

All experiments were carried out on edlab servers.

1. Working cache get operations – Visible in the left client where cache gets are logged out.

```
➤ #user@DESKTOP-NFUMQ63 -
➤ Serving Flask app "frontendServer" (lazy loading)
➤ Environment: production
➤ WARNING: This is a development server. Do not use it in a production deployment.
➤ Use a production WSGI server instead.
➤ Debug mode: off
lookup request
Cache get!
Got val from cache : 0
Client looking up: book#1
Cache get!
Client searching: graduate%20school
lookup request
1
Cache get!
Got val from cache : {"items":[[1,"How to get a good grade in 677 in 20 minutes a day","distributed s
ystems",1000,100]]}
lookup request
2
Cache get!
Got val from cache : 0
Client looking up: book#2
lookup request
2
Cache get!
Got val from cache : {"items":[[2,"RPCs for Dummies","distributed systems",1000,1000]]}

➤ #user@DESKTOP-NFUMQ63 -
Please input the ID of the book you want to if you don't know the id please search for the category: 1
ID Book Name Category Stock Price
1 How to get a good grade in 677 in 20 minutes a day distributed systems 1000 100
Enter 1 for search
Enter 2 for lookup
Enter 3 to buy a book
Enter your choice: 2
Please input the ID of the book you want to if you don't know the id please search for the category: 2
ID Book Name Category Stock Price
2 RPCs for Dummies distributed systems 1000 1000
Enter 1 for search
Enter 2 for lookup
Enter 3 to buy a book
Enter your choice: 2
Please input the ID of the book you want to if you don't know the id please search for the category: 2
ID Book Name Category Stock Price
2 RPCs for Dummies distributed systems 1000 1000
Enter 1 for search
Enter 2 for lookup
Enter 3 to buy a book
Enter your choice:
```

2. Cache erase – Working cache erase where keys are removed for each buy operation. If the key doesn't exist the request is ignored.

```
shaurp@DESKTOP-NLFUM00: ~  
$ python3 server.py  
Enter 1 for search  
Enter 2 for lookup  
Enter 3 to buy a book  
Enter your choice: 31  
Wrong choice entered!  
Enter 1 for search  
Enter 2 for lookup  
Enter 3 to buy a book  
Enter your choice: 3  
Please input the ID of the book that you want to buy followed by the quantity if you want to buy more  
than 1 book (eg. - 1 10): 1  
Bought book: How to get a good grade in 677 in 20 minutes a day with quantity 1!  
Enter 1 for search  
Enter 2 for lookup  
Enter 3 to buy a book  
Enter your choice: 3  
Please input the ID of the book that you want to buy followed by the quantity if you want to buy more  
than 1 book (eg. - 1 10): 2  
Bought book: RPCs for Dummies with quantity 1!  
Enter 1 for search  
Enter 2 for lookup  
Enter 3 to buy a book  
Enter your choice:
```

- Cache get after erase – Cache misses happen after the keys are deleted and the value needs to be obtained from the backend service.

```
tharp@DESKTOP-NLFUM00: ~$
Got val from cache : ["Items":[{"RPCs for Dummies","distributed systems",1000,1000}]]
Client buying: book#1 with quantity: 1
Remove request key is: 1
Remove request for key: 1
Calling cache delete for 1
Removing key: 1
Remove request key is: 1
Remove request for key: 1
Calling cache delete for 1
Client buying: book#2 with quantity: 1
Remove request key is: 2
Remove request for key: 2
Calling cache delete for 2
Removing key: 2
Remove request key is: 2
Remove request for key: 2
Calling cache delete for 2
Lookup request
Cache get!
Got val from cache : 0
Client looking up: book#1
Lookup request
2
Cache get!
Got val from cache : 0
Client looking up: book#2
```