

# DOS

Ola Awwad  
Takreem Abdullah

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## 1 project link on Github

<https://github.com/oulaawwad/https—github.com-oulaawwad-Lab2>

## 2 Output

In our system i used lumen framework using php language on ubuntu operating system using three virtual machines.

but Unfortunately, we were not able to take a result for the solution because the virtual machine is not working and XAMPP On my PC have problem and turn off periodically .

We implement three services as wanted

- Front-end service
- Order service
- Catalog service

and make 2 copies from order and catalog for replication.

There are 3 operations and i will explain each one and how to works:

search

First, after request the search operation, we search in cache if it there or not, if yes, get it from cache, if not send the query from front-end controller service to the the catalog service then the output will shown in the browser page with the book information : name and id of all books.

lookup

First, after request the lookup operation, we search in cache if it there or not, if yes, get it from cache, if not send the query from front-end controller service with the id of book to the the catalog service then the output will shown in the browser page with the book information : name and id of the specific books.

buy

First, after request the buy operation, we search in cache if it there or not, if yes, get it from cache, if not send the query from front-end service with the id of book to the the order service then check if the book is available in cataloge service via sending 2 queries. the first is check if there is copies from this book, if not the second query will paused. otherwise the second query will send to stressing the success of process.

also we get the total time needed for these operation via end time - start time in cache.

end time - start time if its not in cache.

for replication we use round robin load balancing:

Round robin load balancing is a simple way to distribute client requests across a group of servers. A client request is forwarded to each server in turn. The algorithm instructs the load balancer to go back to the top of the list and repeats again.

we implement this through give the first server of cataloge boolean flag and store it in file if its run on the first we save false, the second then save false and so on for the order service.