



Computer Engineering Department

Distributed and Operating Systems (1063645)

Project part #1: “Bazar.com: A Multi-tier Online Book Store”

Students' names:

Wa'ad Khalifa

Diala Nawwas

Instructor name:

Dr. Samer Arandi

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Catalog server output:

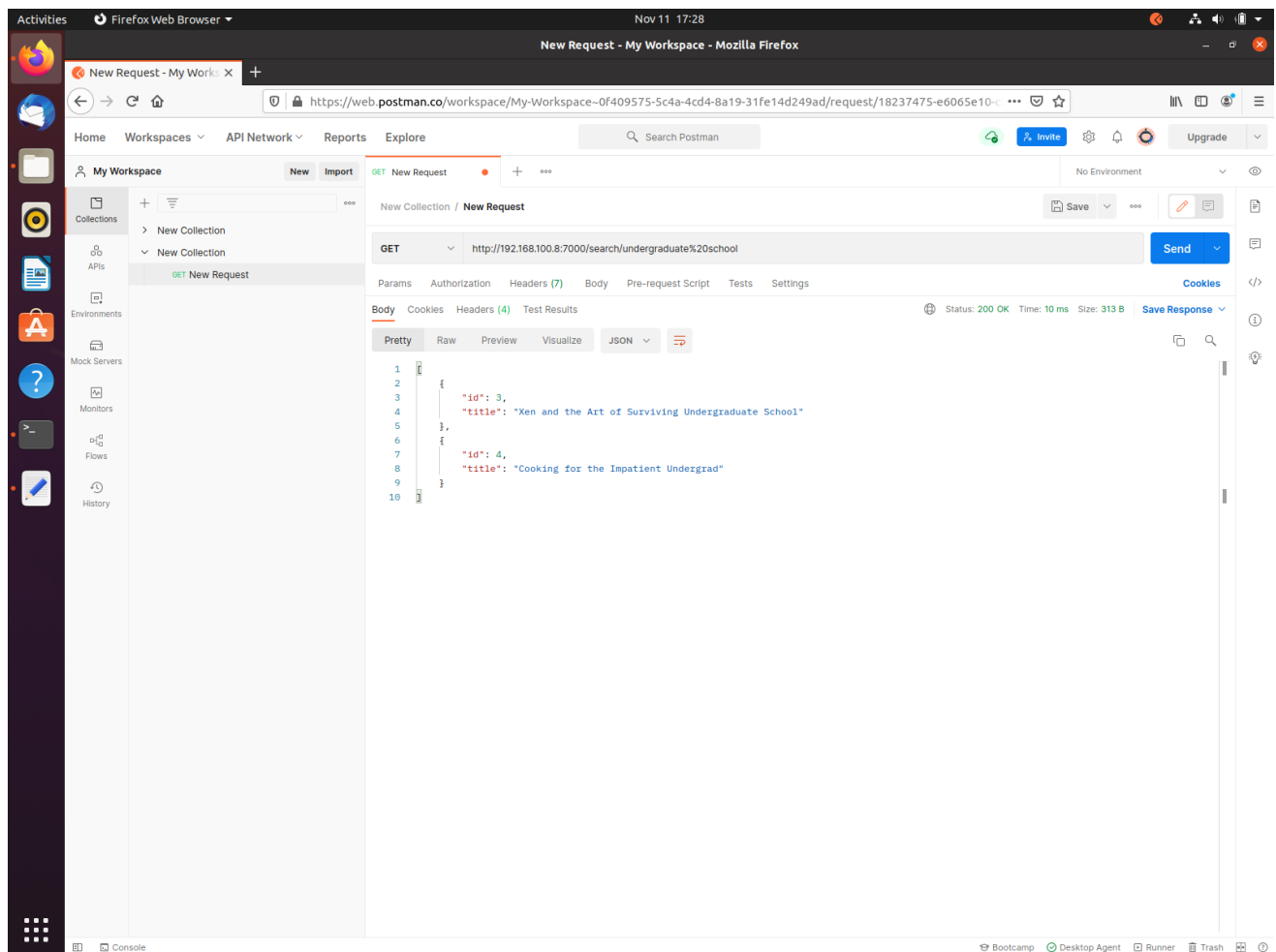
The catalog server maintains the catalog which consists of four entries. Each entry maintains the number of items in stock, cost of the book, quantity, and the topic of the book.

Catalog server receives GET or search requests from front-end server, and update request from order server.

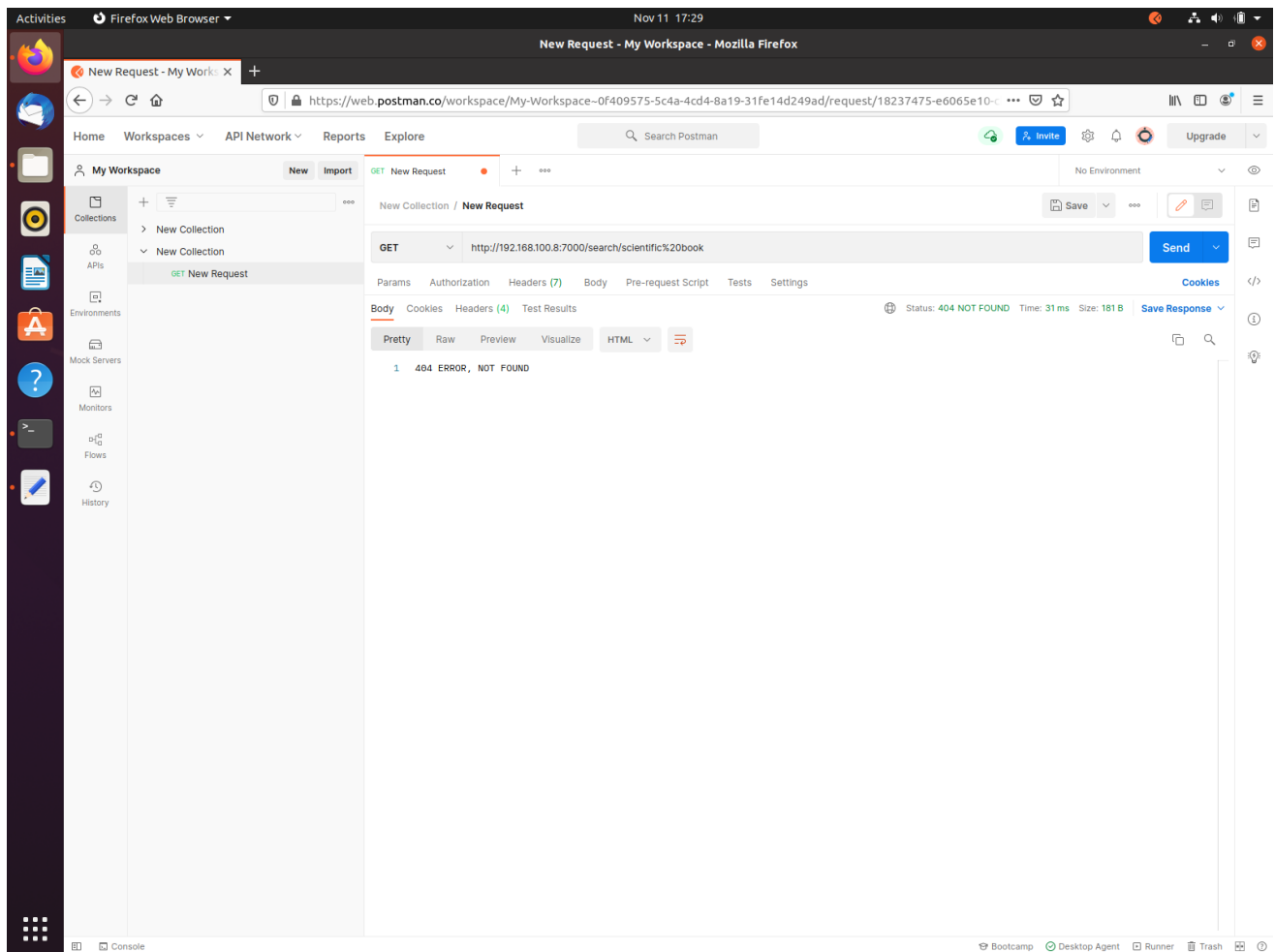
Operation:

- **Search: Search by ID and search by topic. (GET)**

Example of search by topic:

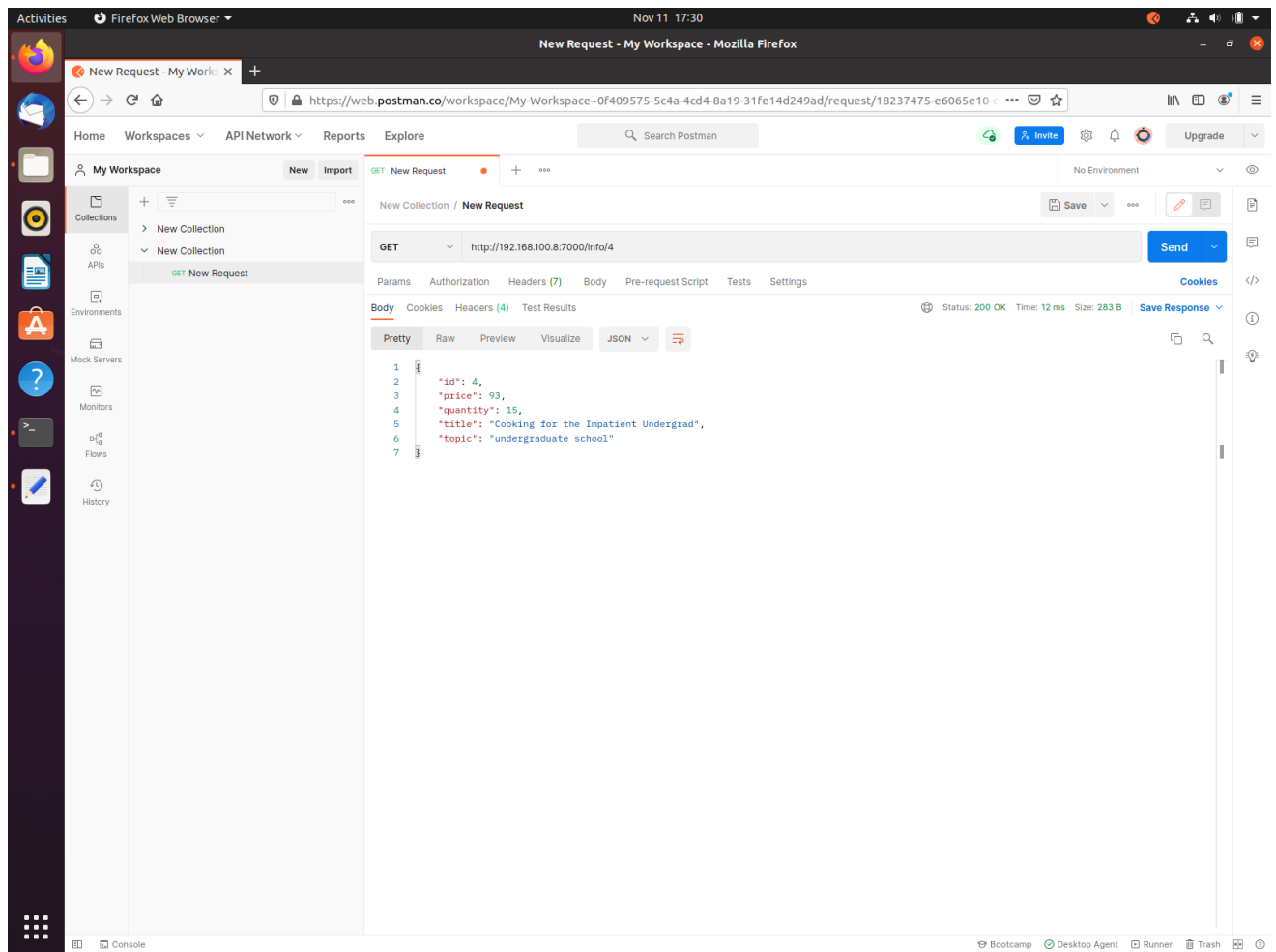


Successful request with status 200 ok.

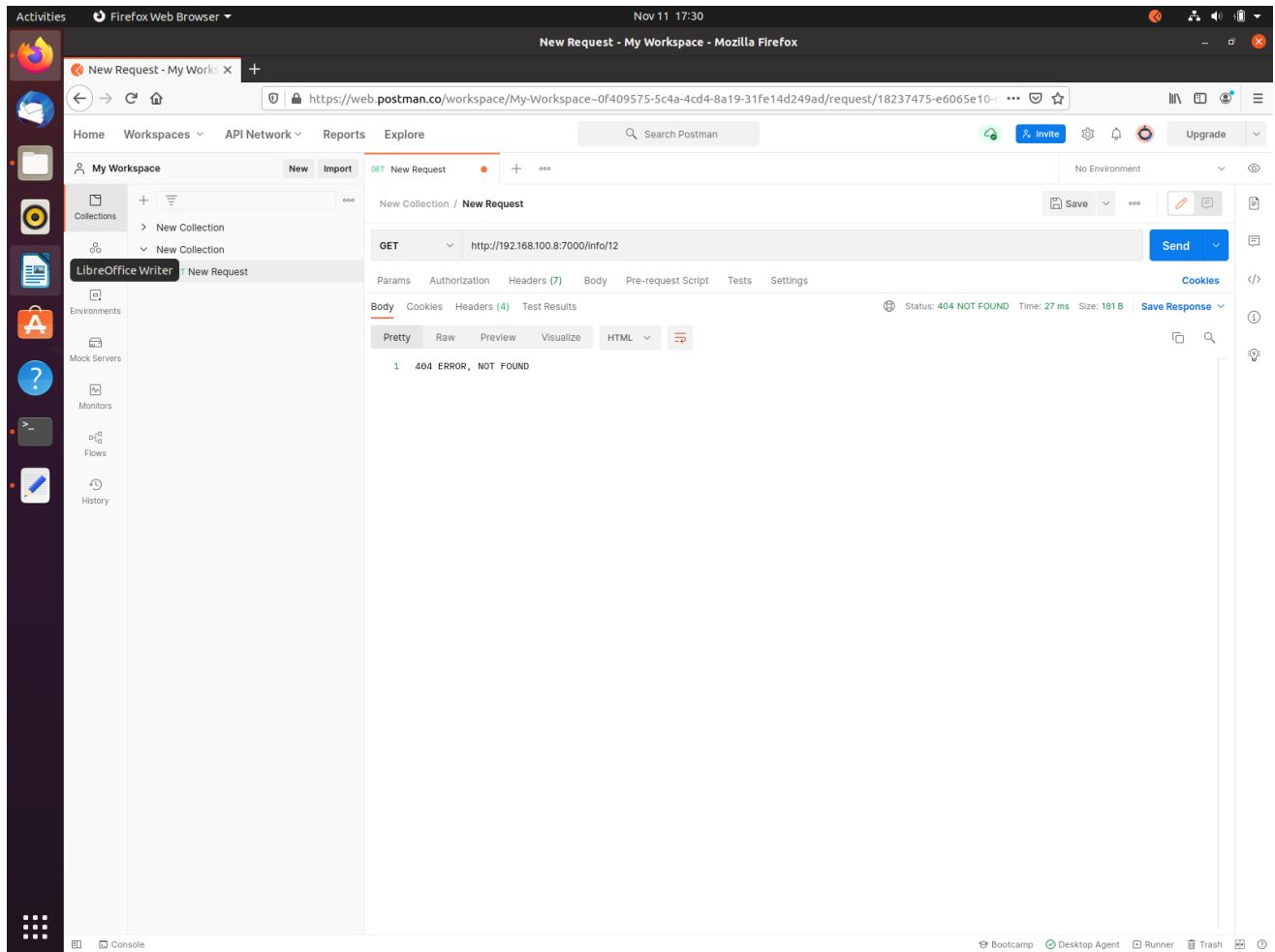


It failed because this book does not exist, status code 404.

Example of search by id:



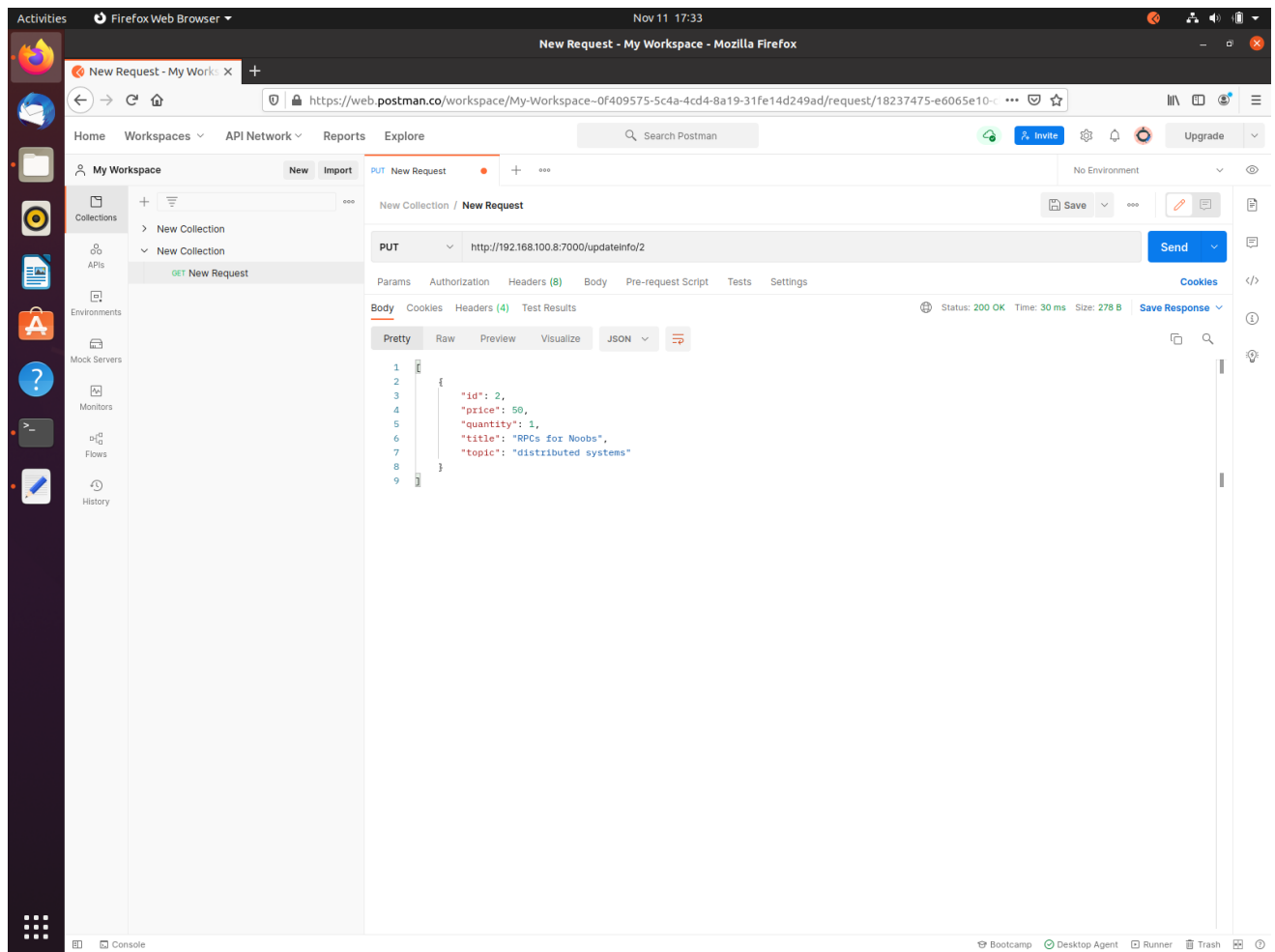
Successful request with status 200 ok.



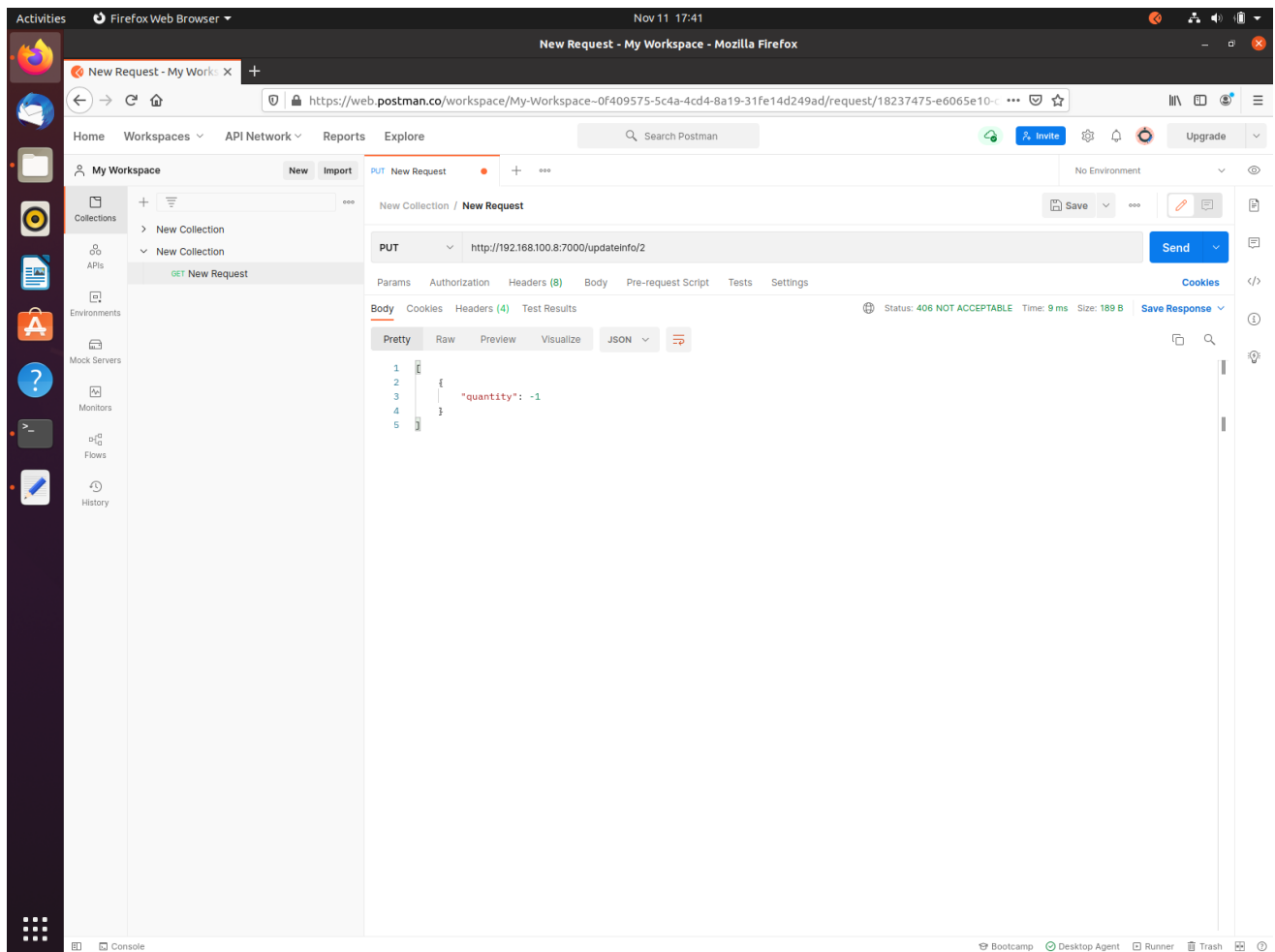
It's failed because this book does not exist, status code 404.

- **Update (PUT)**

Update the quantity of kind of books when receiving a request from the Order Server.



id =2 completed successfully, status code 200 OK.



Request failed, because the item is out of stock, -1 is not acceptable as a value of the quantity, status code 406.

Here is the JSON file of the four entries:

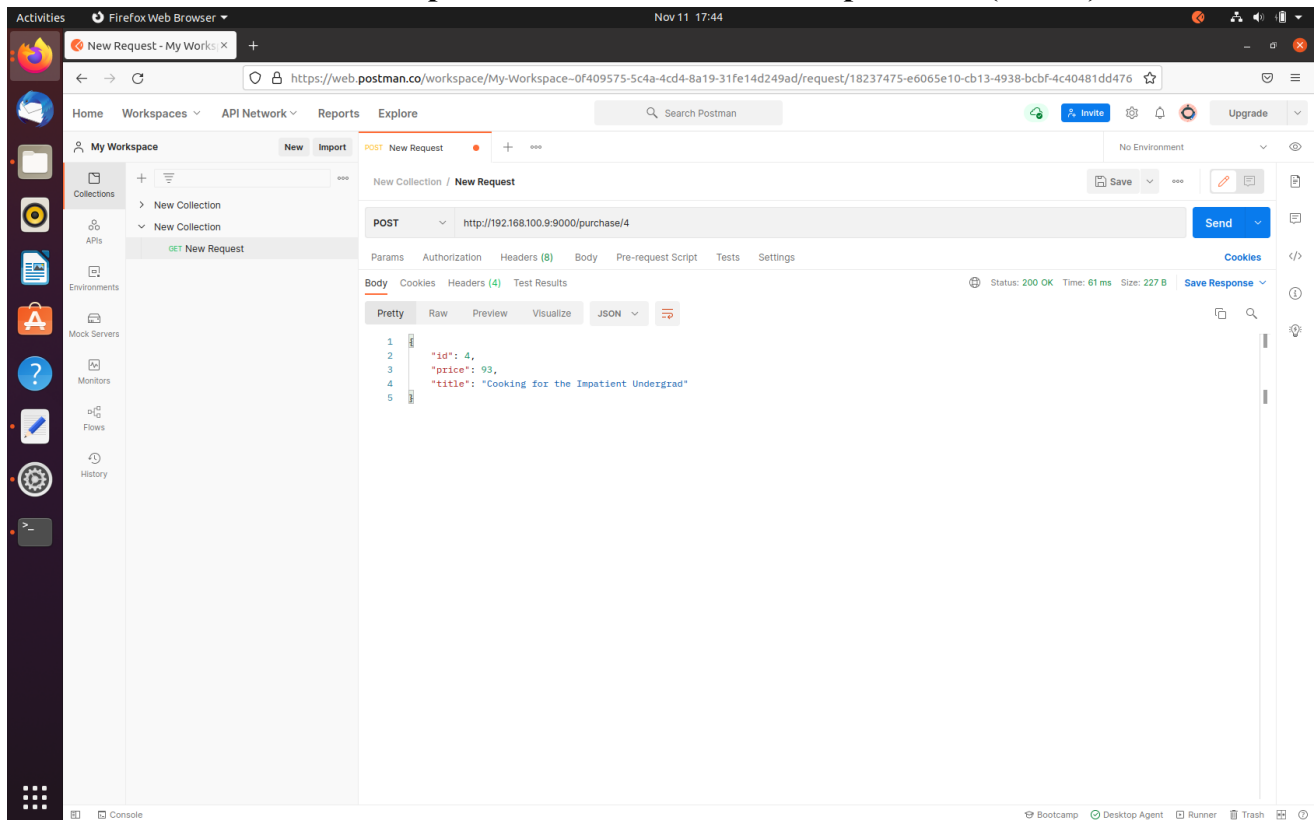
```
main.py x FourEntries.json
1 [{"books": [{"id": 1,
2     "title": "How to get a good grade in DOS in 40 minutes a day",
3     "price": 50,
4     "topic": "distributed systems",
5     "quantity": 9
6   },
7   {"id": 2,
8     "title": "RPCs for Noobs",
9     "price": 50,
10    "topic": "distributed systems",
11    "quantity": 1
12  },
13  {"id": 3,
14    "title": "Xen and the Art of Surviving Undergraduate School",
15    "price": 66,
16    "topic": "undergraduate school",
17    "quantity": 12
18  },
19  {"id": 4,
20    "title": "Cooking for the Impatient Undergrad",
21    "price": 93,
22    "topic": "undergraduate school",
23    "quantity": 14
24  }
25  ]}]
```

Order Server output :

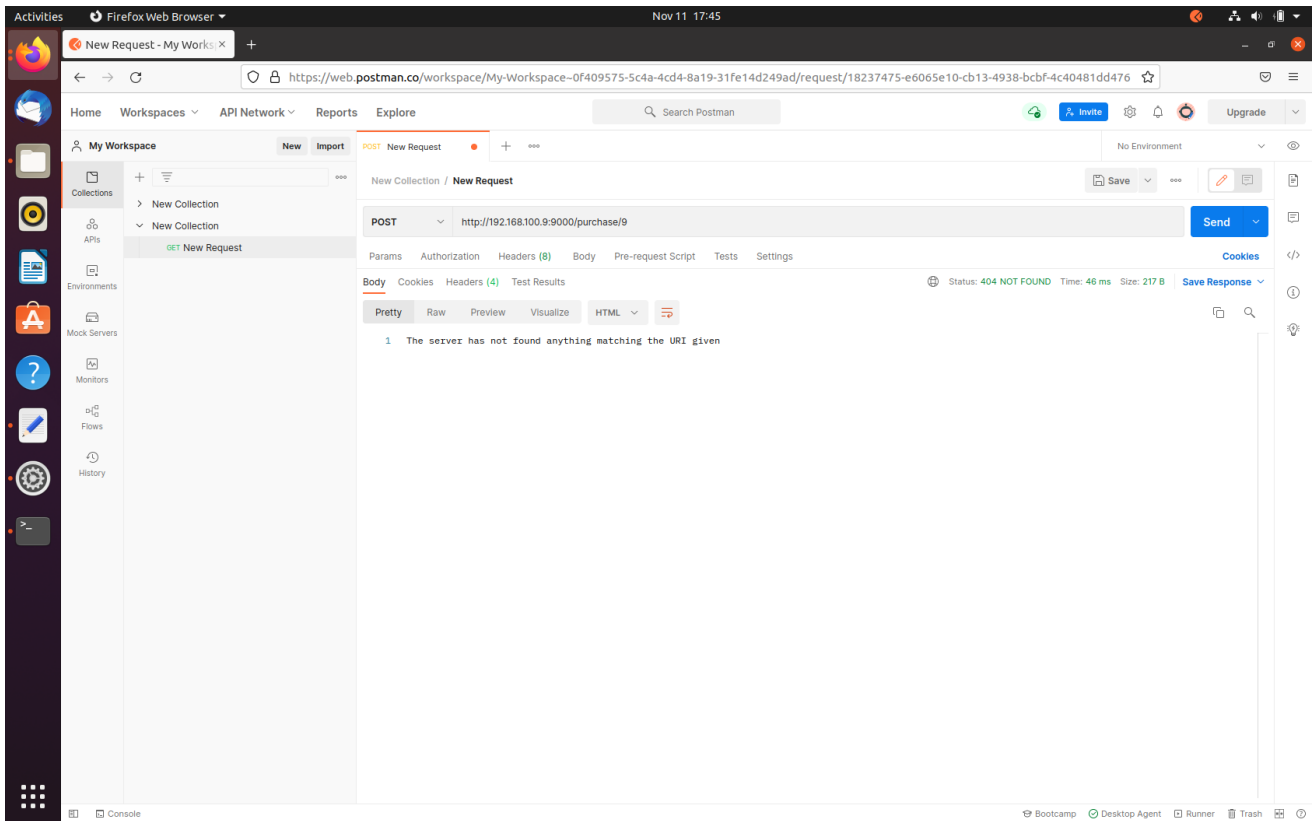
The order server maintains a list of all orders received for the books, it receives a purchase request from the front-end server. Upon receiving a purchase request, the order server must first verify that the item is in stock by querying the catalog server and then decrement the number of items in stock by one. The purchase request can fail if the item is out of stock.

Operation:

- Purchase, add order, specifies an item number for purchase (POST).



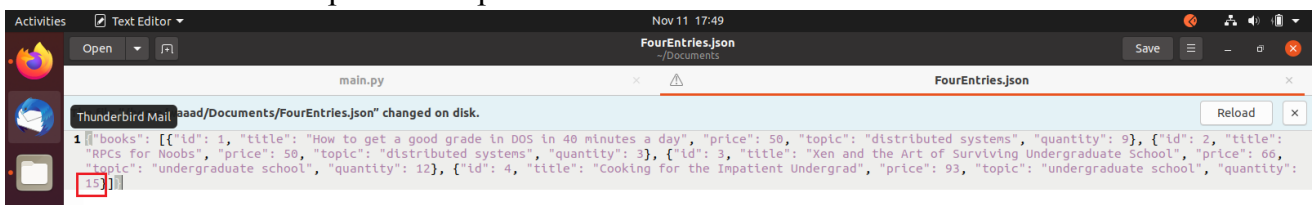
Request completed successfully, status code 200 OK.



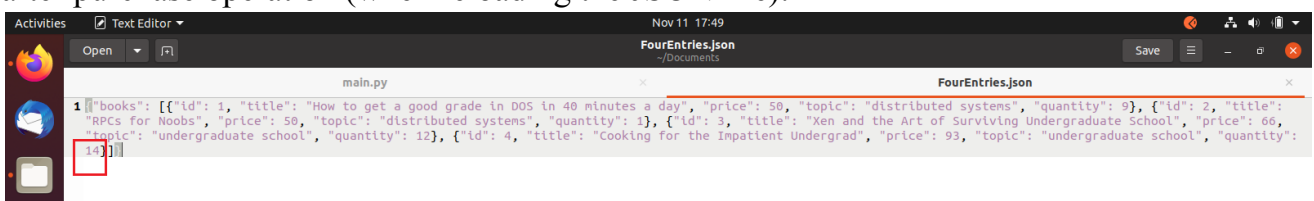
Request with id =9 has failed, because book with id 9 does not exist, status code 404.

Here is what happens when an order is done successfully, the operation will be done and the quantity of the kind of books will decrease.

The four entries before purchase operation:



after purchase operation (when reloading the JSON file):



and here is the list of orders file, it contains information about the required book:

main.py × ListOfOrders.json × main ▾

```
1 [{"id": 4, "price": 93, "title": "Cooking for the Impatient Undergrad"},
2   {"id": 2, "price": 50, "title": "RPCs for Noobs"},
3   {"id": 3, "price": 66, "title": "Xen and the Art of Surviving Undergraduate School"},
4   {"id": 4, "price": 93, "title": "Cooking for the Impatient Undergrad"}]
```