Web Services and Cloud Based Systems (Assignment 2)
Group 16

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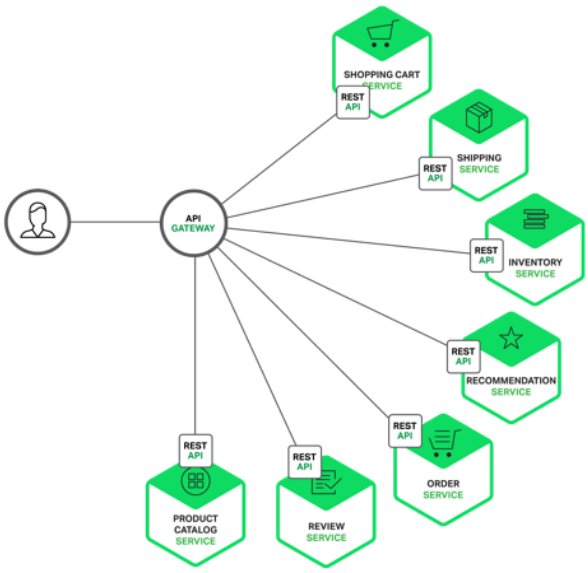
1. **The two microservices are running separately on different ports, but we know that website backends, typically, have one entry point port. How can you create one entry point for all your microservices? Describe (not implement) your approach.**
    - One entry point can be implemented using a service called API Gateway system. The gateway provides an interface for all the microservices to interact with each other and to the outside world using a common port and rest points. This is well described in the figure given below. We implemented this gateway using a reverse proxy server called nginx (https://www.nginx.com/) and adding configurations of the endpoints of each microservice.



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2. **During peak traffic times any one of the services can be easily overloaded with traffic. How would you scale up services independently of each other? Describe (not implement) your approach.**
    - One approach could be to deploy each microservices in different server configurations and scale the servers for whose working microservices are overloaded.
    - Another lightweight and cost-efficient approach is to use container inside one single server to run different microservices. Each docker containers can run a microservice. When scaling up more resources are added to the respective container which has an overloaded microservice running.

3. **A microservice architecture means that many web services can be distributed over several backend servers. How would you keep track of all the services? Location, health? Describe (not implement) your approach.**

- Monitoring tools are available for this kind of solutions. Some of the tools that can monitor a registered microservices are prometheus, envoy proxy, kubernetes, etc. Moreover Eureka server developed by Netflix provides load balancing of the microservices.