

Bazar.com

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Architecture:

1. Catalog server: this server has two types of operations: update and query, update to quantity and update to cost of book, query on info and search, and has database to store books.
2. Order server: this server has one operation to purchase a book, but first make query to Catalog server to check if the book available and then make update to Catalog server to decrease quantity of this book by 1.
3. Frontend server: this is interface or middleware for website to receive requests from users and then send to servers and return responses.

Program Design:

We use lumen framework and sqlite database.

We build 3 Servers in lumen, first to Catalog server, it has sqlite database to store info of books and make 3 functions for info,search,update.

Info function:

It receives id and then query on book table using ORM in lumen framework, and return result of query as json response.

Search function:

It receives topic parameter and then query on topic in book table and return results that has topic parameter.

Update function:

It receives three parameters (id, type and value), and based on type will update cost or quantity of book has id parameter.

And in Order server, it has just a one function **purchase** has id parameter and then send request api to catalog server to info method then from result check if quantity grater than zero, and then send another request api to update method.

And frontend server, it has 3 functions to do all operation in website (info , search , purchase), it just send request api to method it requested about it by user.

Connection

After build 3 services we upload those services to 3 containers and put in each service docker file to run lumen server and copy this service from host to container.

To make communications between services we build a composer file to connect all services to same network and each service has a certain port.

And to run all services just write this command:

docker-compose up -d

Routes

URI	Method	Description
CatalogServer/info/{id}	get	This return all info about book by book id
CatalogServer/search/{topic}	get	This return titles of topics
CatalogServer/update/{id}/{type}/{value}	put	To update cost/quantity
OrderServer/purchase/{id}	put	To purchase book
/info/{id}	get	Frontend – get info
/search/{topic}	get	Frontend – search
/purchase/{id}	put	Frontend – purchase

