PATIENT'S UNIQUE IDENTIFICATION

MID TERM REPORT

OF MINI PROJECT

BACHELOR OF TECHNOLOGY

Computer Science and Engineering Branch

SUBMITTED BY :

ABHINAV BHARDWAJ (181500009)
ADITYA SINGH CHAUHAN (181500046)
ANVIT GUPTA (181500127)

SUPERVISED BY :

Mr. VAIBHAV DIWAN
(Technical Trainer)

GLA University, Mathura

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Content

Abstract

We all can't disagree with the fact that there are so many people in our society who are patients of such kind of diseases which need a long duration of treatment. And changing multiple doctors in this long duration of treatment is very often. In some case, it may due to unsatisfactory treatment by his/her doctor, while in some cases patients are supposed to change their city because of other reasons, but in both cases, it becomes very hard to keep its medical history (like previous prescriptions, reports, test results, etc.) with him/her.

Introduction

1.1 General Introduction to the Project

Currently in our society, patient used to keep hard copy of reports and prescriptions that becomes very difficult to maintain. There is no central system in our country that provides a facility of accessing someone's medical history in case of any accident or emergency. We totally depend on patient or his/her family during treatment which results problematic delays.

We are going to design a system that will provide Signup and then Login facility to the patient. We'll try to help patient in maintaining record of previous reports and prescriptions. As well as our system will attach a Unique Patient Identification to every patient who creates account on our database. This Unique number will be used to view patient's report. We'll design an android app as well as a website to facilitate patient as well as guest. Guest view will be used in viewing report of any patient if you are having his/her Unique Identification Number. It'll be very important, if in case of any emergency, any paramedical staff, who is not having account on our database, wants to examine operate any patient then he/she can view patient's reports just by searching Patient's Unique Identification number.

Area of Computer Science

The computer has brought revolution in every sphere of human life, whether it is business, education field, governance, medical science etc. The computer has reduced the human work load, businesses are going global and everything is available at the click of mouse. Most of the patients have to go to hospital which is a very time-consuming task. By this application they can keep in touch with them.

Problem Definition

Most of the people nowadays prefer online shopping, this become more convenient for them as most of the things they want are available online and can be purchased with a single click. There are some areas of online shopping which needs to be covered like most of the time one has to visit shop to buy goods related to construction. So, we are trying to make an online platform which provide these types of construction material goods.

Objectives of the Project

Unique Patient Identifier (UPI) will be an individual identification number of every patient issued by this system. The objective of this project is to collect Patient's basic details (like Name, DoB, Contact number, Blood Group, Address, etc.) as well as giving a facility to upload heap of reports and prescriptions, store them in a centralized database.

Technology being used

Hardware Requirements :

- Computer System with minimum 8GB of RAM

Software Requirements :

- Windows/Linux OS
- Android Studio
- Visual Code Studio
- Robo 3T
- Postman
- Adobe XD

Programming language :

- Java Programming
- JavaScript
- MERN Stack

Methodology

We are using Android Java and React based Webpage Portal as the frontend with the backend made using MongoDB. To see what's inside the android application a user has to login, if the user is not register, he/she can also register himself/herself. App will keep records of patient's reports as well as past health issues which we have feed there.

The modules used in this app are listed as follows:

1. Main Dashboard
2. My Profile
3. BMI Calculator
4. Upload Record
5. Records
6. Logout

Implementation Details

The implementation is divided in two parts:

App Development

i. Backend Development:

The technology used for developing backend is MongoDB. Basically we have implemented the backend part using Mongo. We implemented an admin panel to monitor all the activities which will be happening in the android application. The owner of this application is having one admin login username and password, only the admin can add or remove the data, the changes will be reflected to the android application. The data will be sent to the android application using API's

An application program interface (API) is a set of routines, protocols, and tools for building software applications. Basically, an API specifies how software components should interact. The data will sent in JSON format.

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate.

ii. Frontend Development:

We are using android studio, the tool which is used to develop android applications. The technology used for developing frontend is Android and Java. User will have to register themselves before login. We are parsing the data coming in JSON from the backend and displaying it on android application.

The modules used in this app are listed as follows:

1. Sign In – will use to sign in to the account.
2. Sign Up – will use to register his/her self.

3. Dashboard – It consist of 6 modules:
    a. My Profile – It will show the profile of the user
    b. Records – It will keep records of reports.
    c. BMI Calculator – It will calculate BMI of user by some inputting some variables
    d. Upload Record – It will use to upload/save his/her records.
    e. ToDo – will ease you to mark to do work.

Webpage based Portal: We are working on this in two parts viz frontend and backend. Firstly, we are working on backend after that will move towards frontend. There might be some changes in the backend while working with frontend.

i. **Backend Development:** The project commences with designing of fundamental patient schema and document schema. We will use APIS for creating different routes. Unique Patient Identification Number (UPI) will be generated by the server every time the new user creates his/her account. We will differentiate user as patient and admin with the help of middleware. Admin will be able to use few more functionalities than patient like viewing total number of users, etc. The data will be sent to backend using APIs.

An application program interface (API) is a set of routines, protocols and tools for building software applications. Basically, an API specifies how software components should interact.

The data will be sent in JSON format.

JSON is a lightweight data-interchange format it is easy for humans to read and write. It is easy for machines to parse and generate.

We are using MongoDB Atlas for cloud storage during development phase because of its flexibility and scalability of document database, available as a fully managed service.

MongoDB Atlas is the global cloud database service for modern applications. Deploy fully managed MongoDB across AWS, Azure, or GCP. Best-in-class automation and proven practices guarantee availability, scalability, and compliance with the most demanding data security and privacy standards.

ii. **Frontend:** We will be using React, HTML, Bootstrap for frontend development part. On home page, there will be basic functionalities like BMI calculator or viewing public details of any patient using UPI. But to store his/her records, he/she has to create account using Signup Page and then signin using SignIn Page. After signing in into account, there will be various modules like My Profile, Records, Upload Record, BMI Calculator, Signout etc.

PROGRESS

On App based Portal:

- Created app using Android studio, so that it can be used for GUI based Mobile application.
- Created Home page / introductory page.
- Created Sing-in /login page through which user can access their account.
- Created Sing-up /register page through which user can register in the account by basic details.
- Created Dashboard which consist of 6 modules.
- Modules are –
    - My profile
    - Records
    - BMI Calculator
    - Upload Records
    - To-do

On Web Page based Portal:

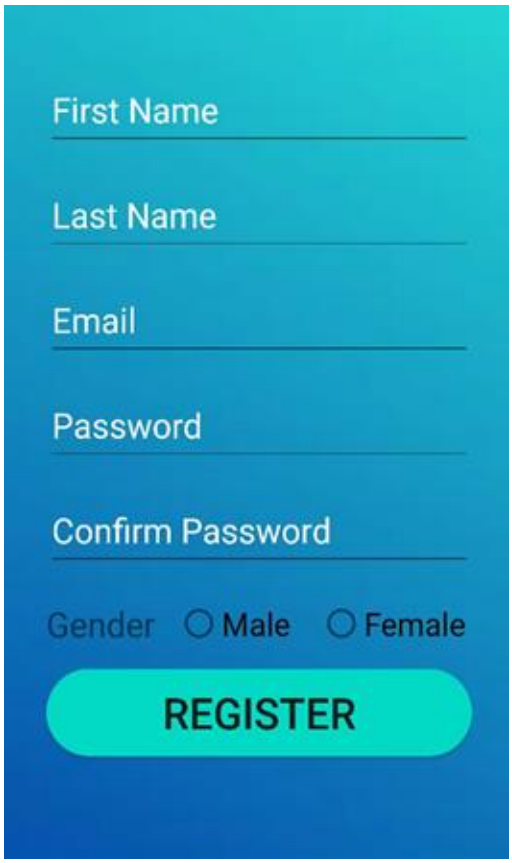
- Created online Database on MongoDB Atlas, so that it can be used for Web Page based Portal.
- Successfully connected Backend of the Web Page based Portal with database.
- Created a basic Schema for Patient.
- Created all the controllers required for creating a new account of the Patient (User).
- Created all the controllers required for signing in account of the Patient (User).
- Created all the controllers required for signing out Patient (User) from his/her account.

- Created the route required for creating new account of the Patient (User) as http://localhost:XXXXX /api/signup.
- Created the route required for signing in account of the Patient (User) as http://localhost:XXXXX /api/signin.
- Created the route required for signing out Patient (User) from his/her account as http://localhost:XXXXX /api/signout.

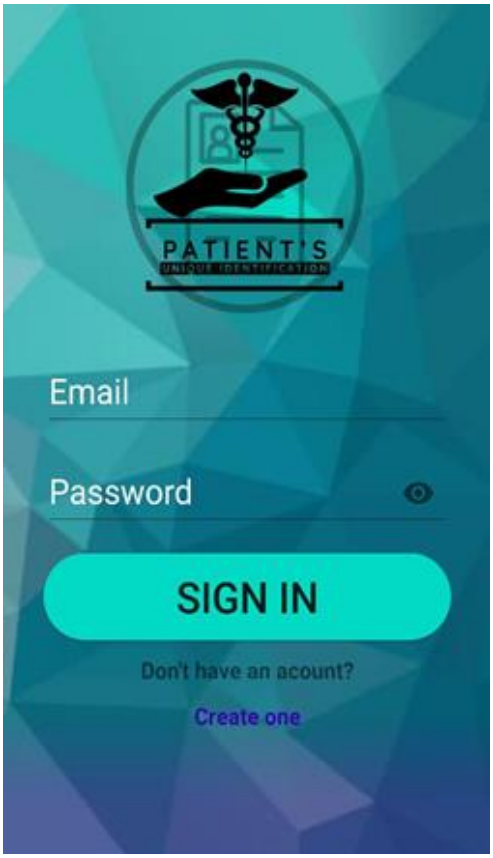
SCREENSHOTS

Android Application:

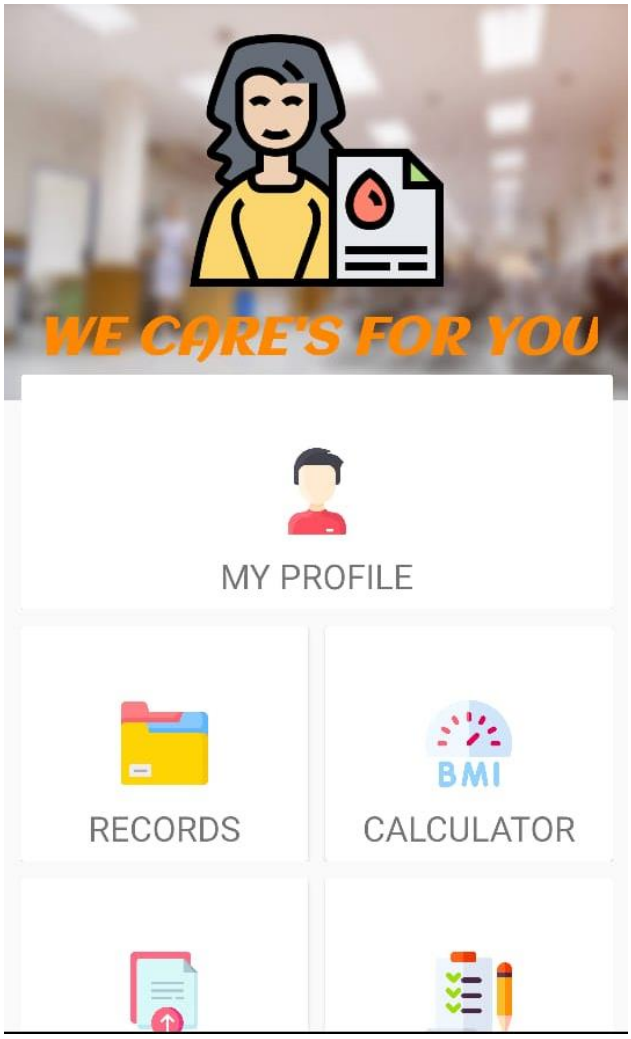
Signup Page

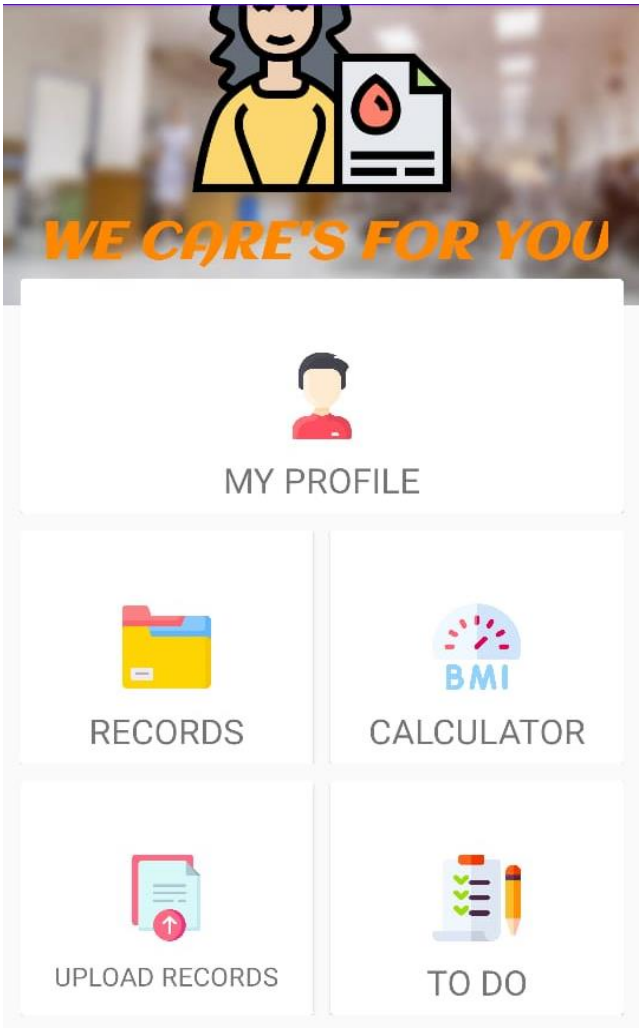


Signin Page



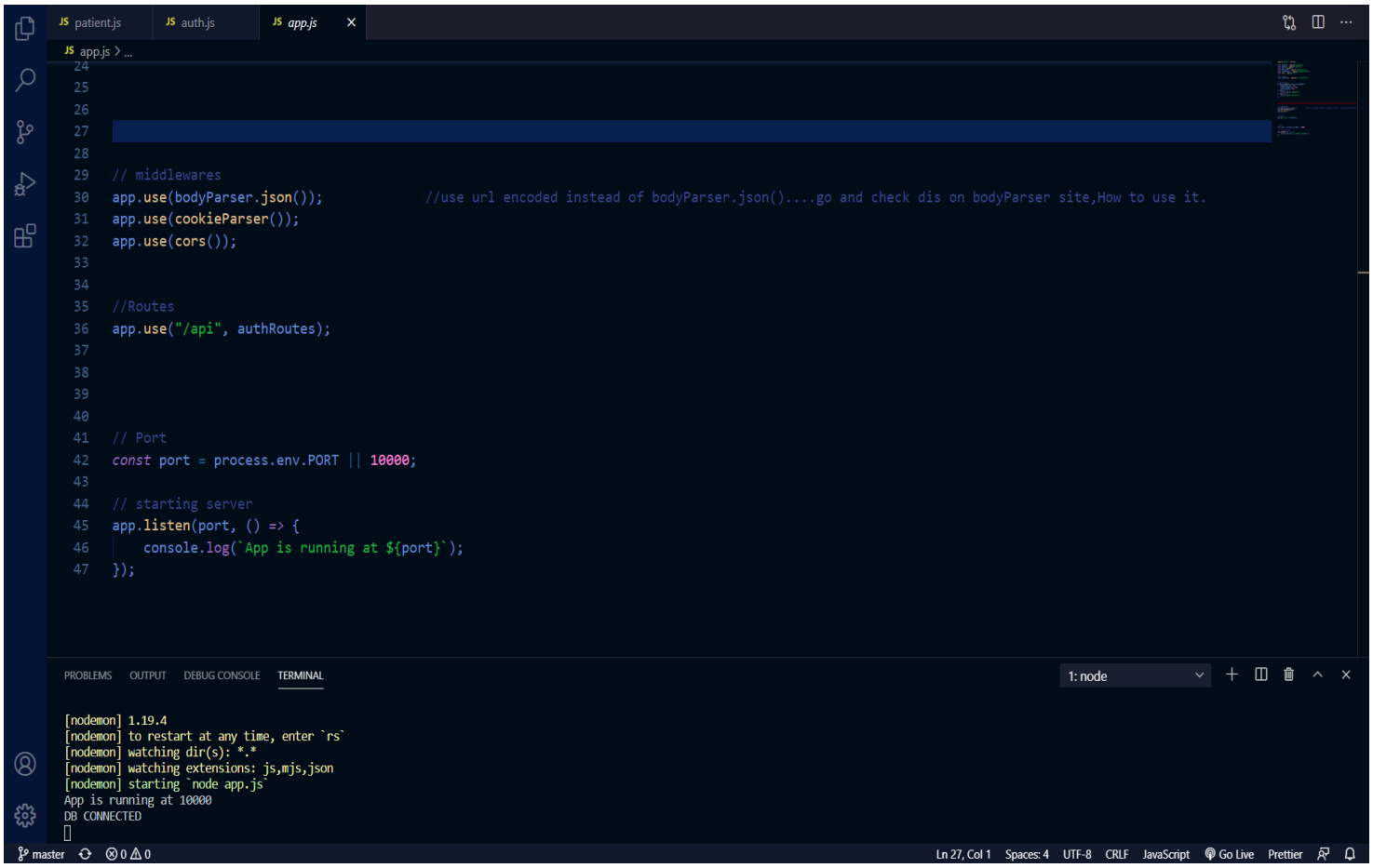
Main Dashboard

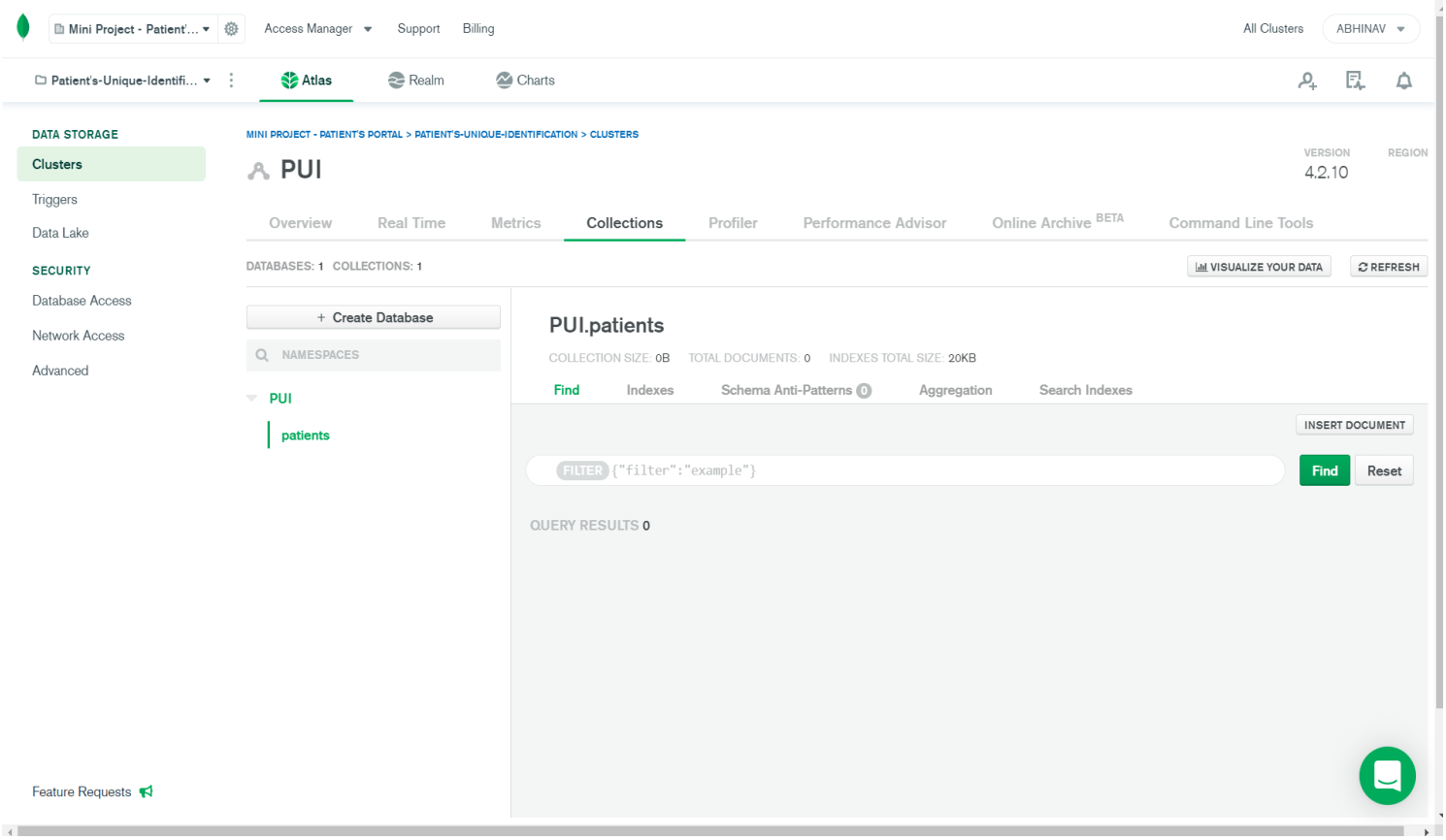




Webpage based Portal:

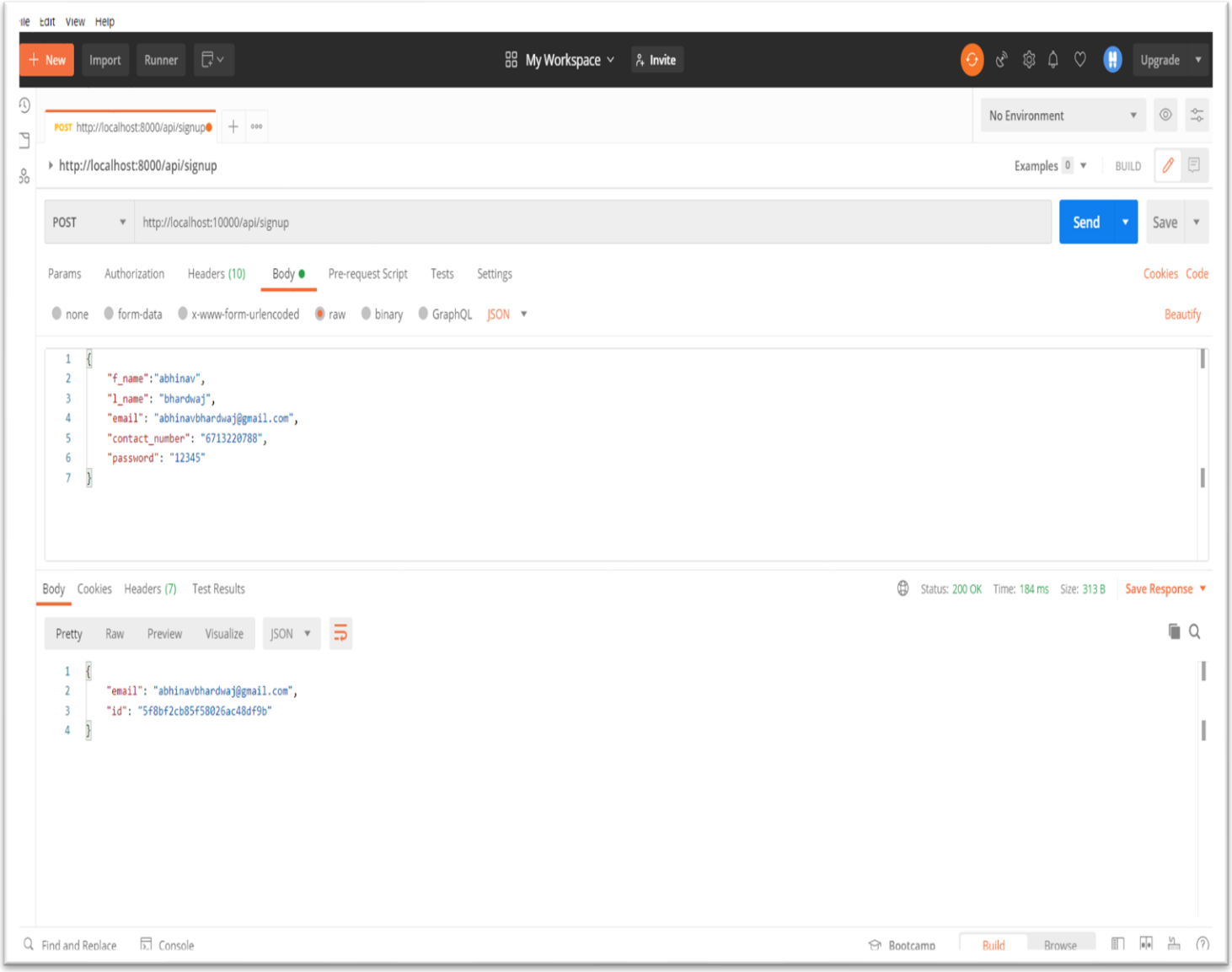
Successfully linked Project with MongoDB Cloud Storage (MongoDB Atlas): -



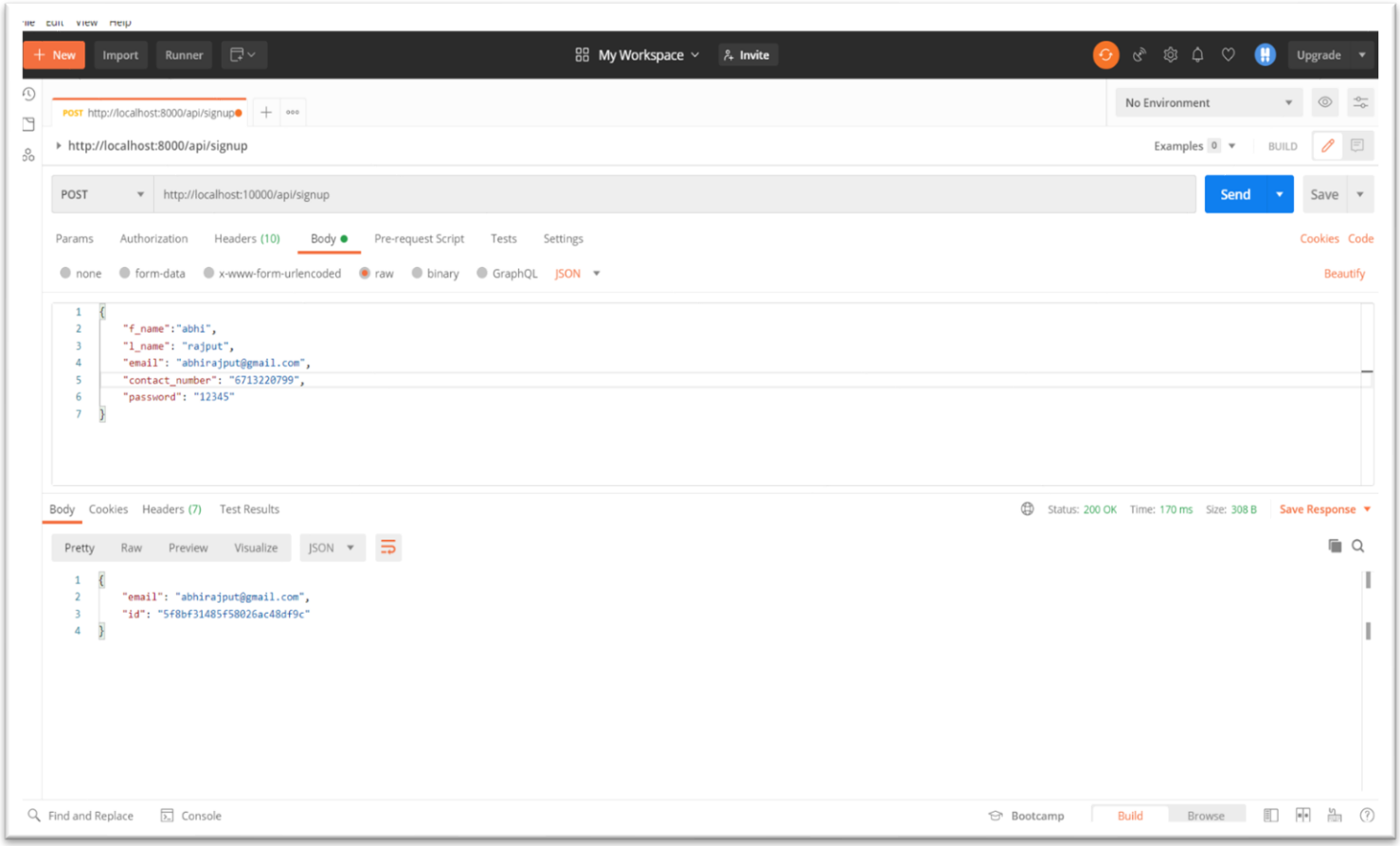


Successful Signup using Postman:-

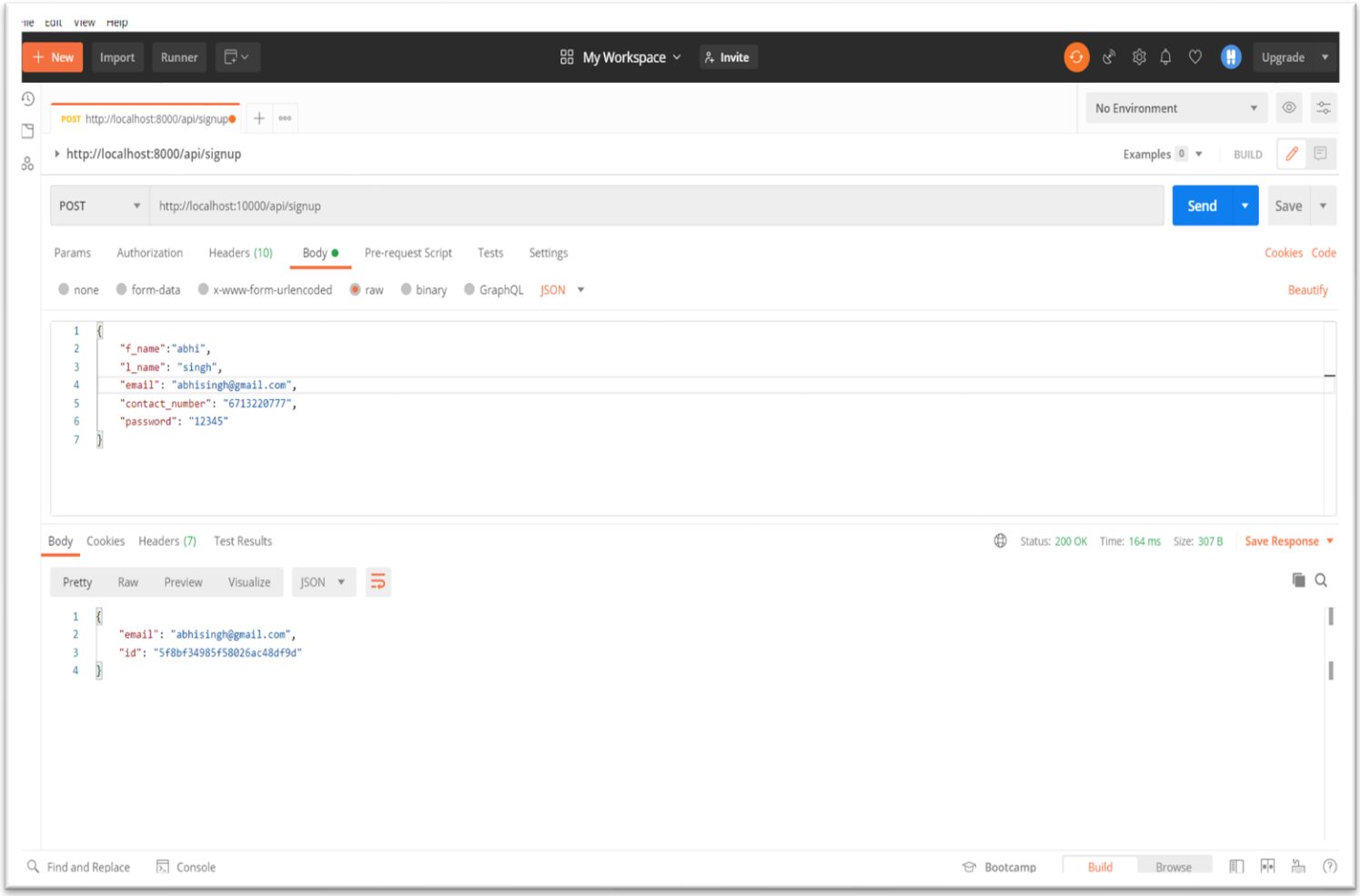
1st Patient



2nd Patient



3rd Patient



Mini Project - Patient'... ▾ | Access Manager ▾ | Support | Billing | All Clusters | ABHINAV ▾

Patient's-Unique-Identifi... ▾ | Atlas | Realm | Charts

QUERY RESULTS 1-3 OF 3

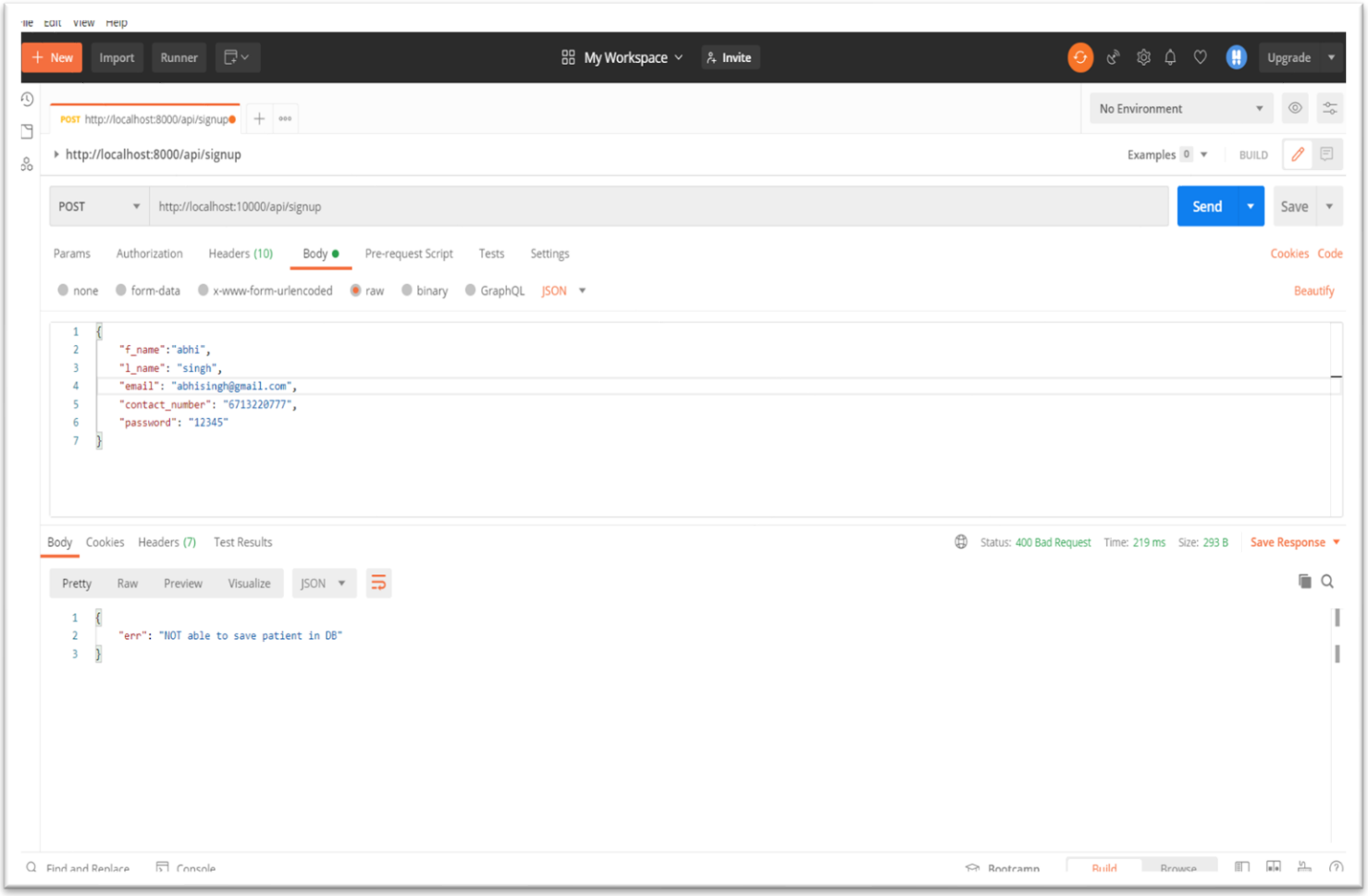

```
_id: ObjectId("5f8bf2cb85f58026ac48df9b")
role: 0
> documents: Array
f_name: "abhinav"
l_name: "bhardwaj"
email: "abhinavbhardwaj@gmail.com"
contact_number: "6713220788"
salt: "02d68ce0-1116-11eb-846a-4ddb1f5eeb91"
encry_password: "716340caaf391e1e1234f2d8bd89a9a1ce496139a4469532733b15c83b298571"
createdAt: 2020-10-18T07:46:19.955+00:00
updatedAt: 2020-10-18T07:46:19.955+00:00
__v: 0
```

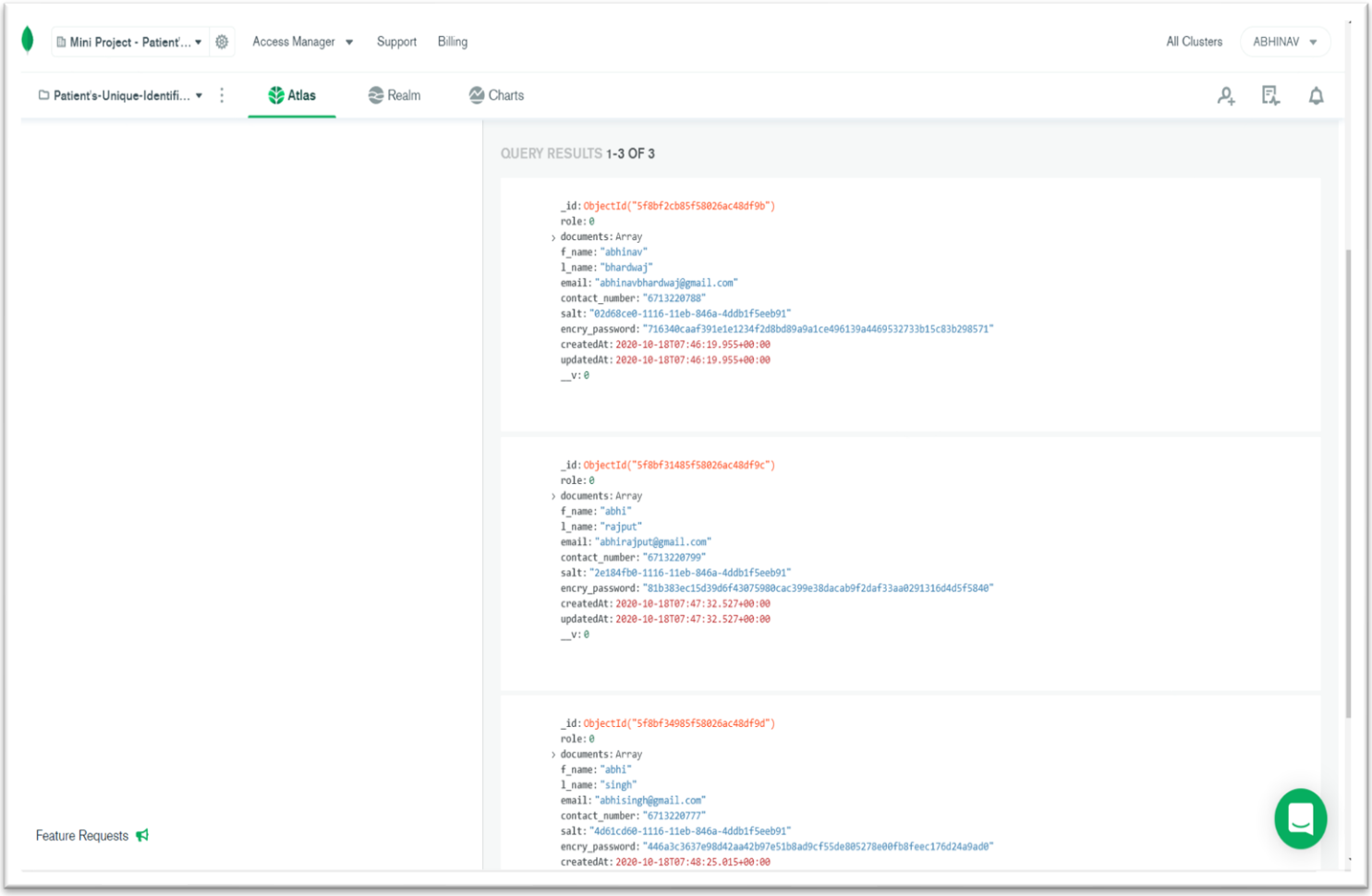
```
_id: ObjectId("5f8bf31485f58026ac48df9c")
role: 0
> documents: Array
f_name: "abhi"
l_name: "rajput"
email: "abhirajput@gmail.com"
contact_number: "6713220799"
salt: "2e184fb0-1116-11eb-846a-4ddb1f5eeb91"
encry_password: "81b383ec15d39d6f43075980cac399e38dacab9f2daf33aa0291316d4d5f5840"
createdAt: 2020-10-18T07:47:32.527+00:00
updatedAt: 2020-10-18T07:47:32.527+00:00
__v: 0
```

```
_id: ObjectId("5f8bf34985f58026ac48df9d")
role: 0
> documents: Array
f_name: "abhi"
l_name: "singh"
email: "abhisingh@gmail.com"
contact_number: "6713220777"
salt: "4d61cd60-1116-11eb-846a-4ddb1f5eeb91"
encry_password: "446a3c3637e98d42aa42b97e51b8ad9cf55de805278e00fb8feec176d24a9ad0"
createdAt: 2020-10-18T07:48:25.015+00:00
```

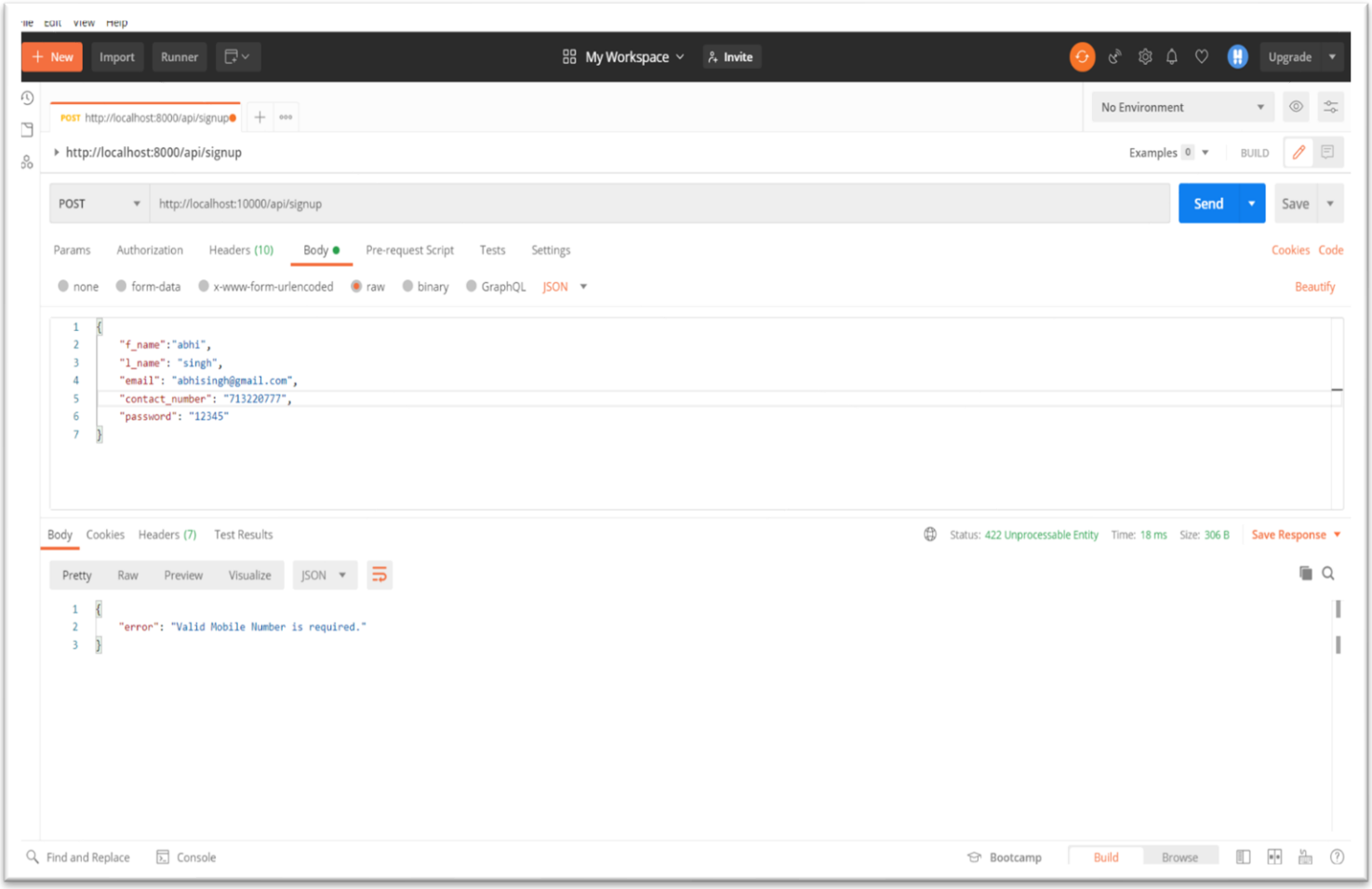

Feature Requests

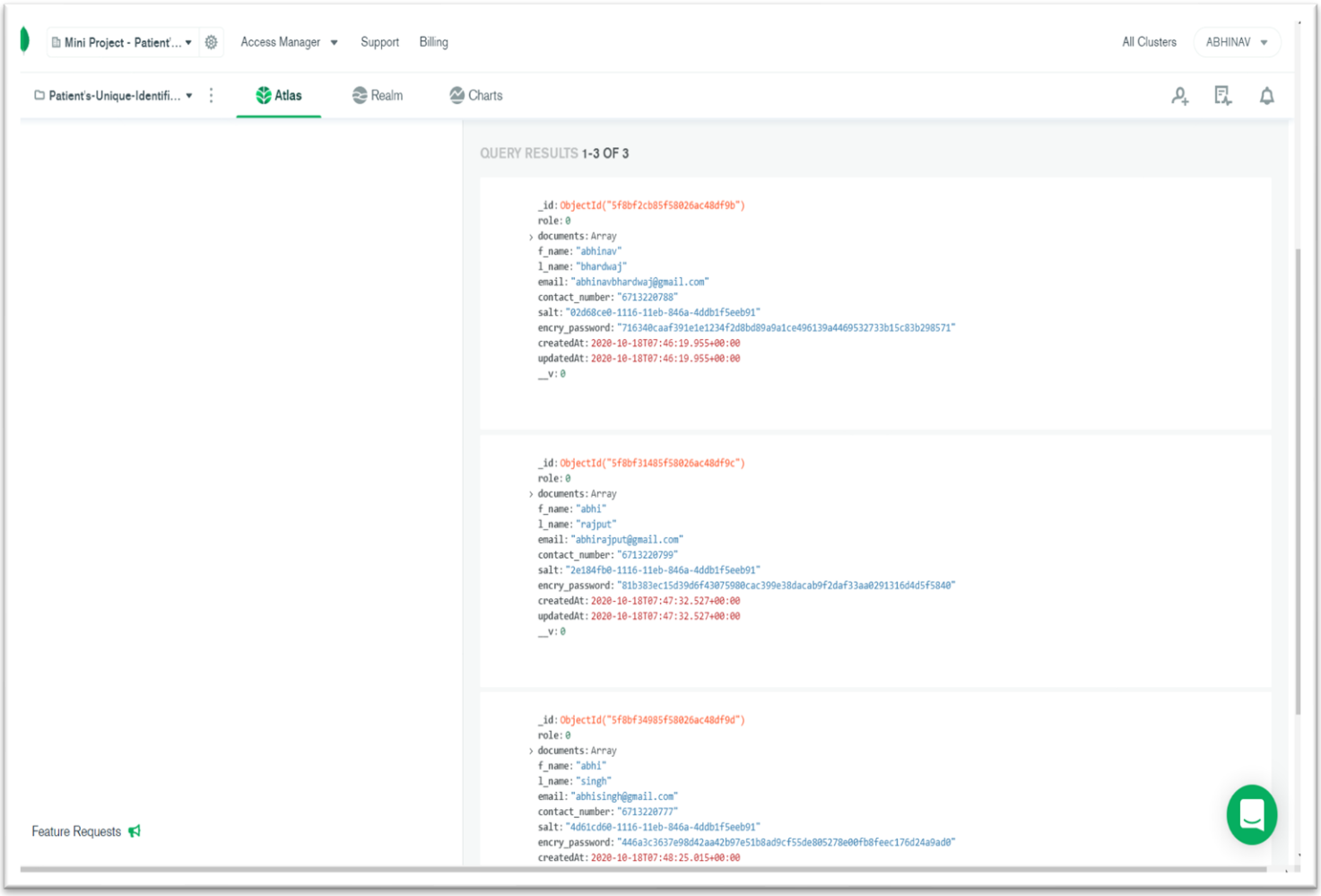
If tried to signup with duplicate data that is already in database, no entry in database



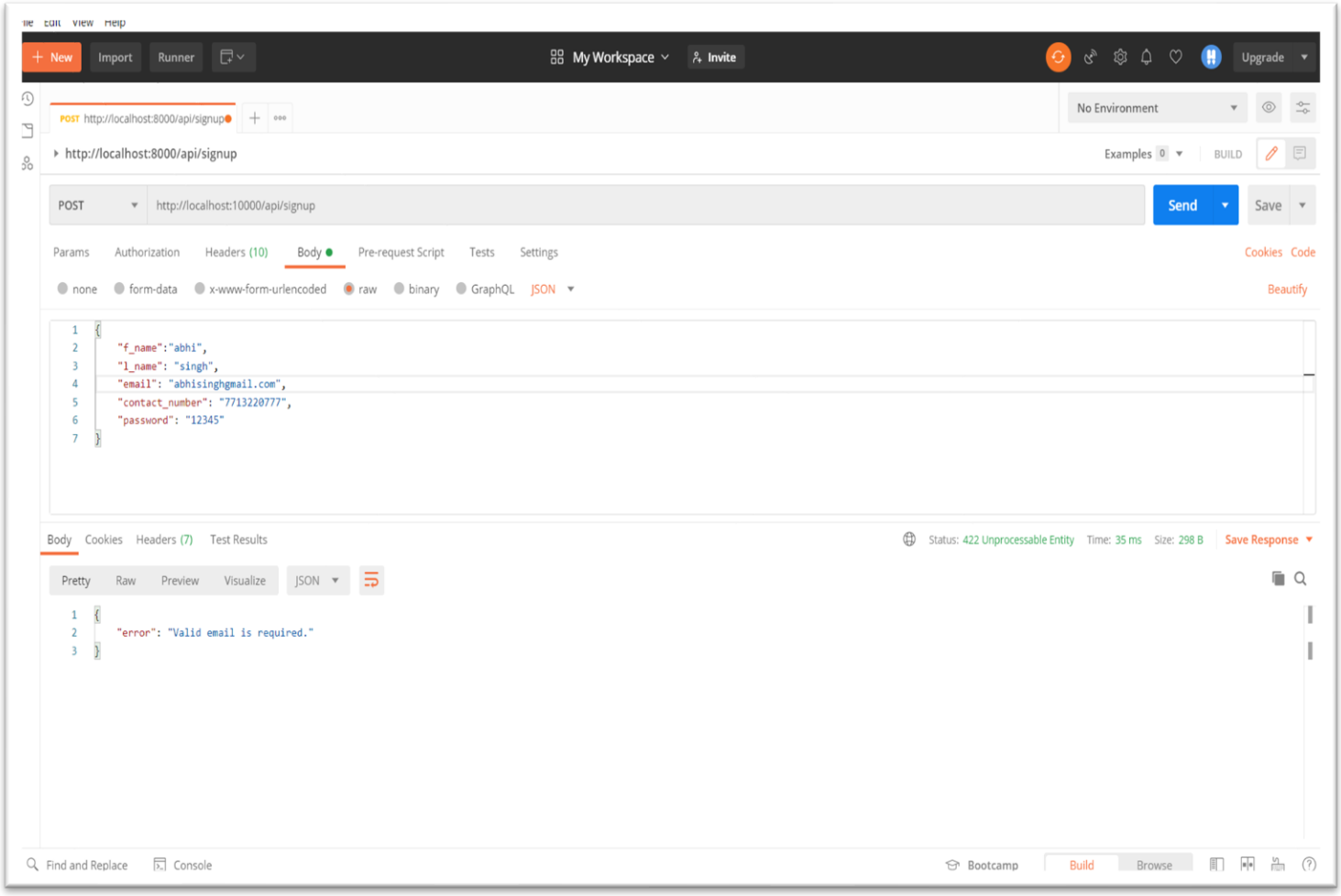


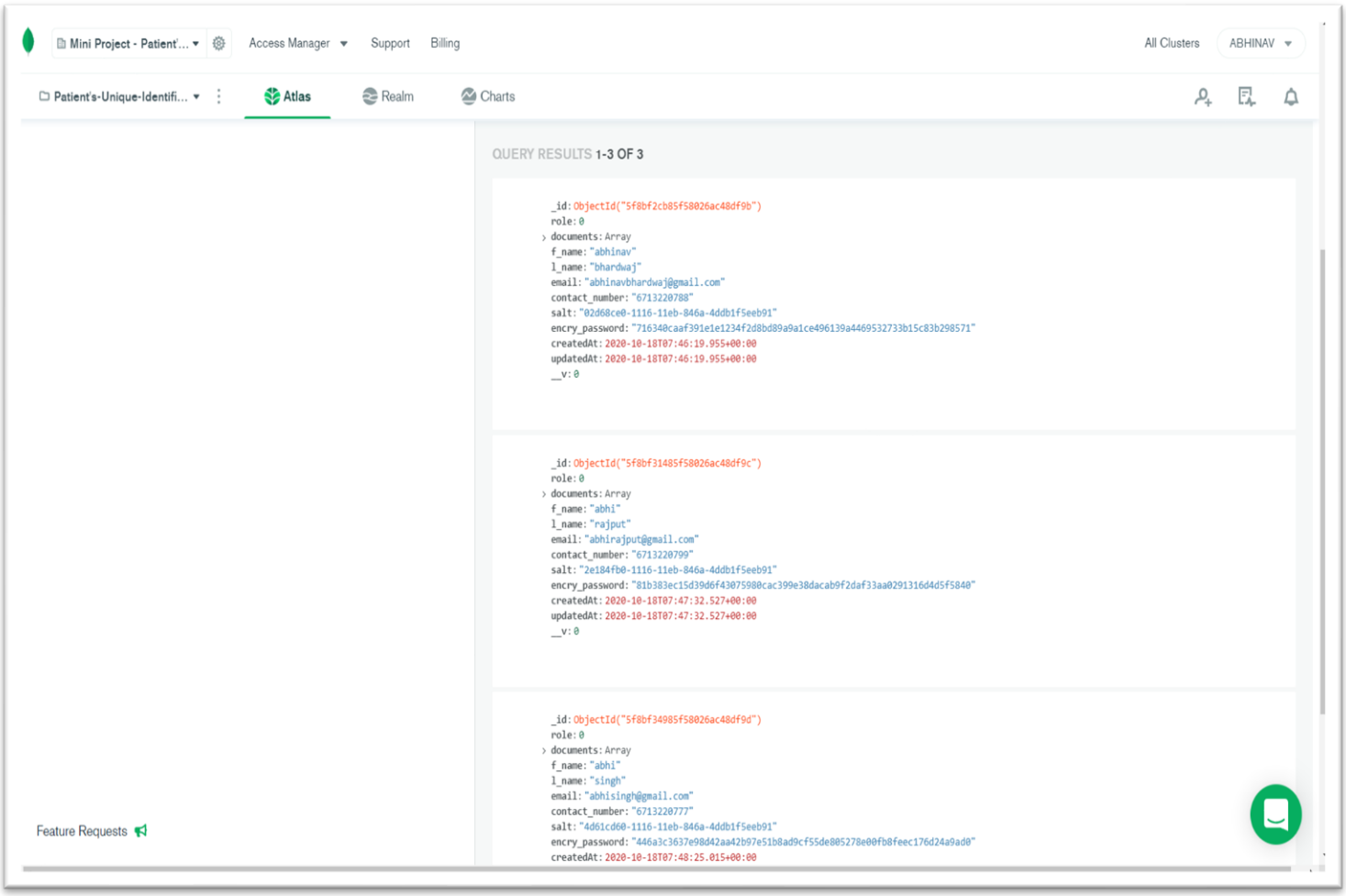
If tried to signup with invalid mobile number, no entry in database



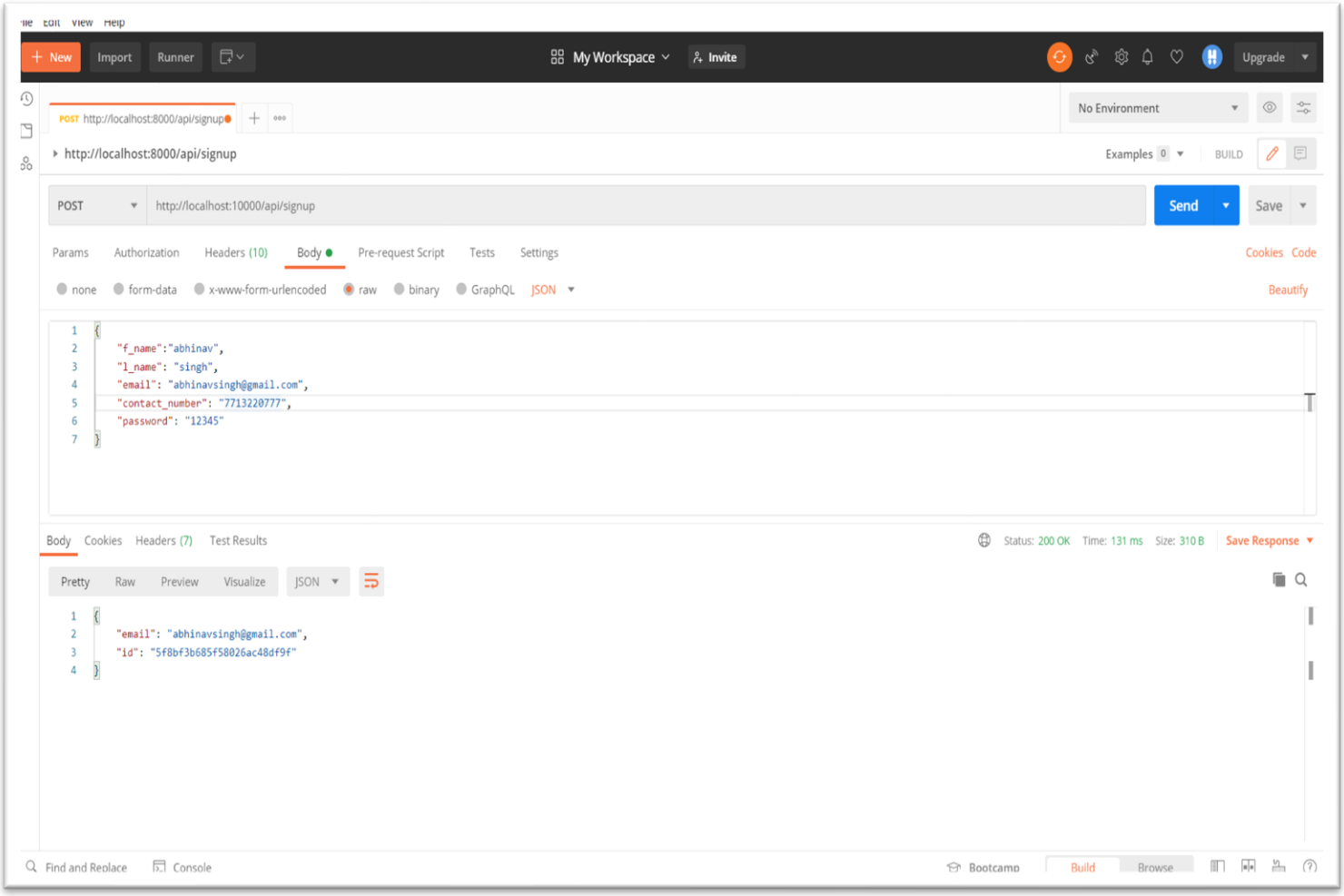


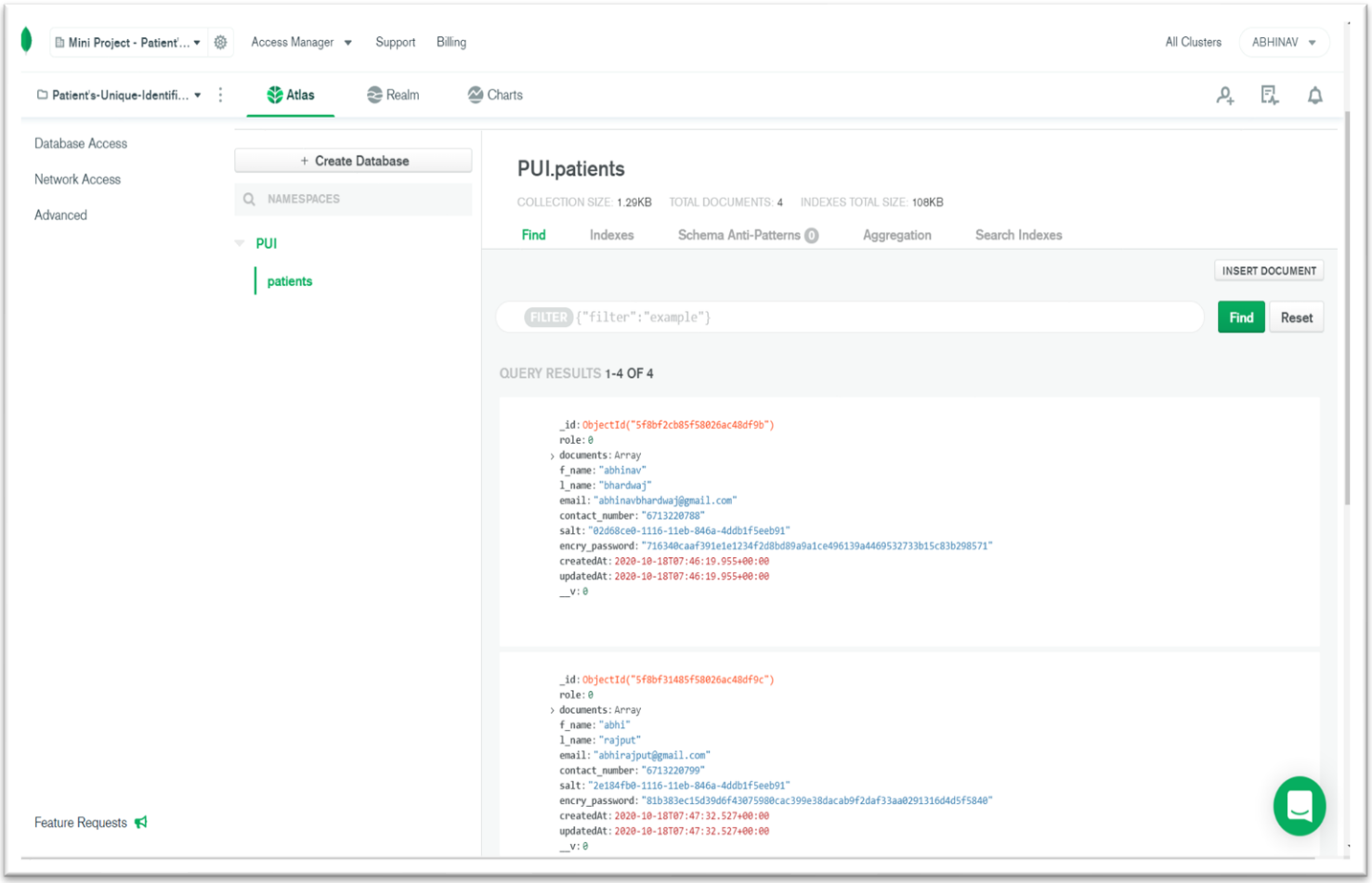
If tried to signup with invalid email address, no entry in database





And, again signup with proper details





Mini Project - Patient'... ▾ | Access Manager ▾ | Support | Billing | All Clusters | ABHINAV ▾

Patient's-Unique-Identifi... ▾ | Atlas | Realm | Charts


```
f_name: "abhi"
l_name: "rajput"
email: "abhirajput@gmail.com"
contact_number: "6713220799"
salt: "2e184fb0-1116-11eb-846a-4ddb1f5eeb91"
encry_password: "81b383ec15d39d6f43075980cac399e38dacab9f2daf33aa0291316d4d5f5840"
createdAt: 2020-10-18T07:47:32.527+00:00
updatedAt: 2020-10-18T07:47:32.527+00:00
__v: 0
```

```
_id: ObjectId("5f8bf34985f58026ac48df9d")
role: 0
> documents: Array
f_name: "abhi"
l_name: "singh"
email: "abhisingh@gmail.com"
contact_number: "6713220777"
salt: "4d61cd60-1116-11eb-846a-4ddb1f5eeb91"
encry_password: "446a3c3637e98d42aa42b97e51b8ad9cf55de805278e00fb8feec176d24a9ad0"
createdAt: 2020-10-18T07:48:25.015+00:00
updatedAt: 2020-10-18T07:48:25.015+00:00
__v: 0
```

```
_id: ObjectId("5f8bf3b685f58026ac48df9f")
role: 0
> documents: Array
f_name: "abhinav"
l_name: "singh"
email: "abhinavsingh@gmail.com"
contact_number: "7713220777"
salt: "8e663df0-1116-11eb-846a-4ddb1f5eeb91"
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__v: 0
```
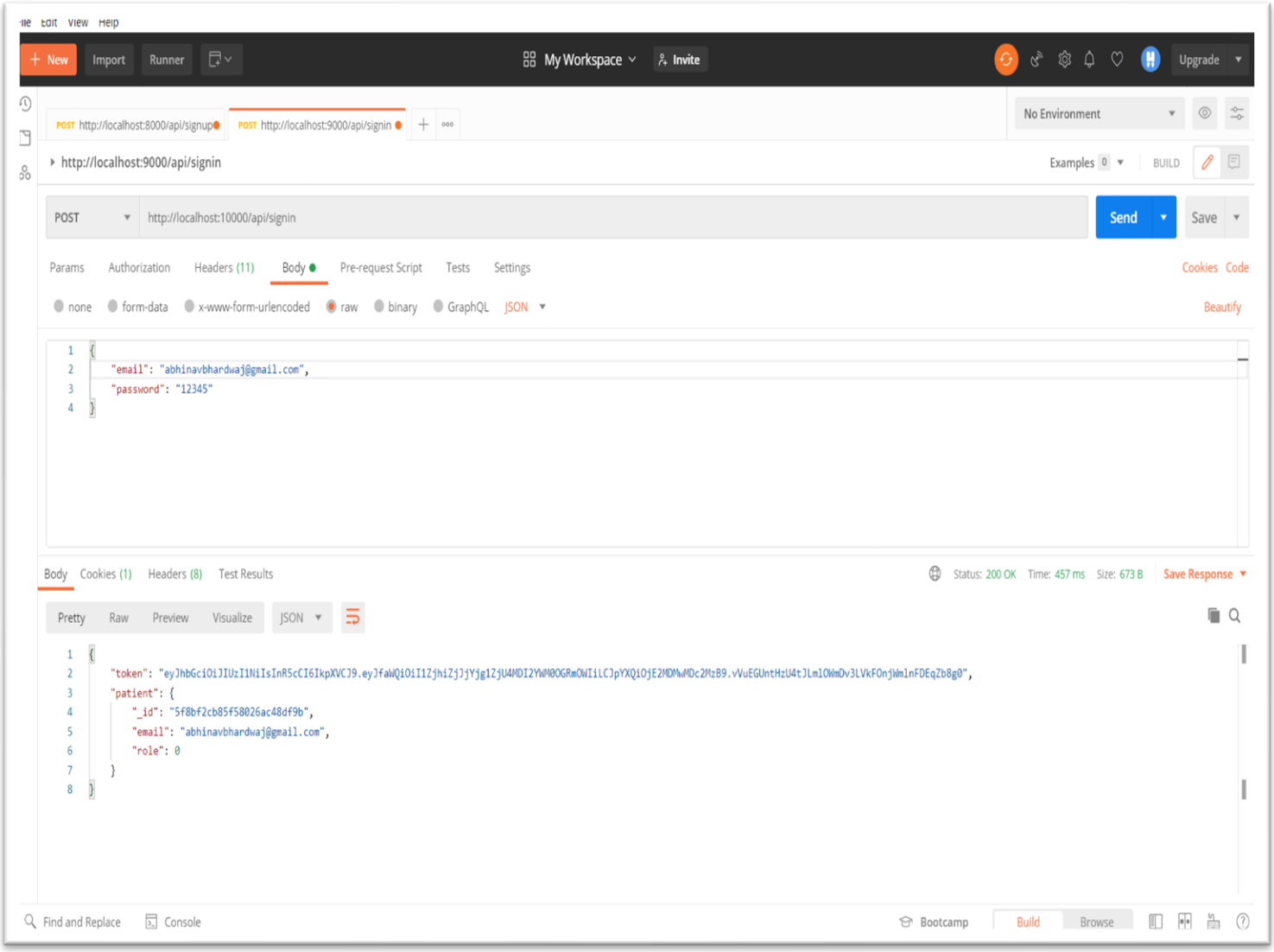
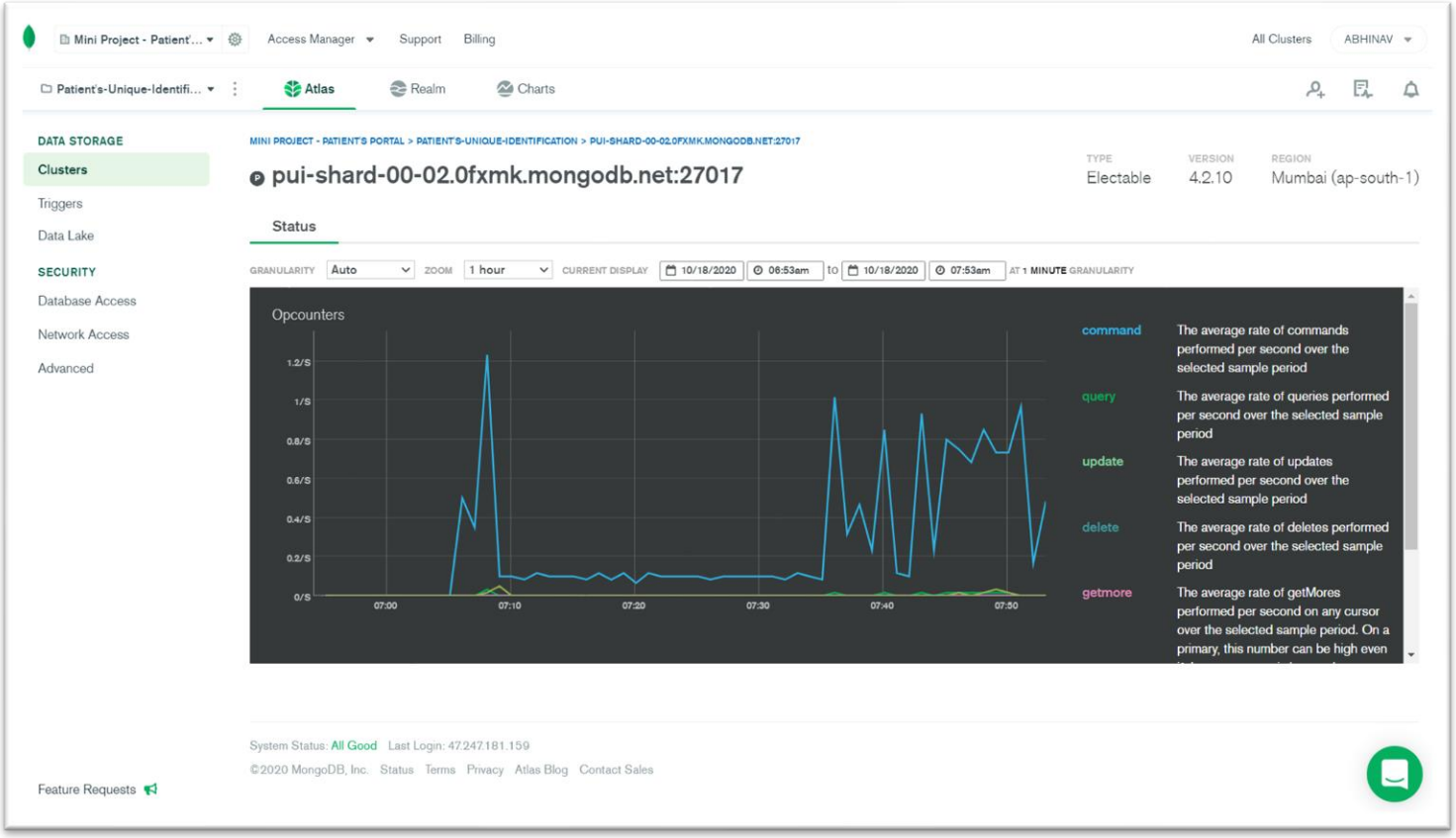


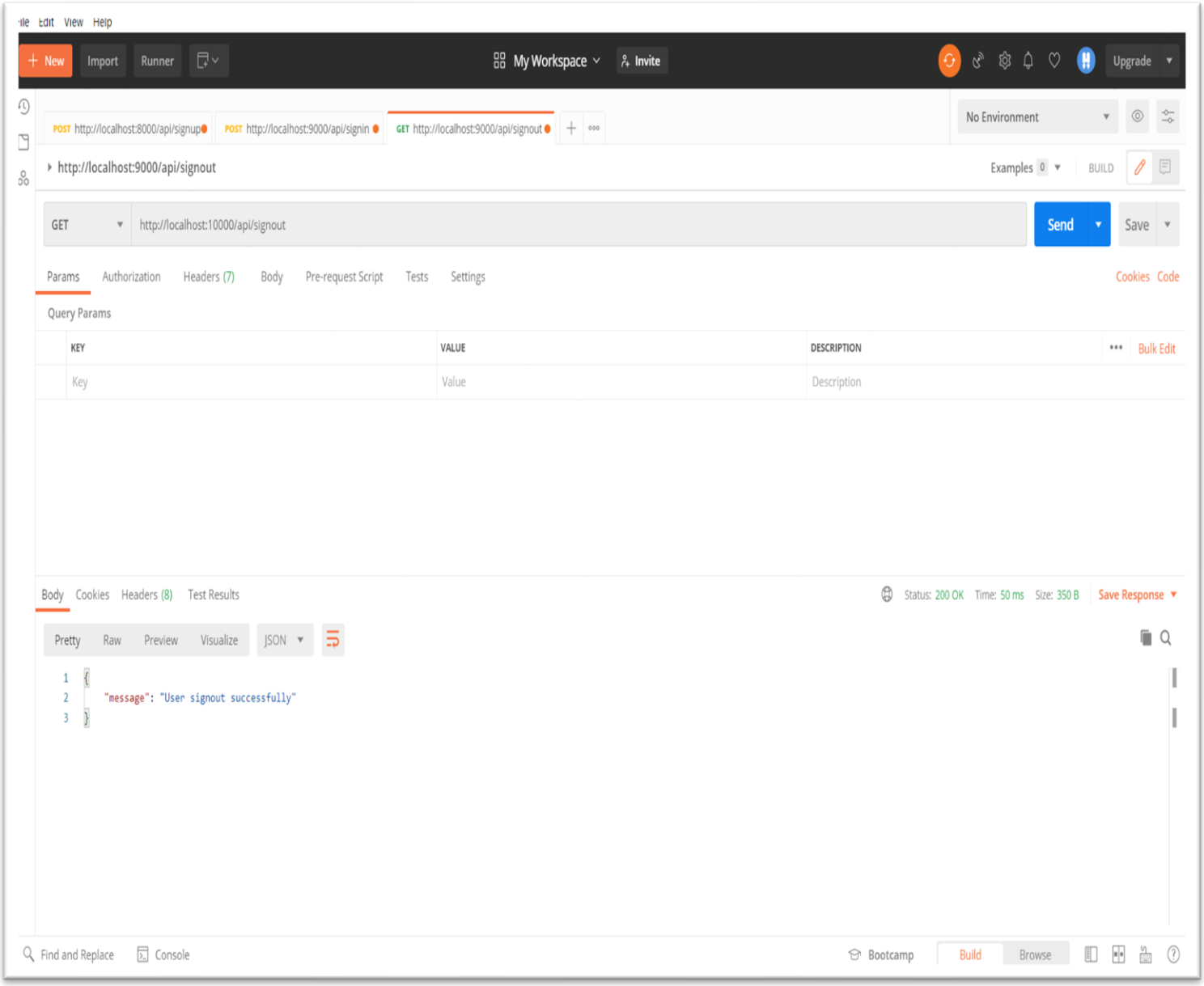
Feature Requests

Successful signed in with correct credentials





Signing out


File Edit View Help
New
Import
Runner
My Workspace
Invite
Upgrade
POST http://localhost:8000/api/signup
POST http://localhost:9000/api/signin
GET http://localhost:9000/api/signout
No Environment
http://localhost:9000/api/signout
Examples 0
BUILD
GET
http://localhost:10000/api/signout
Send
Save
Params
Authorization
Headers (7)
Body
Pre-request Script
Tests
Settings
Cookies
Code
Query Params
KEY
VALUE
DESCRIPTION
Bulk Edit
Key
Value
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Body
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Headers (8)
Test Results
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Time: 50 ms
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Save Response
Pretty
Raw
Preview
Visualize
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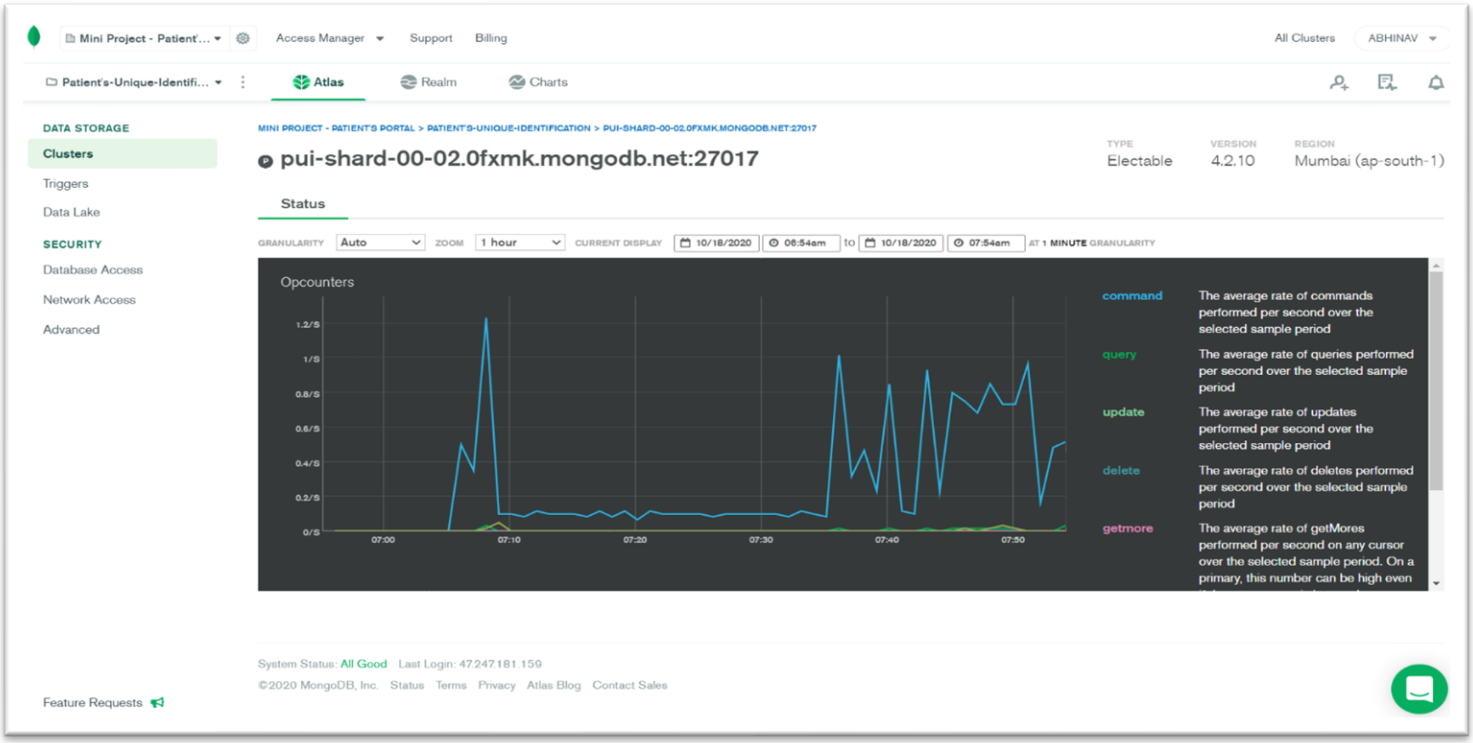
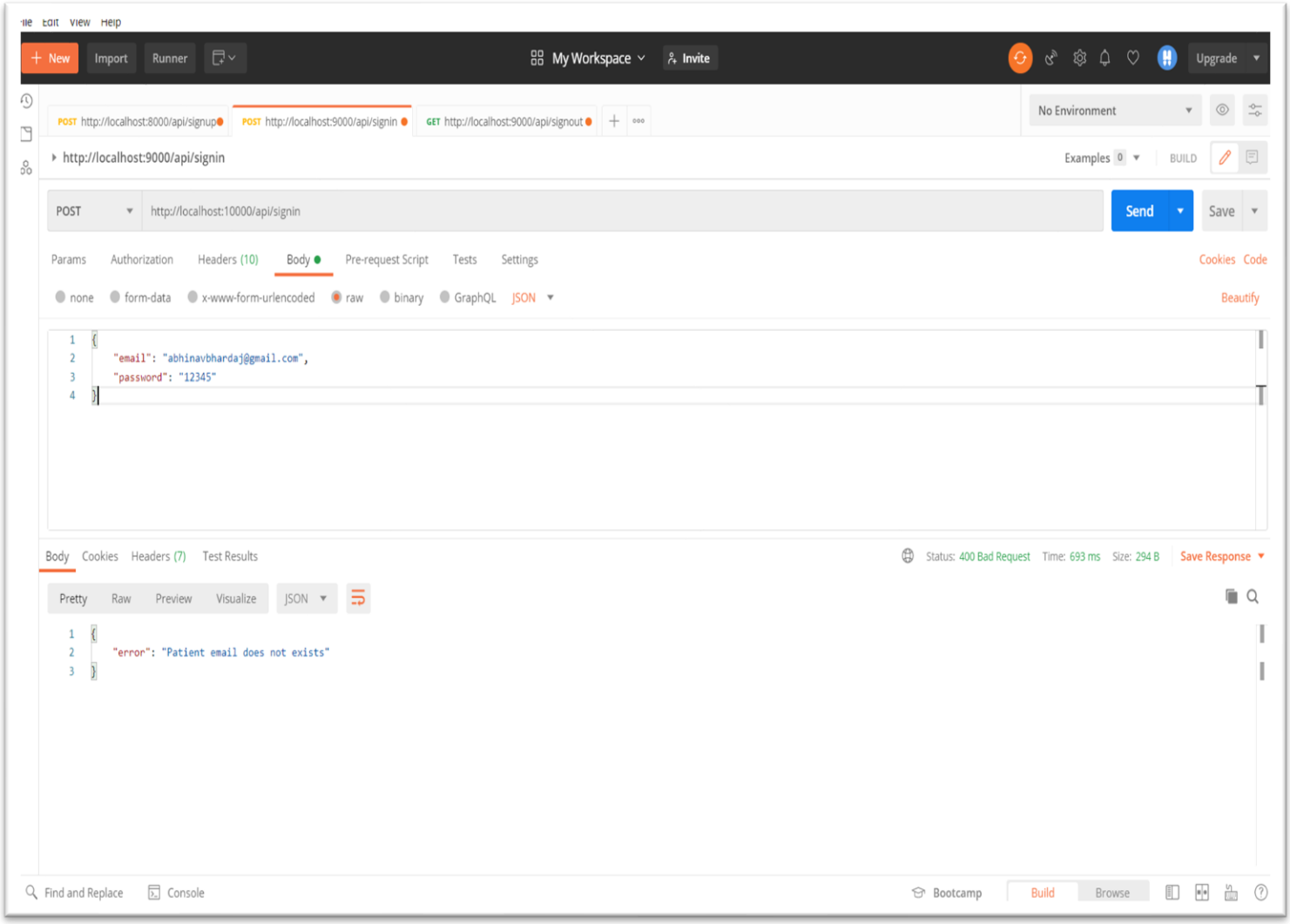
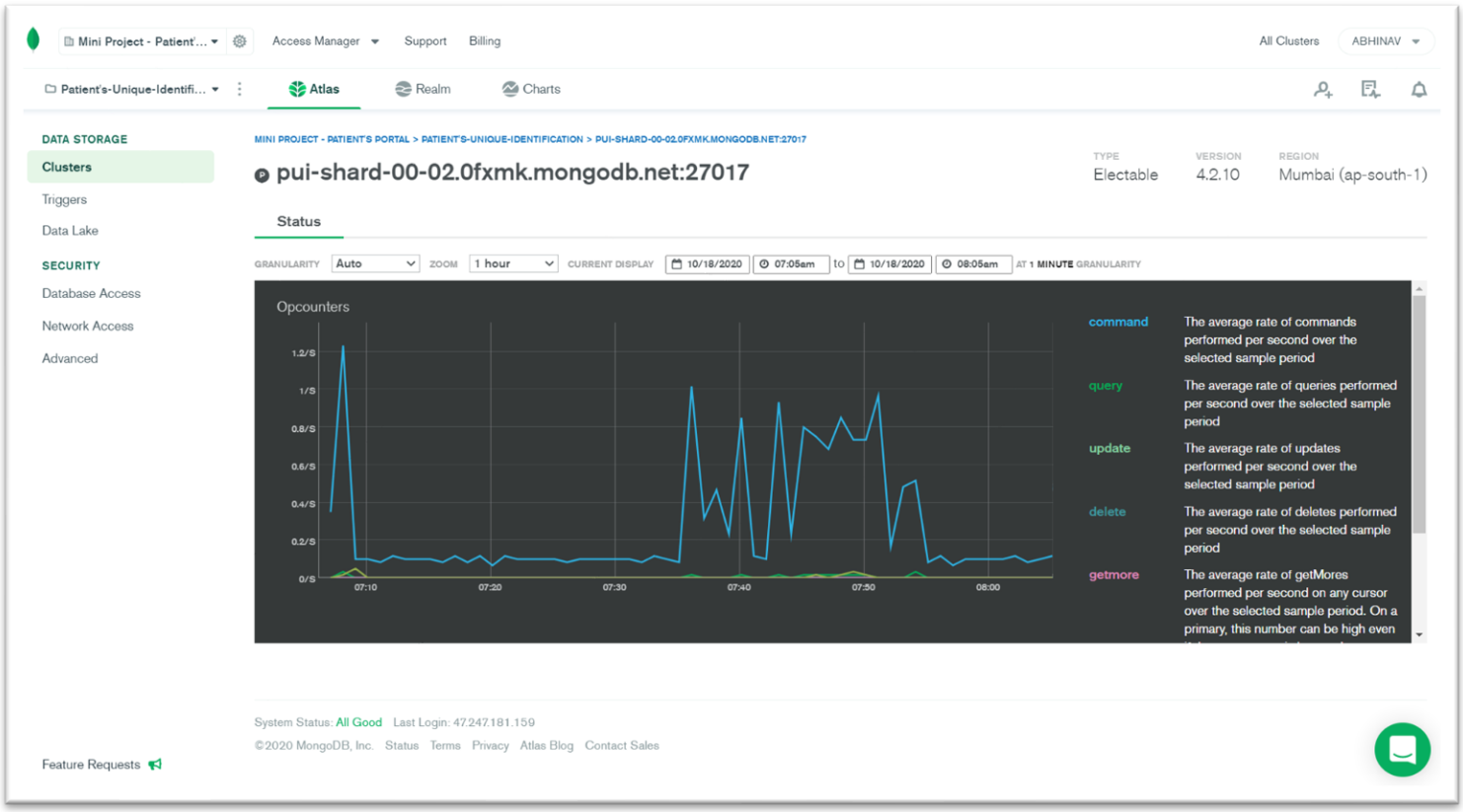
Find and Replace
Console
Bootcamp
Build
Browse


Mini Project - Patient'...
Access Manager
Support
Billing
All Clusters
ABHINAV
Patient's-Unique-Identifi...
Atlas
Realm
Charts
DATA STORAGE
Clusters
Triggers
Data Lake
SECURITY
Database Access
Network Access
Advanced
MINI PROJECT - PATIENT'S PORTAL > PATIENT'S-UNIQUE-IDENTIFICATION > PUI-SHARD-00-02.0FXMK.MONGODB.NET:27017
pui-shard-00-02.0fxmk.mongodb.net:27017
TYPE
Electable
VERSION
4.2.10
REGION
Mumbai (ap-south-1)
Status
GRANULARITY
Auto
ZOOM
1 hour
CURRENT DISPLAY
10/18/2020
06:54am
to
10/18/2020
07:54am
AT 1 MINUTE GRANULARITY
Opcounters
1.2/S
1/S
0.8/S
0.6/S
0.4/S
0.2/S
0/S
07:00
07:10
07:20
07:30
07:40
07:50
command
The average rate of commands performed per second over the selected sample period
query
The average rate of queries performed per second over the selected sample period
update
The average rate of updates performed per second over the selected sample period
delete
The average rate of deletes performed per second over the selected sample period
getmore
The average rate of getMores performed per second on any cursor over the selected sample period. On a primary, this number can be high even
System Status: All Good
Last Login: 47.247.181.159
©2020 MongoDB, Inc.
Status
Terms
Privacy
Atlas Blog
Contact Sales
Feature Requests

Trying to sign in with incorrect email address that does not exist in database





Trying to sign in with incorrect password