام و نام خانوادگی :

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آذر 1403

فعالیت 1: پایگاه داده PostgreSQL که در تمرین سوم ایجاد شد را به FastAPI متصل کنید به طوری که همه عملگرها از طریق API قابل اجرا باشد.

برای جدول student :

درج :

POST

http://127.0.0.1:8000/student/create/

Send

200 OK

32 ms

66 B

Just Now

Params1

Body

Auth

Headers4

Scripts

Docs

Preview

Headers4

Cookies

Tests0/0

→ Mock

Console

JSON

Preview

1 {
2 "STID": "40311415016",
3 "FName": "Mobin",
4 "LName": "Ramezani",
5 "Father": "Shahram",
6 "Birth": "1381/04/11",
7 "SerialID": "12b145844",
8 "BornCity": "Khorramabad",
9 "Address": "Lorestan-----123 St.",
10 "PostalCode": "6814617137",
11 "CPhone": "09121234567",
12 "HPhone": "02112345678",
13 "Department": "Engineering",
14 "Major": "Computer Engineering",
15 "Married": false,
16 "ID": "1234567890"
17 }
18

1 {
2 "detail": "دانشجوی جدید با موفقیت ثبت شد"
3 }

خواندن :

GET http://127.0.0.1:8000/student/select/ Send 200 OK 29 ms 362 B

Params 1 Body Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/student/select/?

QUERY PARAMETERS
Import from URL Bulk Edit
+ Add Delete all Description

name	value
------	-------

PATH PARAMETERS
Path parameters are url path segments that start with a colon ':' e.g. 'id'

Preview Headers 4 Cookies Tests 0/0 → Mock

```
1 {  
2   "student": [  
3     {  
4       "Birth": "1381/04/11",  
5       "STID": "40311415016",  
6       "Father": "Shahram",  
7       "BornCity": "Khorramabad",  
8       "PostalCode": "6814617137",  
9       "HPhone": "02112345678",  
10      "Major": "Computer Engineering",  
11      "ID": "1234567890",  
12      "LName": "Ramezani",  
13      "FName": "Mobin",  
14      "SerialID": "12b145844",  
15      "Address": "Lorestan-----123 St.",  
16      "CPhone": "09121234567",  
17      "Department": "Engineering",  
18      "Married": false  
19    }  
20  ]  
21 }
```

آپدیت :

PUT http://127.0.0.1:8000/student/update/40311415016 Send 200 OK 77 ms 446 B Just No

Params 1 Body Auth Headers 4 Scripts Docs

JSON

```
1 {  
2   "Married": true,  
3   "ID": "4061308408"  
4 }  
5
```

Preview Headers 4 Cookies Tests 0/0 → Mock Cons

```
1 {  
2   "message": "اطلاعات دانشجو با موفقیت به روزرسانی شد",  
3   "student": {  
4     "Birth": "1381/04/11",  
5     "STID": "40311415016",  
6     "Father": "Shahram",  
7     "BornCity": "Khorramabad",  
8     "PostalCode": "6814617137",  
9     "HPhone": "02112345678",  
10    "Major": "Computer Engineering",  
11    "ID": "4061308408",  
12    "LName": "Ramezani",  
13    "FName": "Mobin",  
14    "SerialID": "12b145844",  
15    "Address": "Lorestan-----123 St.",  
16    "CPhone": "09121234567",  
17    "Department": "Engineering",  
18    "Married": true  
19  }  
20 }
```

حذف :

DELETE http://127.0.0.1:8000/student/delete/40311415016 **Send** **200 OK** 35 ms 56 B

Params (1) Body (●) Auth Headers (4) Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/student/delete/40311415016?

QUERY PARAMETERS
Import from URL Bulk Edit

+ Add Delete all Description

name	value
------	-------

PATH PARAMETERS

Path parameters are url path segments that start with a colon ':' e.g. ':id'

Preview Headers (4) Cookies Tests 0/0

Preview

```
1 {  
2   "message": "دانشجو با موفقیت حذف شد"  
3 }
```

برای جدول lecturer :

درج :

POST http://127.0.0.1:8000/lecturer/create/ **Send** **200 OK** 66 ms 62 B

Params (1) Body (●) Auth Headers (4) Scripts Docs

JSON

```
1 {  
2   "LID": "123456",  
3   "FName": "Reza",  
4   "LName": "Hosseini",  
5   "ID": "4785136548",  
6   "Department": "Engineering",  
7   "Major": "Computer Engineering",  
8   "Birth": "1372/03/10",  
9   "BornCity": "Ilam",  
10  "Address": "Ilam-----123 St.",  
11  "PostalCode": "7257567890",  
12  "CPhone": "09121234567",  
13  "HPhone": "02112345678"  
14 }  
15
```

Preview

```
1 {  
2   "detail": "استاد جدید با موفقیت ثبت شد"  
3 }
```

خواندن :

GET ▼ http://127.0.0.1:8000/lecturer/select/ Send 200 OK 34 ms 288 B

Params 1 Body ● Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/lecturer/select/?

QUERY PARAMETERS Import from URL 👁 Bulk Edit

+ Add 🗑 Delete all 👁 Description

name	value		👁	🗑
------	-------	--	---	---

PATH PARAMETERS

📘 Path parameters are url path segments that start with a colon ':'. e.g. ':id'

Preview ▼ Headers 4 Cookies Tests 0/0 →

```
1 {  
2   "lecturer": [  
3     {  
4       "FName": "Reza",  
5       "ID": "4785136548",  
6       "LID": "123456",  
7       "Major": "Computer Engineering",  
8       "BornCity": "Ilam",  
9       "Address": "Ilam-----123 St.",  
10      "CPhone": "09121234567",  
11      "Department": "Engineering",  
12      "LName": "Hosseini",  
13      "Birth": "1372/03/10",  
14      "PostalCode": "7257567890",  
15      "HPhone": "02112345678"  
16    }  
17  ]  
18 }
```

آپدیت :

PUT ▼ http://127.0.0.1:8000/lecturer/update/123456 Send 200 OK 45 ms 371 B Just M

Params 1 Body ● Auth Headers 4 Scripts Docs

JSON ▼

```
1 {  
2   "PostalCode": "6814617137",  
3   "CPhone": "09382938134"  
4 }  
5
```

Preview ▼ Headers 4 Cookies Tests 0/0 → Mock Co

```
1 {  
2   "message": "اطلاعات استاد با موفقیت به روزرسانی شد",  
3   "lecturer": {  
4     "FName": "Reza",  
5     "ID": "4785136548",  
6     "LID": "123456",  
7     "Major": "Computer Engineering",  
8     "BornCity": "Ilam",  
9     "Address": "Ilam-----123 St.",  
10    "CPhone": "09382938134",  
11    "Department": "Engineering",  
12    "LName": "Hosseini",  
13    "Birth": "1372/03/10",  
14    "PostalCode": "6814617137",  
15    "HPhone": "02112345678"  
16  }  
17 }
```

حذف :

DELETE ▼ http://127.0.0.1:8000/lecturer/delete/123456 Send ▼ 200 OK 60 ms 54 B

Params 1 Body ● Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/lecturer/delete/123456

QUERY PARAMETERS Import from URL Bulk Edit

+ Add Delete all Description

name	value			
------	-------	--	--	--

PATH PARAMETERS

Path parameters are url path segments that start with a colon ':' e.g. ':id'

Preview ▼

```
1 {  
2   "message": "استاد با موفقیت حذف شد"  
3 }
```

برای جدول **course** :

درج :

POST ▼ http://127.0.0.1:8000/course/create/ Send ▼ 200 OK 34 ms 58 B

Params 1 Body ● Auth Headers 4 Scripts Docs

JSON ▼

```
1 {  
2   "CID": "12345",  
3   "CName": "Database",  
4   "Department": "Engineering",  
5   "Credit": 3  
6 }  
7
```

Preview ▼

```
1 {  
2   "detail": "درس جدید با موفقیت ثبت شد"  
3 }
```

خواندن :

GET ▼ http://127.0.0.1:8000/course/select/ Send ▼ 200 OK 34 ms 85 B

Params 1 Body ● Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/course/select/? 📄

QUERY PARAMETERS Import from URL 👁 Bulk Edit

+ Add 🗑 Delete all 👁 Description

name	value	▼	☑	🗑
------	-------	---	---	---

PATH PARAMETERS

❗ Path parameters are url path segments that start with a colon ':' e.g. ':id' ×

Preview ▼

```
1 {  
2   "course": [  
3     {  
4       "Department": "Engineering",  
5       "Credit": 3,  
6       "CID": "12345",  
7       "CName": "Database"  
8     }  
9   ]  
10 }
```

آپدیت :

PUT ▼ http://127.0.0.1:8000/course/update/12345 Send ▼ 200 OK 38 ms 164 B

Params 1 Body ● Auth Headers 4 Scripts Docs

JSON ▼

```
1 {  
2   "Credit": 4  
3 }  
4
```

Preview ▼

```
1 {  
2   "message": "اطلاعات درس با موفقیت به روزرسانی شد",  
3   "course": {  
4     "Department": "Engineering",  
5     "Credit": 4,  
6     "CID": "12345",  
7     "CName": "Database"  
8   }  
9 }
```

حذف :

DELETE http://127.0.0.1:8000/course/delete/12345 Send 200 OK 26 ms 50 B

Params 1 Body Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/course/delete/12345?

QUERY PARAMETERS Import from URL Bulk Edit

+ Add Delete all Description

name	value
------	-------

PATH PARAMETERS

Path parameters are url path segments that start with a colon ':' e.g. 'id'

Preview Headers 4 Cookies Tests 0/0

Preview

```
1 {  
2   "message": "درس با موفقیت حذف شد"  
3 }
```

برای جدول CourseRegister :

درج :

POST http://127.0.0.1:8000/course_register/create/ Send 200 OK 33 ms 79 B

Params 1 Body Auth Headers 4 Scripts Docs

JSON

```
1 {  
2   "Credit": 3,  
3   "Department": "Engineering",  
4   "CName": "Database",  
5   "FName": "Mobin",  
6   "LName": "Ramezani",  
7   "STID": "40311415016",  
8   "CID": "12345"  
9 }  
10
```

Preview Headers 4 Cookies Tests 0/0 → Mock

Preview

```
1 {  
2   "detail": "ثبت نام درس جدید با موفقیت انجام شد"  
3 }
```


خواندن :

GET http://127.0.0.1:8000/course_register/select/ Send 200 OK 29 ms 150 B

Params (1) Body (●) Auth Headers (4) Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/course_register/select/

QUERY PARAMETERS Import from URL Bulk Edit

+ Add Delete all Description

name	value
------	-------

PATH PARAMETERS

Path parameters are url path segments that start with a colon ':' e.g. ':id'

Preview Headers (4) Cookies Tests 0/0

Preview

```
1 {
2   "course_register": [
3     {
4       "LName": "Ramezani",
5       "CID": "12345",
6       "FName": "Mobin",
7       "Department": "Engineering",
8       "CName": "Database",
9       "Credit": 3,
10      "STID": "40311415016"
11    }
12  ]
13 }
```

آپدیت :

PUT http://127.0.0.1:8000/course_register/update/40311415016/12345 Send 200 OK 64 ms 234 B Just N

Params (1) Body (●) Auth Headers (4) Scripts Docs

JSON

```
1 {
2   "Credit": 4,
3   "CName": "AI"
4 }
5
```

Preview Headers (4) Cookies Tests 0/0 → Mock Conso

Preview

```
1 {
2   "message": "اطلاعات ثبت نام با موفقیت به روزرسانی شد",
3   "course_register": {
4     "LName": "Ramezani",
5     "CID": "12345",
6     "FName": "Mobin",
7     "Department": "Engineering",
8     "CName": "AI",
9     "Credit": 4,
10    "STID": "40311415016"
11  }
12 }
```

حذف :

DELETE http://127.0.0.1:8000/course_register/delete/40311415016/12345 Send 200 OK 24 ms 60 B

Params 1 Body Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/course_register/delete/40311415016/12345?

QUERY PARAMETERS Import from URL Bulk Edit

+ Add Delete all Description

name	value
------	-------

PATH PARAMETERS

Path parameters are url path segments that start with a colon ':' e.g. 'id'

Preview Headers 4 Cookies Tests 0/0

Preview

```
1 {
2   "message": "ثبت نام با موفقیت حذف شد"
3 }
```

برای جدول PresentedCourses :

درج :

POST http://127.0.0.1:8000/presented_courses/create/ Send 200 OK 43 ms 79 B

Params 1 Body Auth Headers 4 Scripts Docs

JSON

```
1 {
2   "CName": "Database",
3   "Department": "Engineering",
4   "Credit": 3,
5   "FName": "Reza",
6   "LName": "Hosseini",
7   "CID": "12345",
8   "LID": "123456"
9 }
```

Preview Headers 4 Cookies Tests 0/0 → Mock

Preview

```
1 {
2   "detail": "درس ارائه شده جدید با موفقیت ثبت شد"
3 }
```

خواندن :

GET ▼ http://127.0.0.1:8000/presented_courses/select/ Send 200 OK 23 ms 144 B

Params 1 Body ● Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/presented_courses/select/ 📄

QUERY PARAMETERS Import from URL 👁 Bulk Edit

+ Add 🗑 Delete all 👁 Description

name	value	▼	☑	🗑
------	-------	---	---	---

PATH PARAMETERS

❗ Path parameters are url path segments that start with a colon ':' e.g. ':id' ×

Preview ▼

```
1 {  
2   "presented_course": [  
3     {  
4       "Department": "Engineering",  
5       "CName": "Database",  
6       "FName": "Reza",  
7       "CID": "12345",  
8       "Credit": 3,  
9       "LName": "Hosseini",  
10      "LID": "123456"  
11    }  
12  ]  
13 }
```

آپدیت :

PUT ▼ http://127.0.0.1:8000/presented_courses/update/123456/12345 Send 200 OK 28 ms 246 B Just Now

Params 1 Body ● Auth Headers 4 Scripts Docs

JSON ▼

```
1 {  
2   "CName": "Algorithm",  
3   "Credit": 4  
4 }  
5
```

Preview ▼

```
1 {  
2   "message": "اطلاعات درس ارائه شده با موفقیت به روزرسانی شد",  
3   "presented_course": {  
4     "Department": "Engineering",  
5     "CName": "Algorithm",  
6     "FName": "Reza",  
7     "CID": "12345",  
8     "Credit": 4,  
9     "LName": "Hosseini",  
10    "LID": "123456"  
11  }  
12 }
```

حذف :

DELETE http://127.0.0.1:8000/presented_courses/delete/123456/12345 Send 200 OK 27 ms 71 B

Params 1 Body Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/presented_courses/delete/123456/12345?

QUERY PARAMETERS Import from URL Bulk Edit

+ Add Delete all Description

name	value
------	-------

PATH PARAMETERS

Path parameters are url path segments that start with a colon ':' e.g. 'id'

Preview Headers 4 Cookies Tests 0/0 → Mock

Preview

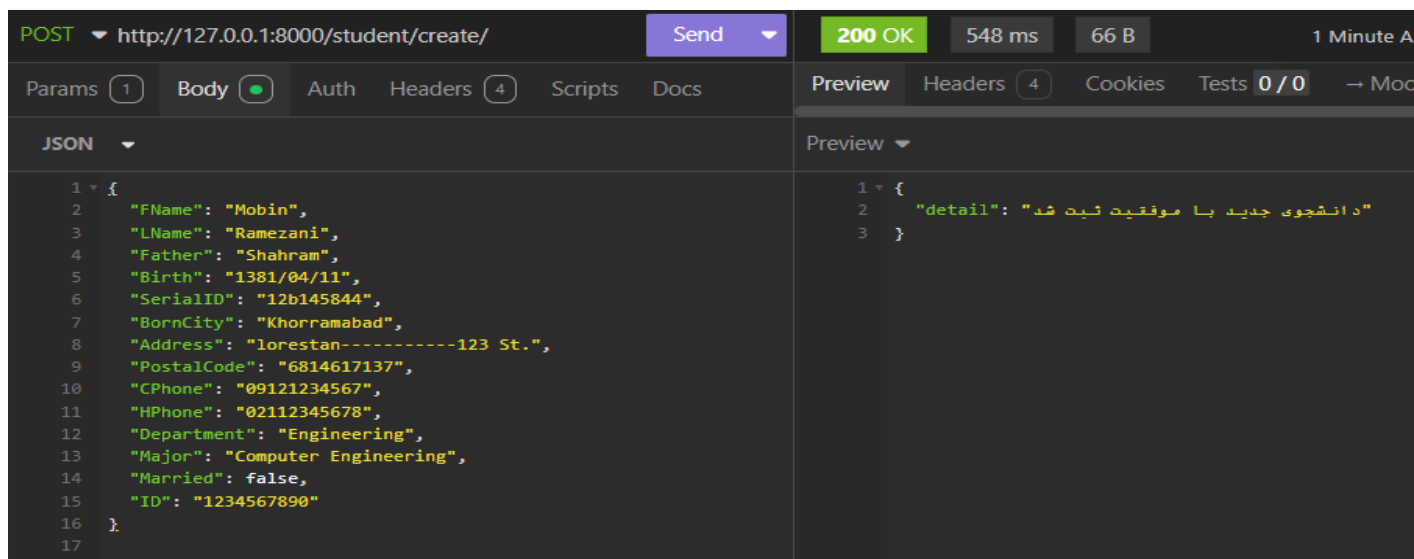
```
1 {  
2   "message": "درس ارائه شده با موفقیت حذف شد"  
3 }
```

فعالیت 2: پایگاه داده MongoDB که در تمرین چهارم ایجاد شد را به FastAPI متصل کنید به طوری که همه عملگرها از طریق API قابل اجرا باشد.

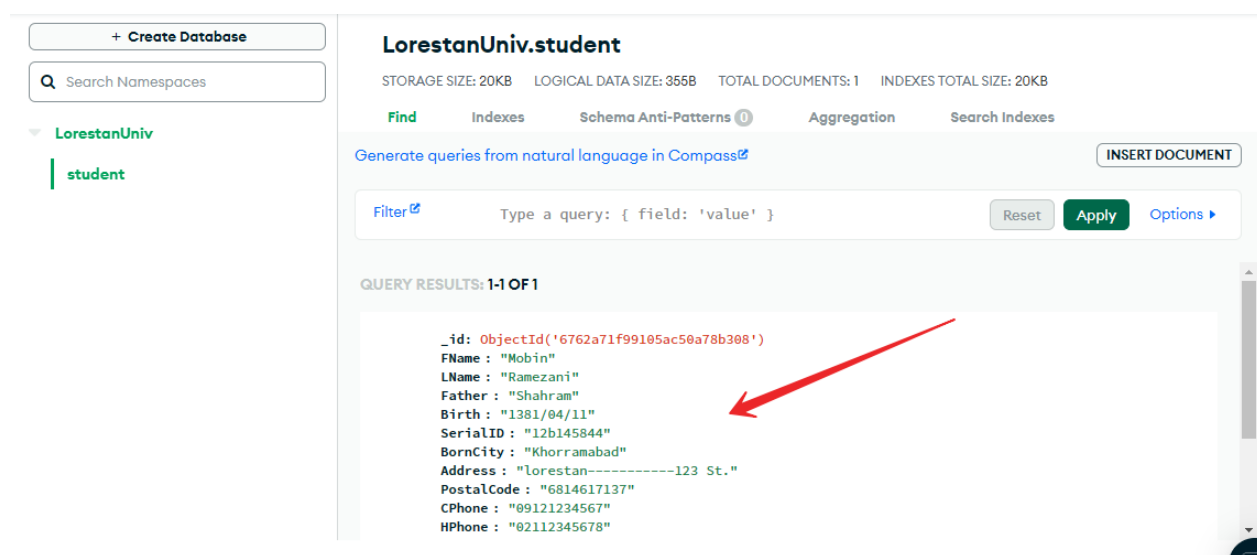
برای جدول **student** :

درج :

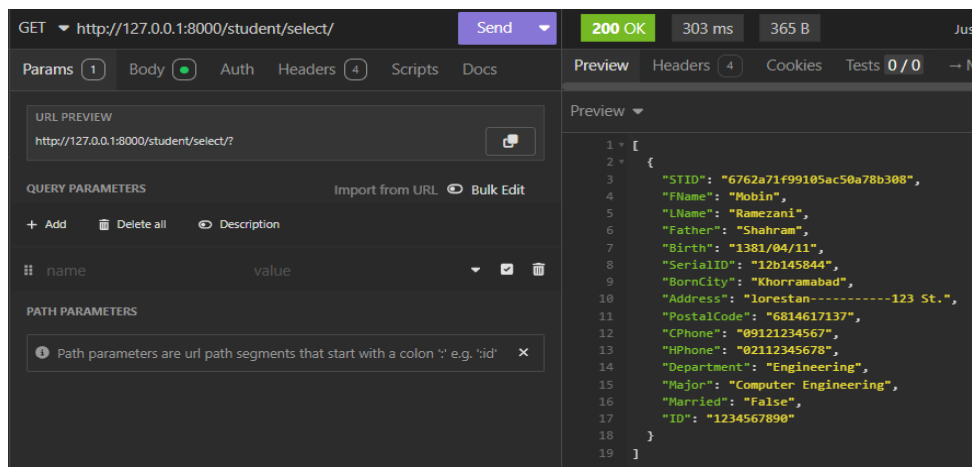
در **localhost** :



همزمان در Atlas :

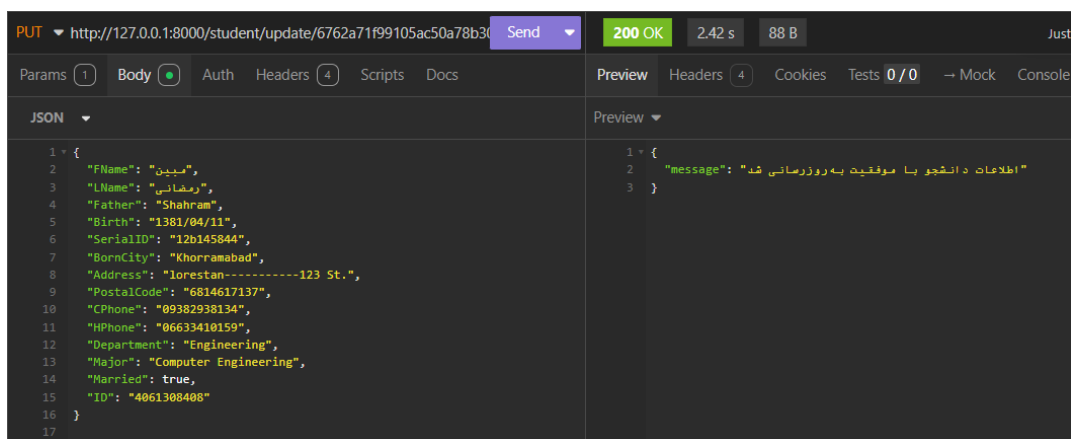


خواندن :

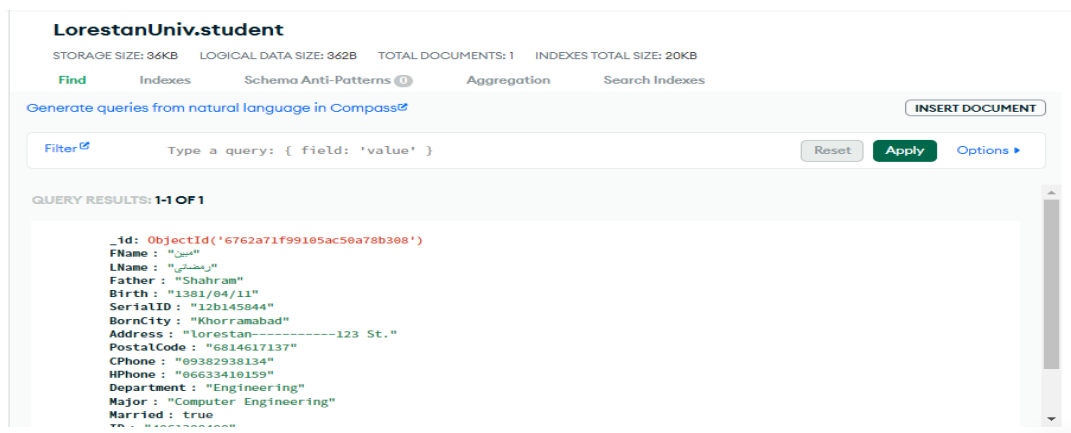


آپدیت :

در localhost :

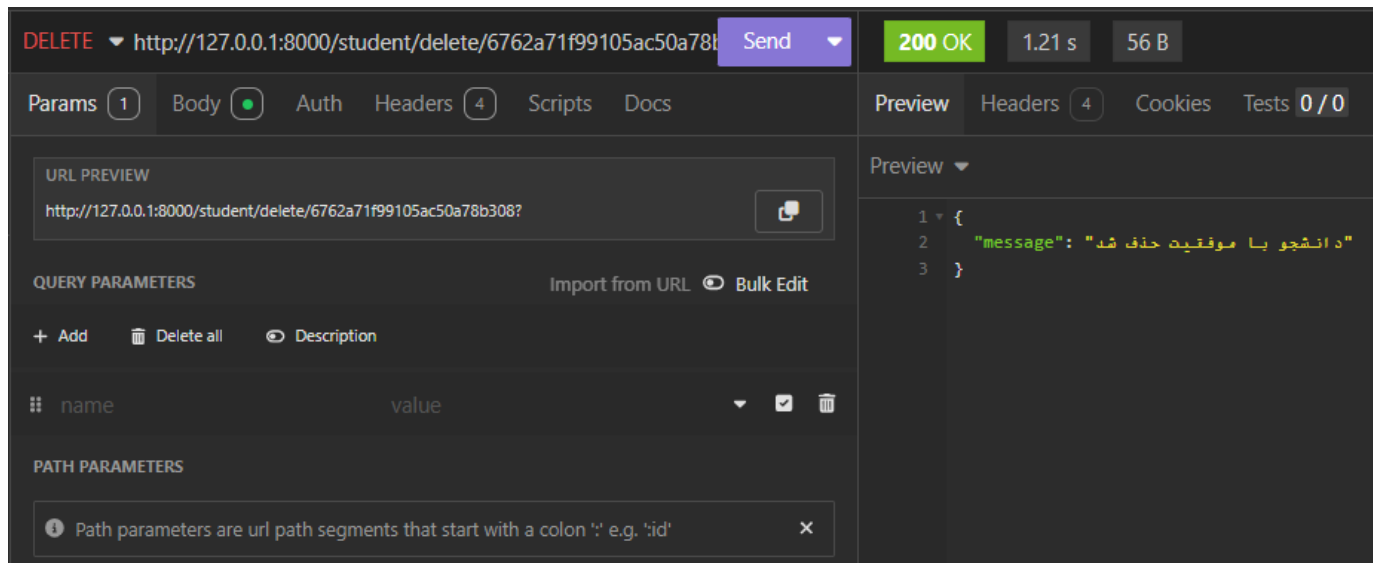


همزمان در Atlas :

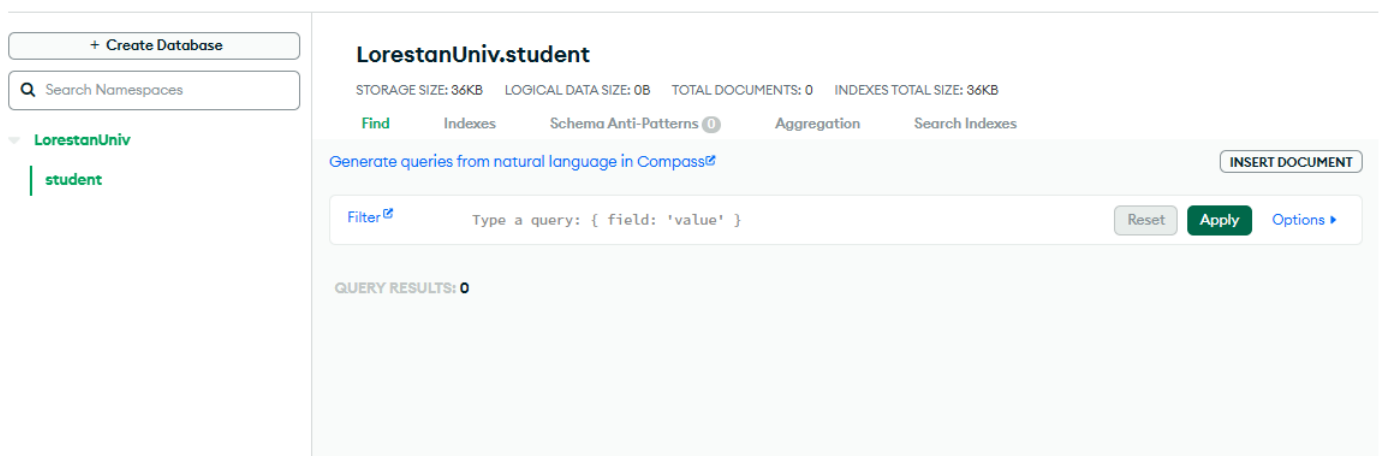


حذف :

در localhost :



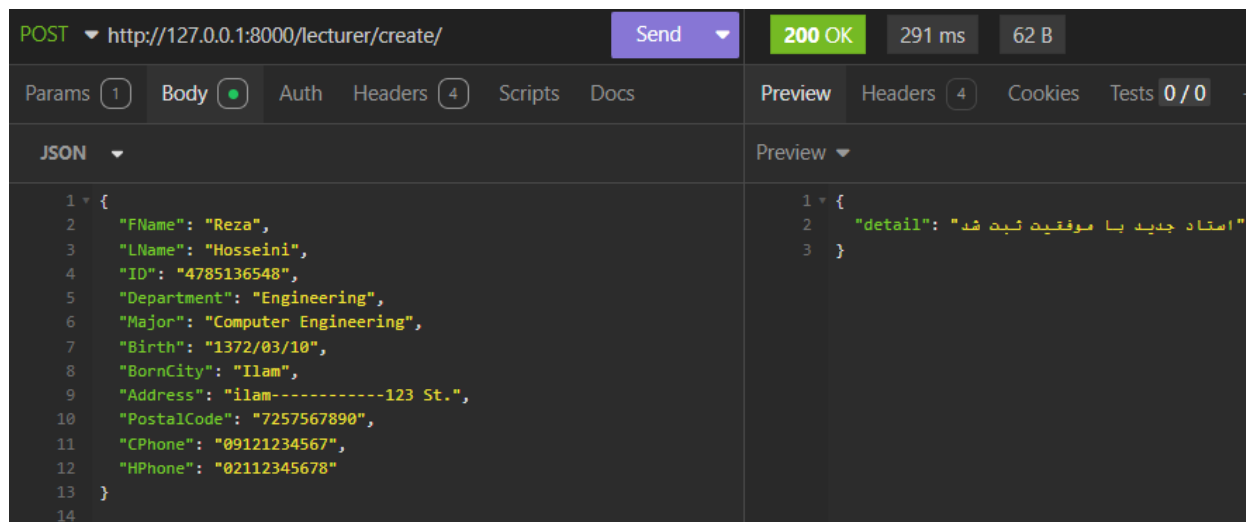
همزمان در Atlas :



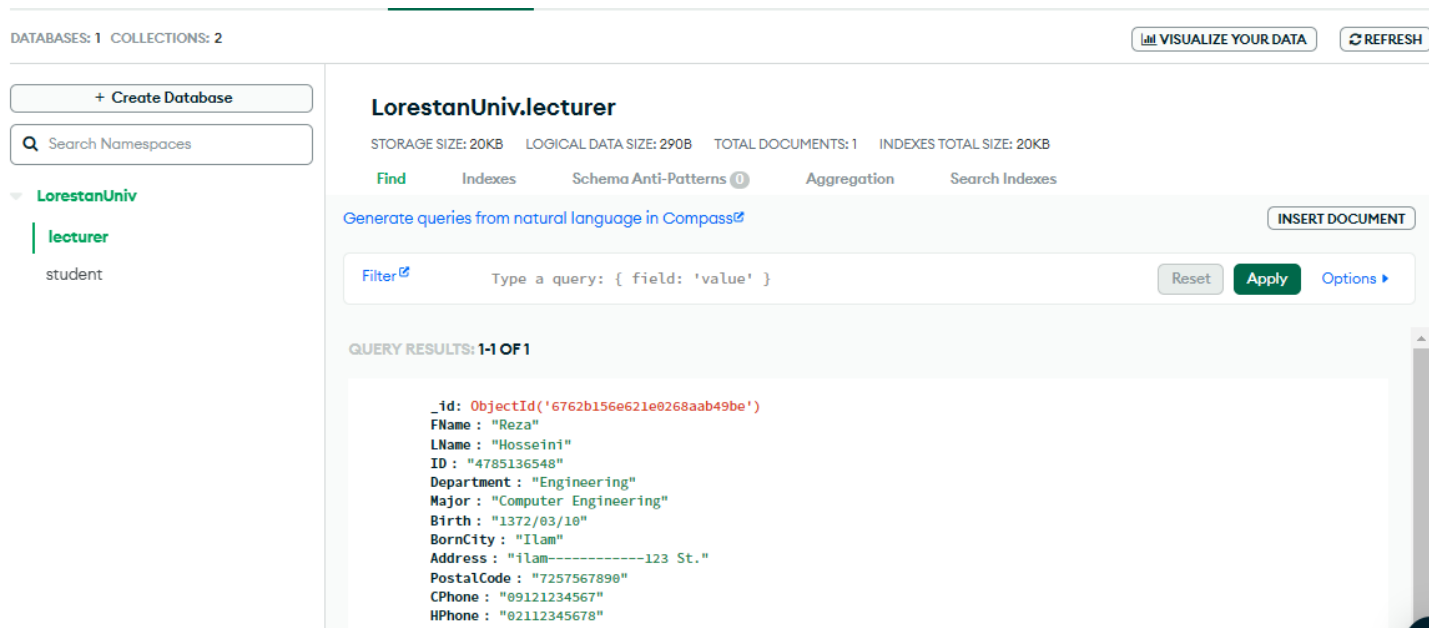
برای جدول lecturer :

درج :

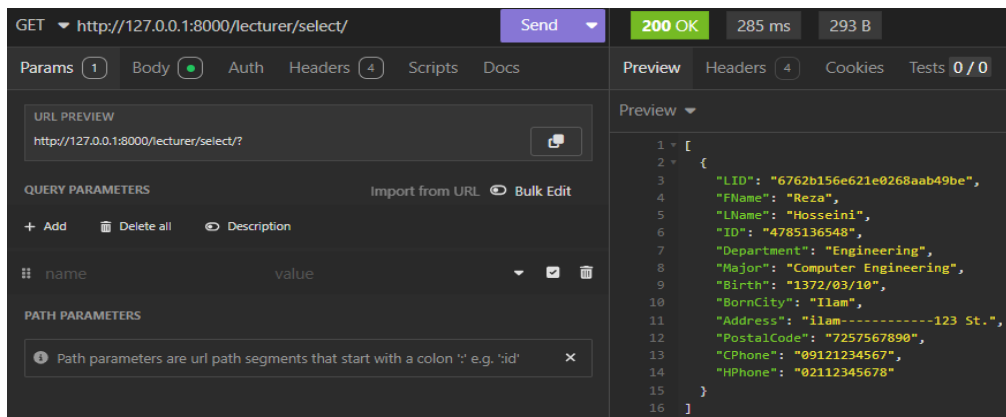
در localhost :



همزمان در Atlas :

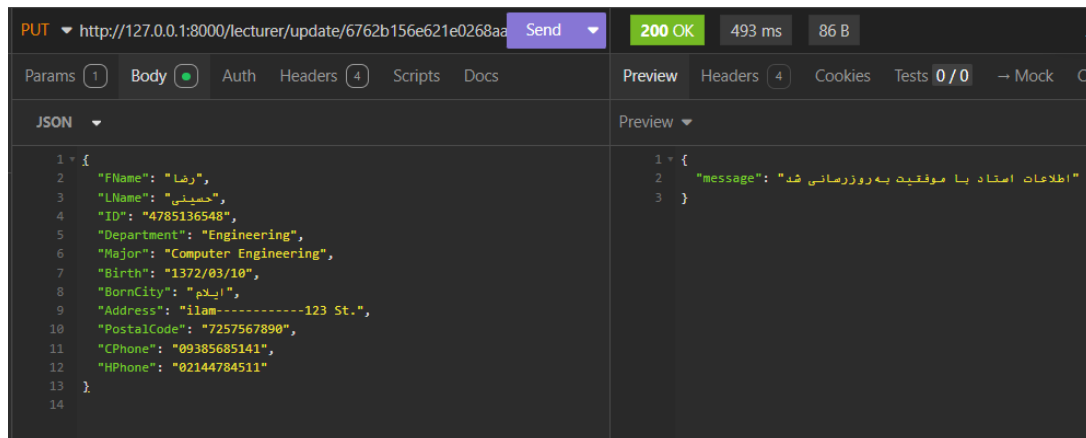


خواندن :

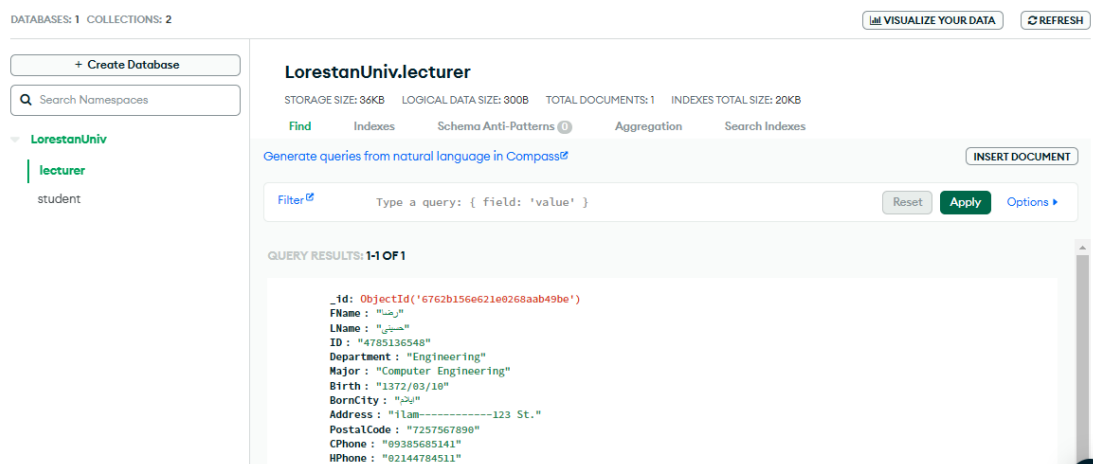


آپدیت :

در localhost :



همزمان در Atlas :



حذف :

در localhost :

DELETE ▾ .1:8000/lecturer/delete/6762b156e621e0268aab49be Send ▾ 200 OK 462 ms 54 B

Params 1 Body ● Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/lecturer/delete/6762b156e621e0268aab49be? 📄

QUERY PARAMETERS Import from URL 👁 Bulk Edit

+ Add 🗑 Delete all 📄 Description

name	value	📄	👁	🗑
------	-------	---	---	---

PATH PARAMETERS

📄 Path parameters are url path segments that start with a colon ':' e.g. 'id' ✕

Preview ▾

```
1 {  
2   "message": "استاد با موفقیت حذف شد"  
3 }
```

همزمان در Atlas :

DATABASES: 1 COLLECTIONS: 2 📄 VISUALIZE YOUR DATA 🔄 REFRESH

+ Create Database

🔍 Search Namespaces

▼ LorestanUniv

lecturer

student

LorestanUniv.lecturer

STORAGE SIZE: 36KB LOGICAL DATA SIZE: 0B TOTAL DOCUMENTS: 0 INDEXES TOTAL SIZE: 36KB

Find Indexes Schema Anti-Patterns ⓘ Aggregation Search Indexes

[Generate queries from natural language in Compass](#)

INSERT DOCUMENT

Filter 🔍 Type a query: { field: 'value' } Reset Apply Options ▶

QUERY RESULTS: 0

برای جدول course :

درج :

در localhost :

POST http://127.0.0.1:8000/course/create/ Send 200 OK 257 ms 58 B

Params 1 Body Auth Headers 4 Scripts Docs Preview Headers 4 Cookies Tests 0/0

JSON

```
1 {
2   "CName": "Database",
3   "Department": "Engineering",
4   "Credit": 3
5 }
6
```

Preview

```
1 {
2   "detail": "درس جدید با موفقیت ثبت شد"
3 }
```

همزمان در Atlas :

DATABASES: 1 COLLECTIONS: 3 VISUALIZE YOUR DATA REFRESH

+ Create Database

Search Namespaces

LorestanUniv

- course
- lecturer
- student

LorestanUniv.course

STORAGE SIZE: 20KB LOGICAL DATA SIZE: 828 TOTAL DOCUMENTS: 1 INDEXES TOTAL SIZE: 20KB

Find Indexes Schema Anti-Patterns Aggregation Search Indexes

Generate queries from natural language in Compass

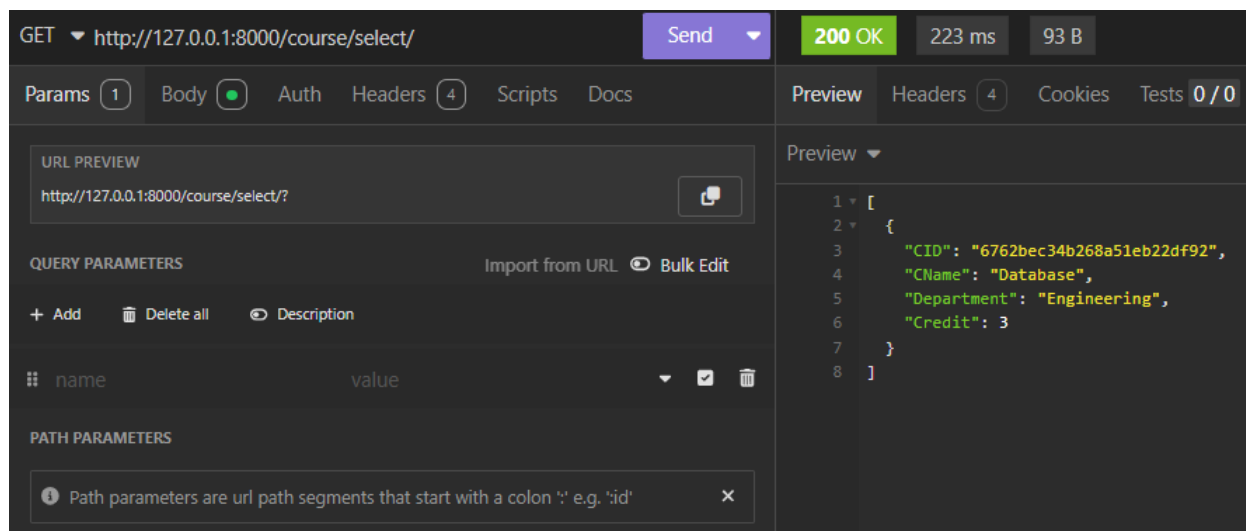
INSERT DOCUMENT

Filter Type a query: { field: 'value' } Reset Apply Options

QUERY RESULTS: 1-1 OF 1

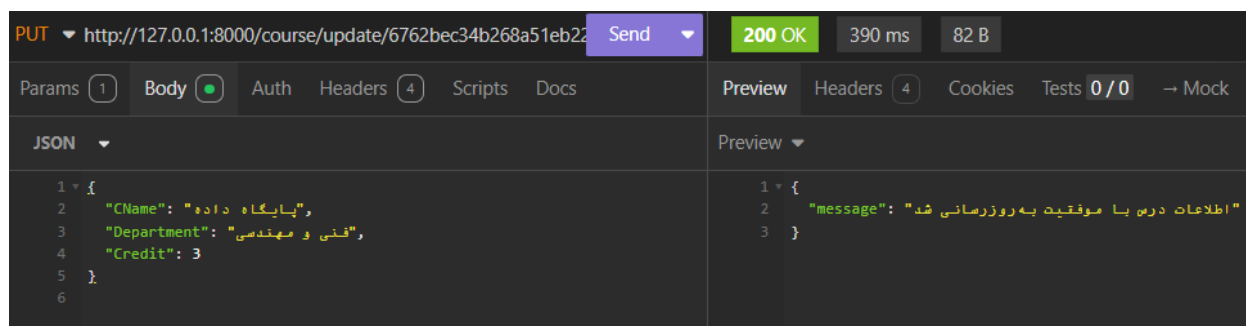
```
{
  "_id": ObjectId("6762bec34b268a51eb22df92"),
  "CName": "Database",
  "Department": "Engineering",
  "Credit": 3
}
```

خواندن :

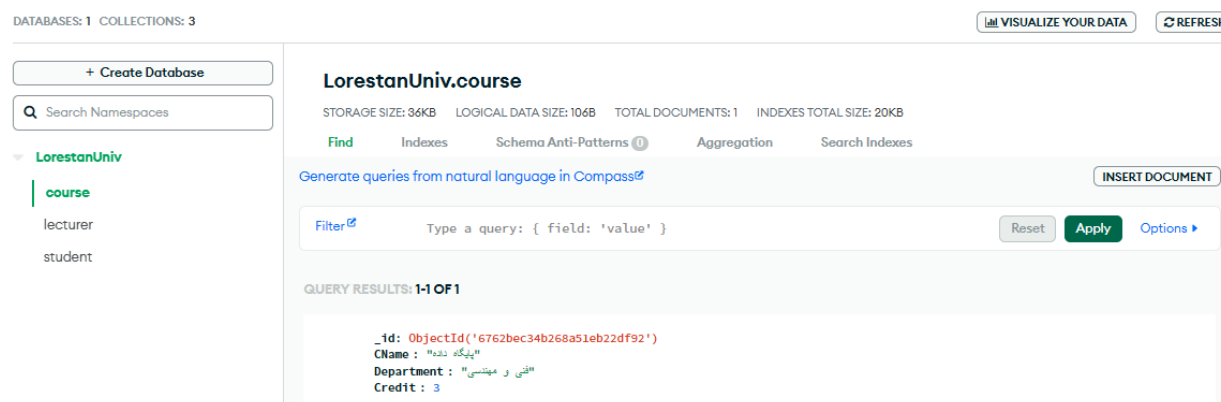


آپدیت :

در localhost :

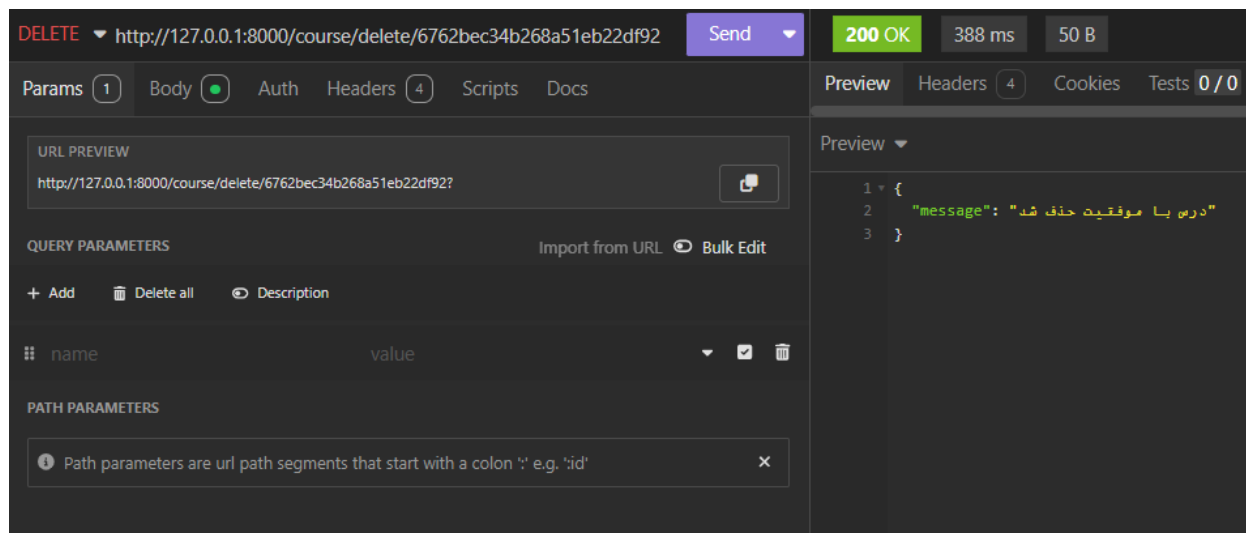


همزمان در Atlas :

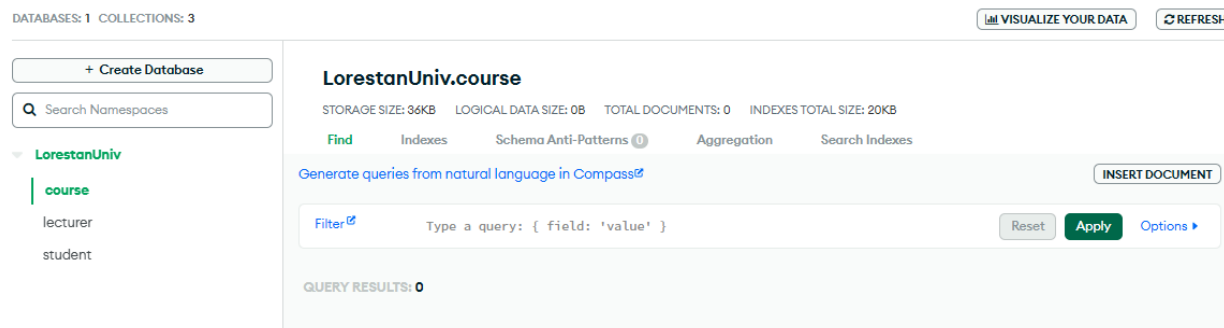


حذف :

در localhost :



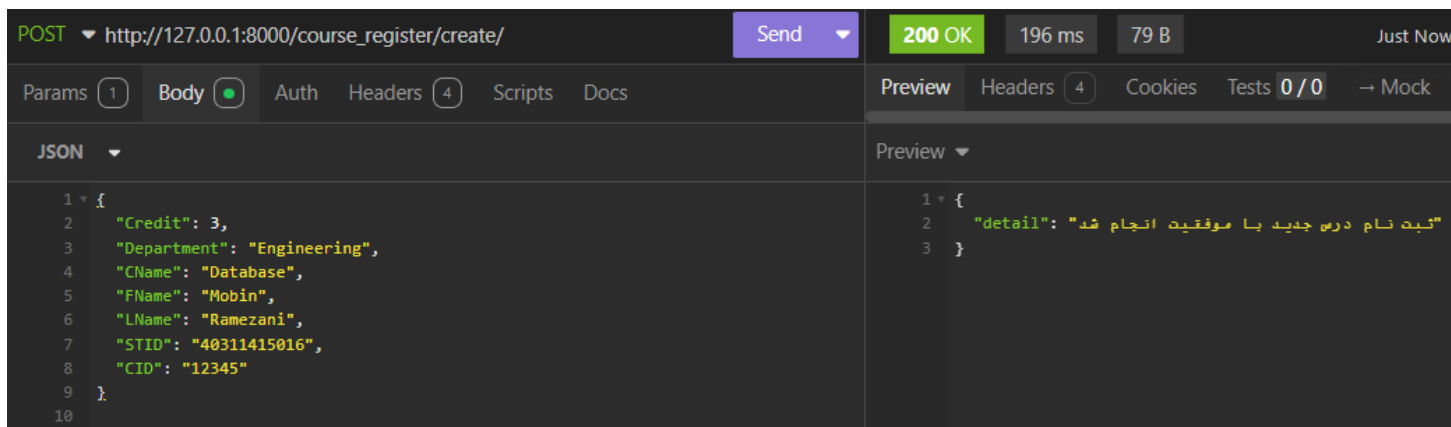
همزمان در Atlas :



برای جدول CourseRegister :

درج :

در localhost :



POST http://127.0.0.1:8000/course_register/create/ Send 200 OK 196 ms 79 B Just Now

Params 1 Body Auth Headers 4 Scripts Docs Preview Headers 4 Cookies Tests 0/0 → Mock

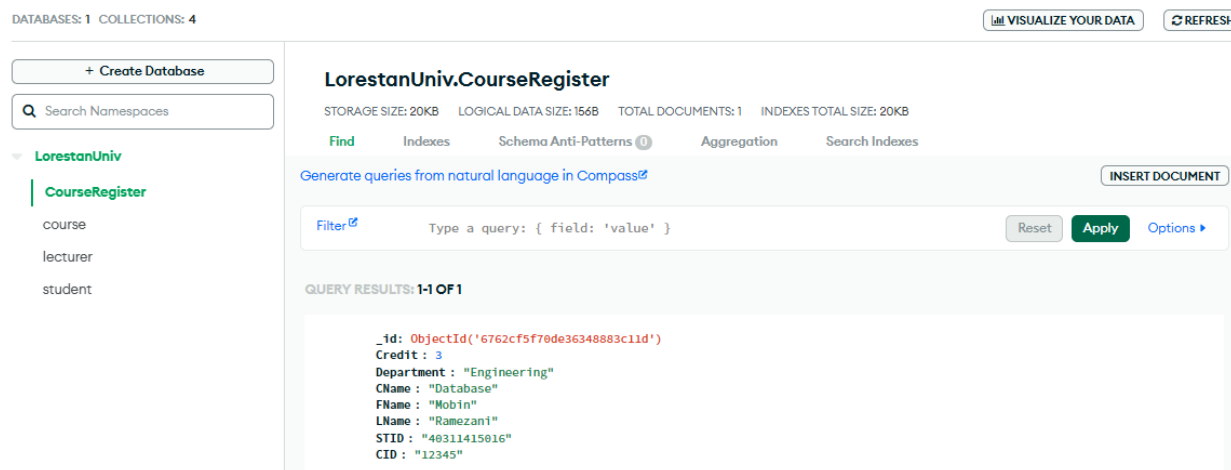
JSON

```
1 {
2   "Credit": 3,
3   "Department": "Engineering",
4   "CName": "Database",
5   "FName": "Mobin",
6   "LName": "Ramezani",
7   "STID": "40311415016",
8   "CID": "12345"
9 }
10
```

Preview

```
1 {
2   "detail": "تید نام درس جدید با موفقیت انجام شد"
3 }
```

همزمان در Atlas :



DATABASES: 1 COLLECTIONS: 4 VISUALIZE YOUR DATA REFRESH

+ Create Database

Search Namespaces

LorestanUniv

- CourseRegister
 - course
 - lecturer
 - student

LorestanUniv.CourseRegister

STORAGE SIZE: 20KB LOGICAL DATA SIZE: 156B TOTAL DOCUMENTS: 1 INDEXES TOTAL SIZE: 20KB

Find Indexes Schema Anti-Patterns Aggregation Search Indexes

Generate queries from natural language in Compass

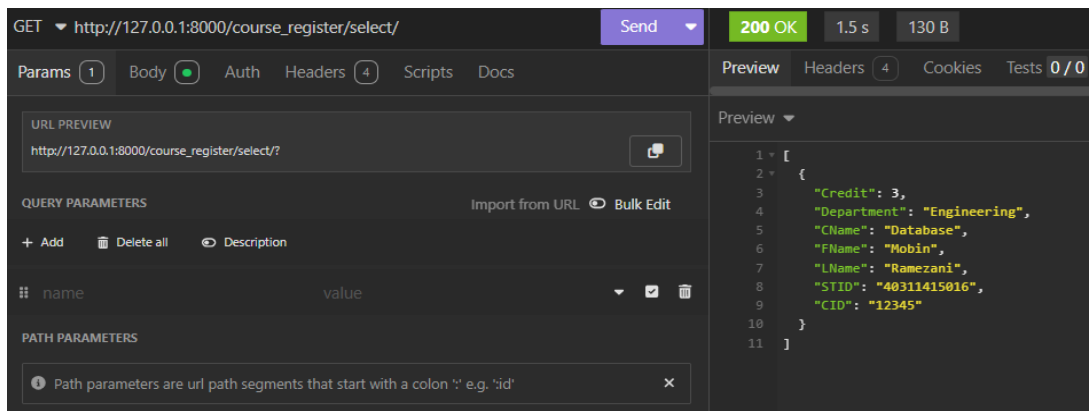
INSERT DOCUMENT

Filter Type a query: { field: 'value' } Reset Apply Options

QUERY RESULTS: 1-1 OF 1

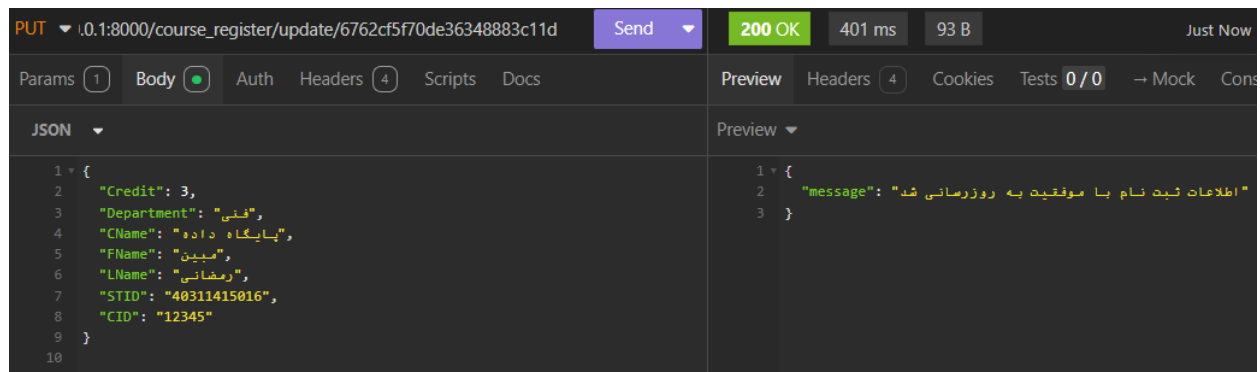
```
{
  "_id": ObjectId('6762cf5f70de36348883c11d')
  Credit: 3
  Department: "Engineering"
  CName: "Database"
  FName: "Mobin"
  LName: "Ramezani"
  STID: "40311415016"
  CID: "12345"
}
```

خواندن :

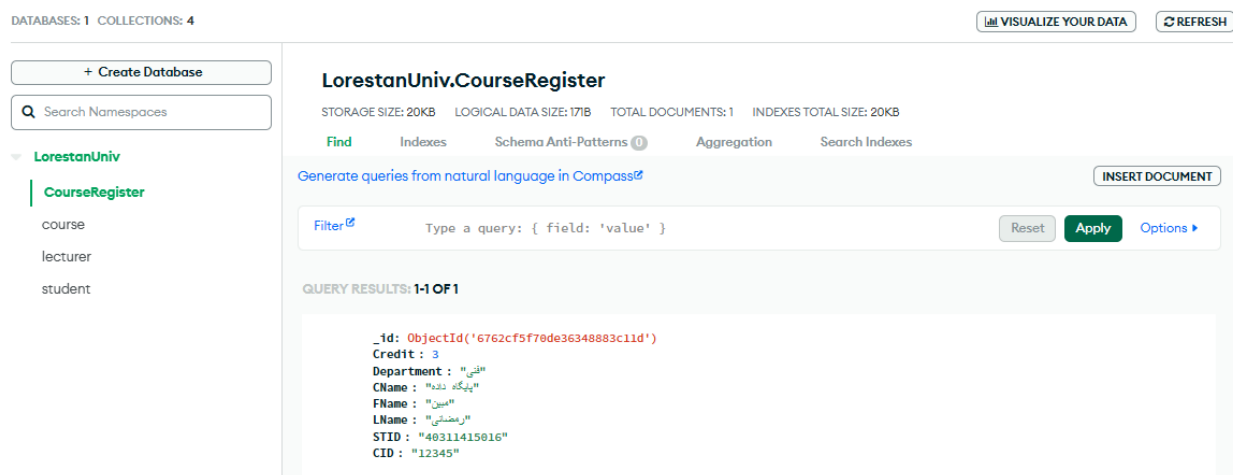


آپدیت :

در localhost :



همزمان در Atlas :



حذف :

در localhost :

DELETE 1:8000/course_register/delete/6762cf5f70de36348883c11d Send 200 OK 593 ms 60 B

Params 1 Body Auth Headers 4 Scripts Docs

URL PREVIEW
http://127.0.0.1:8000/course_register/delete/6762cf5f70de36348883c11d?

QUERY PARAMETERS Import from URL Bulk Edit

+ Add Delete all Description

name	value
------	-------

PATH PARAMETERS

Path parameters are url path segments that start with a colon ':' e.g. ':id'

Preview

```
1 {  
2   "message": "ثبت نام با موفقیت حذف شد"  
3 }
```

همزمان در Atlas :

DATABASES: 1 COLLECTIONS: 4 VISUALIZE YOUR DATA REFRESH

+ Create Database

Search Namespaces

LorestanUniv

- CourseRegister
- course
- lecturer
- student

LorestanUniv.CourseRegister

STORAGE SIZE: 36KB LOGICAL DATA SIZE: 0B TOTAL DOCUMENTS: 0 INDEXES TOTAL SIZE: 36KB

Find Indexes Schema Anti-Patterns Aggregation Search Indexes

Generate queries from natural language in Compass

INSERT DOCUMENT

Filter Type a query: { field: 'value' } Reset Apply Options

QUERY RESULTS: 0

برای جدول PresentedCourses :

درج :

در localhost :

The screenshot shows a REST client interface with a POST request to `http://127.0.0.1:8000/presented_course/create/`. The response is a 200 OK status with a 384 ms response time and 79 B of data. The JSON body of the response is:

```
1 {
2   "CName": "Database",
3   "Department": "Engineering",
4   "Credit": 3,
5   "FName": "Reza",
6   "LName": "Hosseini",
7   "CID": "12345",
8   "LID": "123456"
9 }
10
```

The right pane shows a preview of the JSON data:

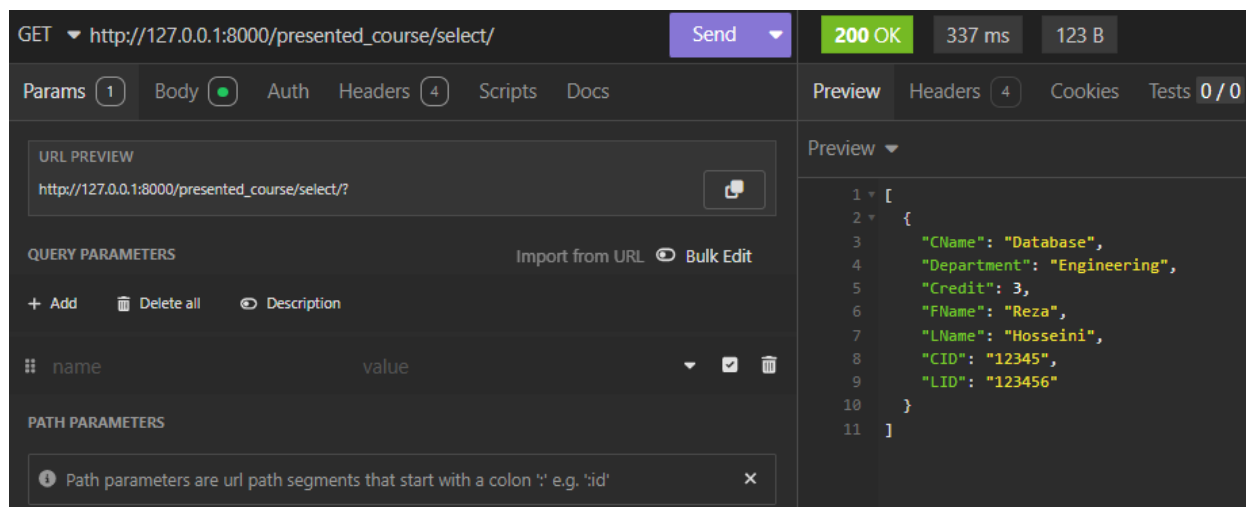
```
1 {
2   "detail": "درس ارائه شده جدید با موفقیت ثبت شد"
3 }
```

همزمان در Atlas :

The screenshot shows the MongoDB Atlas web interface. On the left, the database structure is shown with 'LorestanUniv' as the database and 'PresentedCourses' as the collection. The main panel displays the 'PresentedCourses' collection with a storage size of 20KB and 1 document. The document details are:

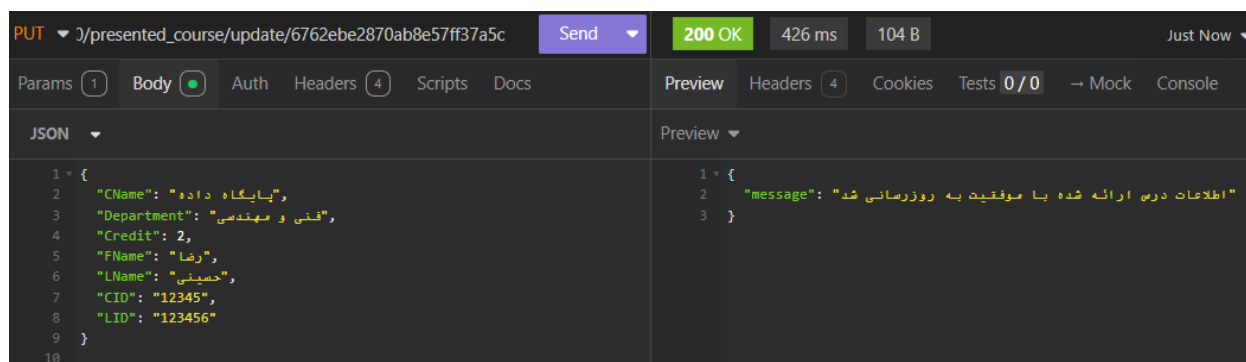
```
{
  "_id": ObjectId('6762ebe2870ab8e57ff37a5c'),
  "CName": "Database",
  "Department": "Engineering",
  "Credit": 3,
  "FName": "Reza",
  "LName": "Hosseini",
  "CID": "12345",
  "LID": "123456"
}
```

خواندن :

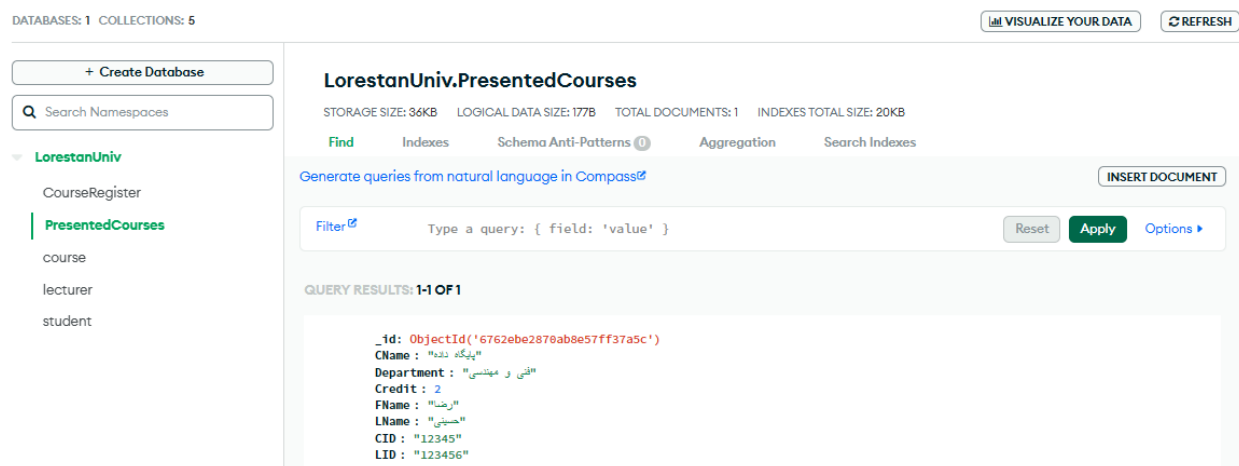


آپدیت :

در localhost :

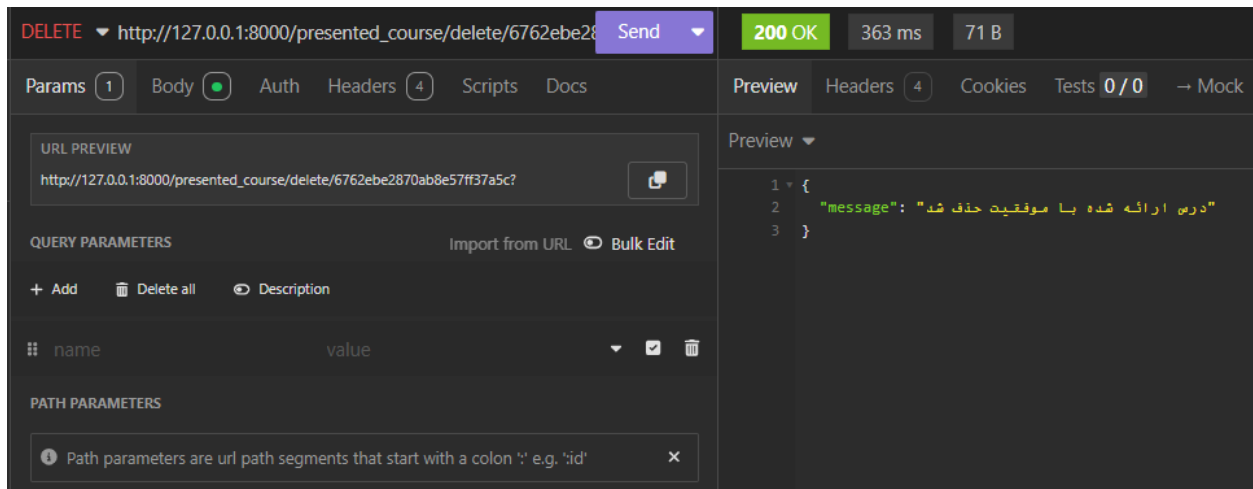


همزمان در Atlas :

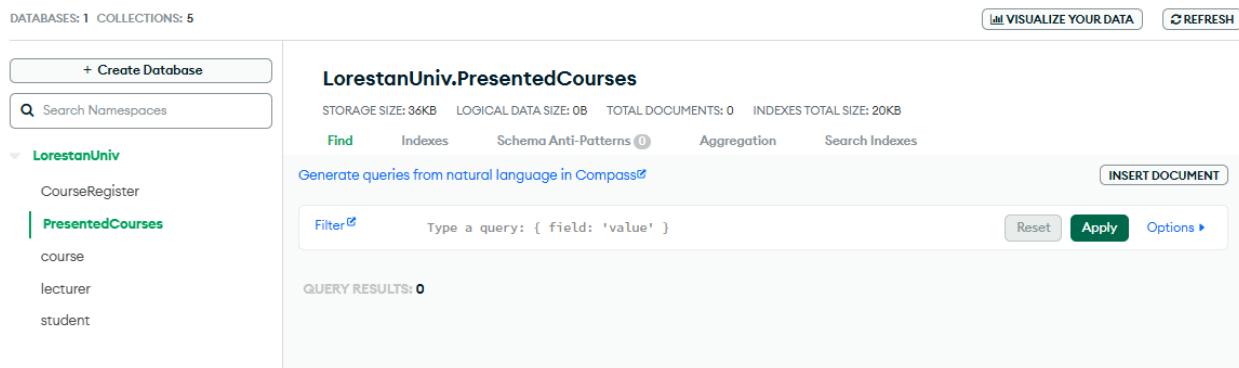


حذف :

در localhost :

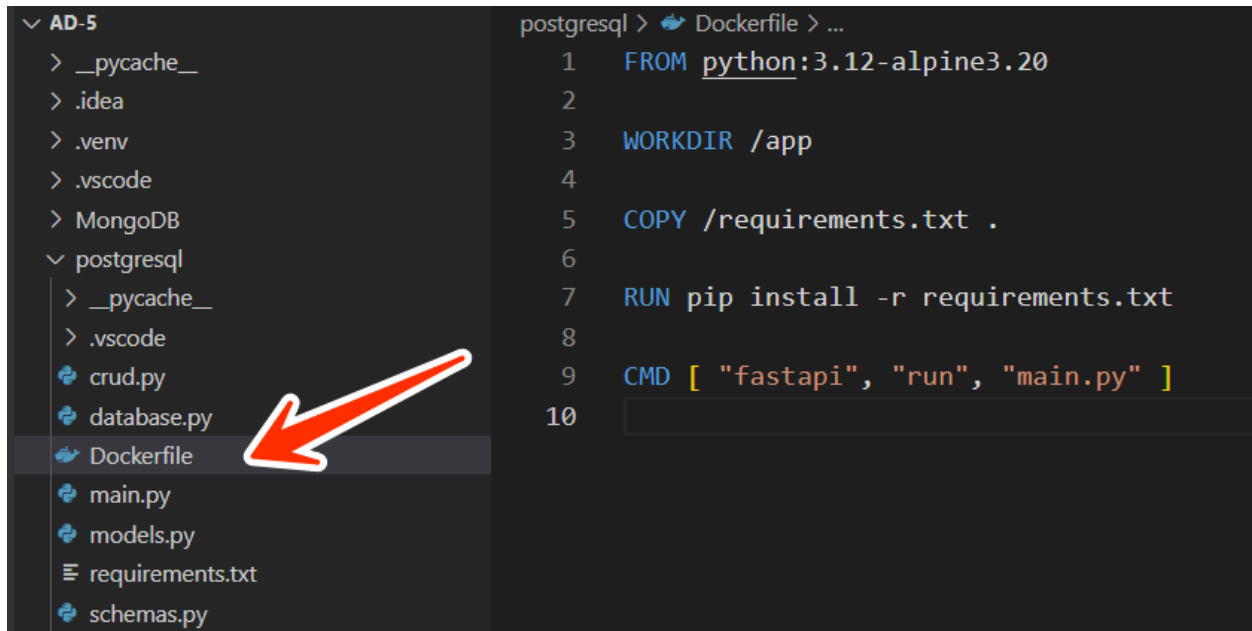


همزمان در Atlas :



فعالیت 3: فعالیت 1 را Dockerize کنید. Image های لازم را ایجاد کنید. سپس Container ها را ایجاد کرده و Image ها را در آن اجرا کنید.

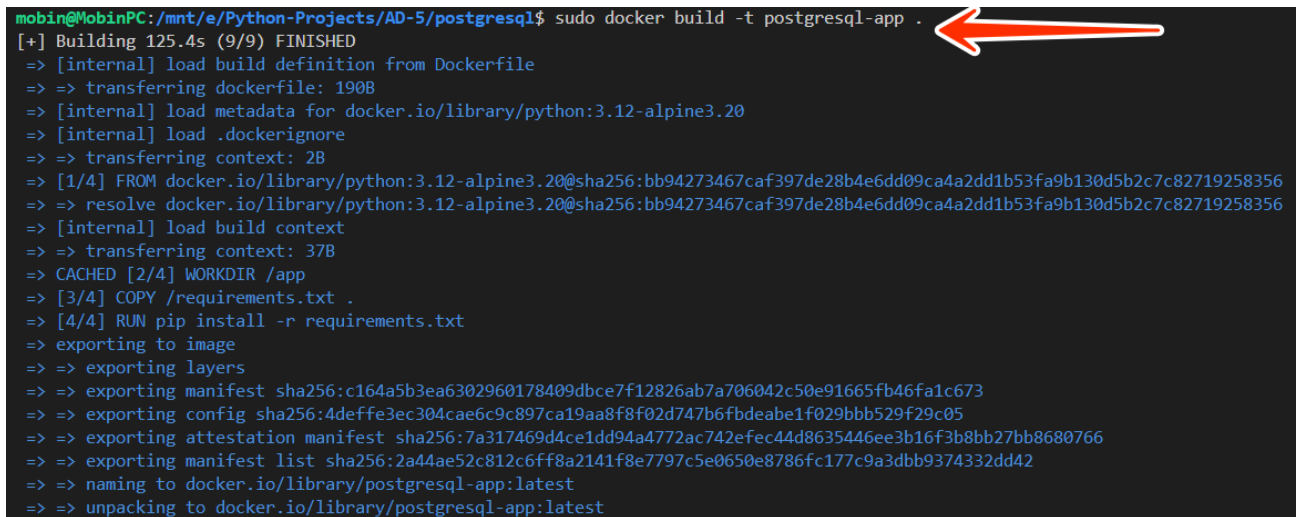
اول فایل **Dockerfile** رو میسازیم و کانفیگ زیر رو داخلش قرار میدیم :



```
AD-5
├── __pycache__
├── .idea
├── .venv
├── .vscode
├── MongoDB
├── postgresql
│   ├── __pycache__
│   ├── .vscode
│   ├── crud.py
│   ├── database.py
│   ├── Dockerfile
│   ├── main.py
│   ├── models.py
│   ├── requirements.txt
│   └── schemas.py
```

```
postgresql > Dockerfile > ...
1 FROM python:3.12-alpine3.20
2
3 WORKDIR /app
4
5 COPY /requirements.txt .
6
7 RUN pip install -r requirements.txt
8
9 CMD [ "fastapi", "run", "main.py" ]
10
```

بعد **Image** پروژه **postgresql** رو بصورت زیر و با نام **postgresql-app** ایجاد میکنیم :



```
mobin@MobinPC:/mnt/e/Python-Projects/AD-5/postgresql$ sudo docker build -t postgresql-app .
[+] Building 125.4s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 190B
=> [internal] load metadata for docker.io/library/python:3.12-alpine3.20
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [1/4] FROM docker.io/library/python:3.12-alpine3.20@sha256:bb94273467caf397de28b4e6dd09ca4a2dd1b53fa9b130d5b2c7c82719258356
=> => resolve docker.io/library/python:3.12-alpine3.20@sha256:bb94273467caf397de28b4e6dd09ca4a2dd1b53fa9b130d5b2c7c82719258356
=> [internal] load build context
=> => transferring context: 37B
=> CACHED [2/4] WORKDIR /app
=> [3/4] COPY /requirements.txt .
=> [4/4] RUN pip install -r requirements.txt
=> exporting to image
=> => exporting layers
=> => exporting manifest sha256:c164a5b3ea6302960178409dbce7f12826ab7a706042c50e91665fb46fa1c673
=> => exporting config sha256:4deffe3ec304cae6c9c897ca19aa8f8f02d747b6fbdeabe1f029bbb529f29c05
=> => exporting attestation manifest sha256:7a317469d4ce1dd94a4772ac742efec44d8635446ee3b16f3b8bb27bb8680766
=> => exporting manifest list sha256:2a44ae52c812c6ff8a2141f8e7797c5e0650e8786fc177c9a3dbb9374332dd42
=> => naming to docker.io/library/postgresql-app:latest
=> => unpacking to docker.io/library/postgresql-app:latest
```

بعد لیست **image** هارو چک میکنیم تا ببینیم **image** به درستی ایجاد شده یا نه :

```
mobin@MobinPC:/mnt/e/Python-Projects/AD-5/postgresql$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
postgresql-app	latest	2a44ae52c812	15 seconds ago	246MB
redis	latest	ea96c435dc17	2 months ago	173MB
busybox	latest	2919d0172f75	2 months ago	6.56MB
hello-world	latest	5b3cc85e16e3	19 months ago	24.4kB

در نهایت یک **container** از این **image** میسازیم و از برنامه **postgres** که نوشتیم، استفاده میکنیم :

```
mobin@MobinPC:/mnt/e/Python-Projects/AD-5/postgresql$ sudo docker run --rm -it postgresql-app
```

FastAPI Starting production server 🚀

فعالیت 4: فعالیت 2 را Dockerize کنید. Image های لازم را ایجاد کنید. سپس Container ها را ایجاد کرده و Image ها را در آن اجرا کنید.

اول فایل **Dockerfile** رو میسازیم و کانفیگ زیر رو داخلش قرار میدیم : (دقیقا مشابه فعالیت قبل)

AD-5

- > __pycache__
- > .idea
- > .venv
- > .vscode
- > MongoDB
- ▼ postgresql
 - > __pycache__
 - > .vscode
 - crud.py
 - database.py
 - Dockerfile**
 - main.py
 - models.py
 - requirements.txt
 - schemas.py

postgresql > Dockerfile > ...

```

1 FROM python:3.12-alpine3.20
2
3 WORKDIR /app
4
5 COPY /requirements.txt .
6
7 RUN pip install -r requirements.txt
8
9 CMD [ "fastapi", "run", "main.py" ]
10

```

بعد Image پروژه **mongodb** رو بصورت زیر و با نام **mongo-app** ایجاد میکنیم :

```

mobin@MobinPC:/mnt/e/Python-Projects/AD-5/MongoDB$ sudo docker build -t mongo-app .
[sudo] password for mobin:
[+] Building 84.5s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 202B
=> [internal] load metadata for docker.io/library/python:3.12-alpine3.20
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [1/4] FROM docker.io/library/python:3.12-alpine3.20@sha256:bb94273467caf397de28b4e6dd09ca4a2dd1b53fa9b130d5b2c7c82719258356
=> => resolve docker.io/library/python:3.12-alpine3.20@sha256:bb94273467caf397de28b4e6dd09ca4a2dd1b53fa9b130d5b2c7c82719258356
=> [internal] load build context
=> => transferring context: 15.32kB
=> CACHED [2/4] WORKDIR /app
=> [3/4] COPY . .
=> [4/4] RUN pip install -r requirements.txt
=> exporting to image
=> => exporting layers
=> => exporting manifest sha256:40afb618a3288aea6072b5db63f50545d49d63b903fedd55606af90a6fb05ee4
=> => exporting config sha256:60339bebc1388148098c1909c419f7a377cf35e82c7ab4145ff8d391b77ec55
=> => exporting attestation manifest sha256:2d00511d2ffde7c14f74666236c23dfe8f24d255e7243bd672bcbb6023864975
=> => exporting manifest list sha256:4dddd919e3732420bbcec66a99e36ec53be1cc8c20c0e1f35d70c5557942caf2
=> => naming to docker.io/library/mongo-app:latest
=> => unpacking to docker.io/library/mongo-app:latest

```

بعد لیست image ها رو چک میکنیم تا ببینیم image به درستی ایجاد شده یا نه :

```

mobin@MobinPC:/mnt/e/Python-Projects/AD-5/MongoDB$ sudo docker images

```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
mongo-app	latest	4dddd919e373	About a minute ago	190MB
postgresql-app	latest	9a4213988309	21 minutes ago	246MB
redis	latest	ea96c435dc17	2 months ago	173MB
busybox	latest	2919d0172f75	2 months ago	6.56MB
hello-world	latest	5b3cc85e16e3	19 months ago	24.4kB

در نهایت یک container از این image میسازیم و از برنامه mongo که نوشته ایم، استفاده میکنیم :

```

mobin@MobinPC:/mnt/e/Python-Projects/AD-5/MongoDB$ sudo docker run --rm -it mongo-app

```

```

FastAPI Starting production server 🚀

Searching for package file structure from directories with __init__.py files
Pinged your deployment. You successfully connected to MongoDB!
Importing from /app

module 📄 main.py

code Importing the FastAPI app object from the module with the following code:

from main import app

app Using import string: main:app

server Server started at http://0.0.0.0:8000/docs (ctrl + click)
server Documentation at http://0.0.0.0:8000/docs

Logs:

INFO Started server process [1]
INFO Waiting for application startup.
INFO Application startup complete.
INFO Uvicorn running on http://0.0.0.0:8000 (Press CTRL+C to quit)

```

Thank you...