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## DOS Project Part-1

Preparing By

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## ❖ The services in our project:

- 1) Front end service
- 2) Order service
- 3) Catalog service

### 1)Front-end service:

There are three operations in this server

- **1-Search:** the request is sent to catalog server then catalog return the item  
`http.get(http://catalog:4000/search/ Distributed systems )`
- **2-Info:** the request is sent to catalog server then catalog return the info  
`http.get(http://catalog:4000/info/1 )`
- **3-Purchase:** The purchase order is sent to the order server  
`app.post(/purchase/:item_number/1)`

### 2)Order service:

Receives requests from the front-end and transfers them to catalog server When it is sent to the catalog, the quantity of stock checked and modified.

`http.get(http://catalog:4000/info/1)`

`axios.put('http://catalog:4000/update/1)`

### 3)Catalog service:

It receives requests from the order server, adjusts the quantity, sends the response to the order, and also sends the response to search and info requests.

## ❖ Running the project:

- Building docker image: `'docker build -t ubuntu-nodejs-sqlite3 .'`
- Creating common network to allow services to communicate: `'docker network create project-network'`
- Running docker container for frontend server at port 3000 and hostname=frontend: `'docker run --network=project-network --name=frontend -p 3000:3000 -it -v`

C:\Users\AHMAD\Desktop\level4\DOS\Bazar.com\src\frontend:/home ubuntu-nodejs-sqlite3'

- Running docker container for catalog server at port 4000 and hostname=catalog: 'docker run --network=project-network --name=catalog -p 4000:4000 -it -v C:\Users\AHMAD\Desktop\level4\DOS\Bazar.com\src\catalog:/home ubuntu-nodejs-sqlite3'
- Running docker container for order server at port 5000 and hostname=order : 'docker run --network=project-network --name=order -p 5000:5000 -it -v C:\Users\AHMAD\Desktop\level4\DOS\Bazar.com\src\order:/home ubuntu-nodejs-sqlite3'
- Inside frontend container: 'node frontend.js'
- Inside catalog container: 'node Database.js' → this for creating the catalog table and insert data. Then 'node catalog.js'
- Inside order container: 'node order.js'

**Noticing that sometimes containers don't see the libraries (sqlite3, express, axios) even they are installed when the image was built, so we reinstalled them inside the containers. In next part of the project, we will use docker compose to fix this problem**

We use Node.js because it provides powerful microservices that are asynchronous and lightweight also it is scalable they are backed by a large community and require specific utilization and expertise.