DISTRIBUTED OPERATING SYSTEMS

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The Design

In this homework, the laravel framework was used to build all the servers (order servers, catalog servers and the front-end server). Laravel was used since it's easy to use. It has a huge variance of plugins that can be used during development. One plugin used in this homework is Guzzle, which is a plugin to help send HTTP requests between servers easily. Also, the database used was just a simple text file (.txt), which was stored in the catalog server.

Example:

At first, a simple "lookup" request was sent to the front-end server, the request would be redirected to one of the catalog servers and will get the following response:

How to run the servers:

Installing Laravel:-

you need to first install the Composer which you can get on https://getcomposer.org/ . After that, open command prompt on

Windows (or the terminal on Linux) and type in the following command:

```
composer global require laravel/installer
```

After Laravel has been installed, we need to install the Guzzle plugin which we mentioned earlier. Navigate to the server folder on each machine and type in the command

```
composer require guzzlehttp/guzzle
```

Now all we need is to run the servers. For running the servers, navigate to the

server folder on each machine and type the following command

```
    php artisan serve
```

However, for the backend servers, you need to assign custom IPs and Ports for them to work, and to do that, simply add two parameters to the previous command:

```
php artisan serve --host *serverIPAddress* --port *serverPort*
```

To run each server on different ports, by running the following commands:

Running the front server: **php artisan serve —port=8000**

Running the order server: **php artisan serve —port=6060**

Running the catalog server: **php artisan serve —port=3030**

And now, you have a fully functioning system that will work perfectly.