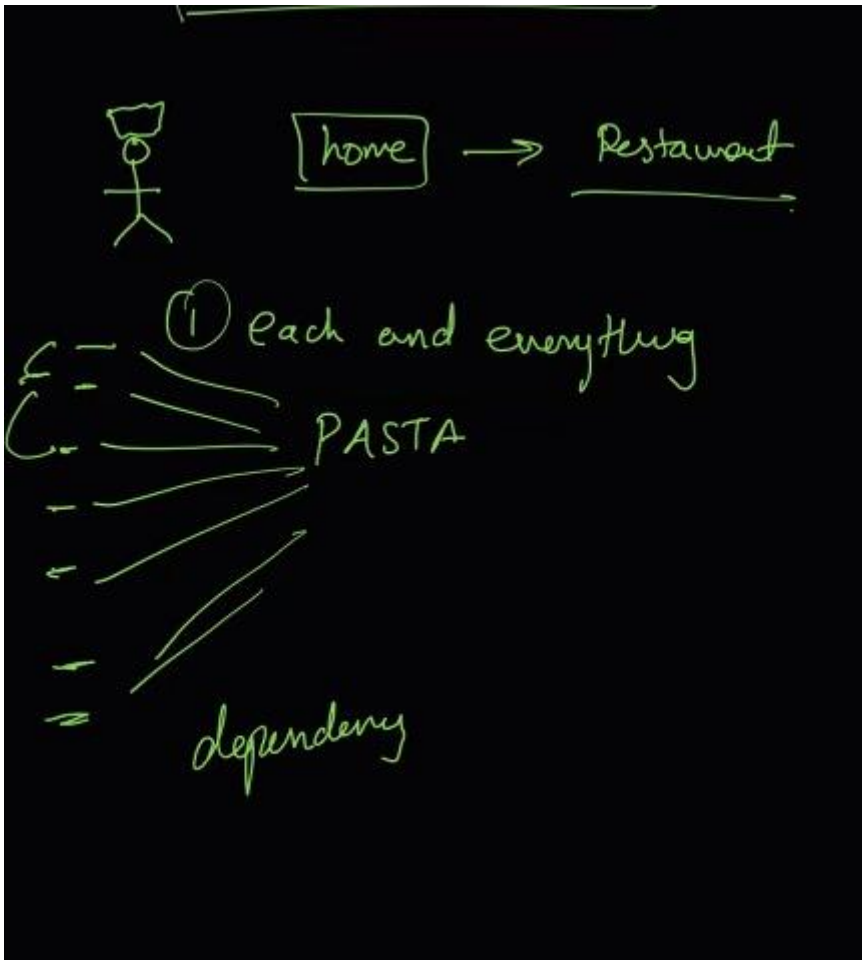
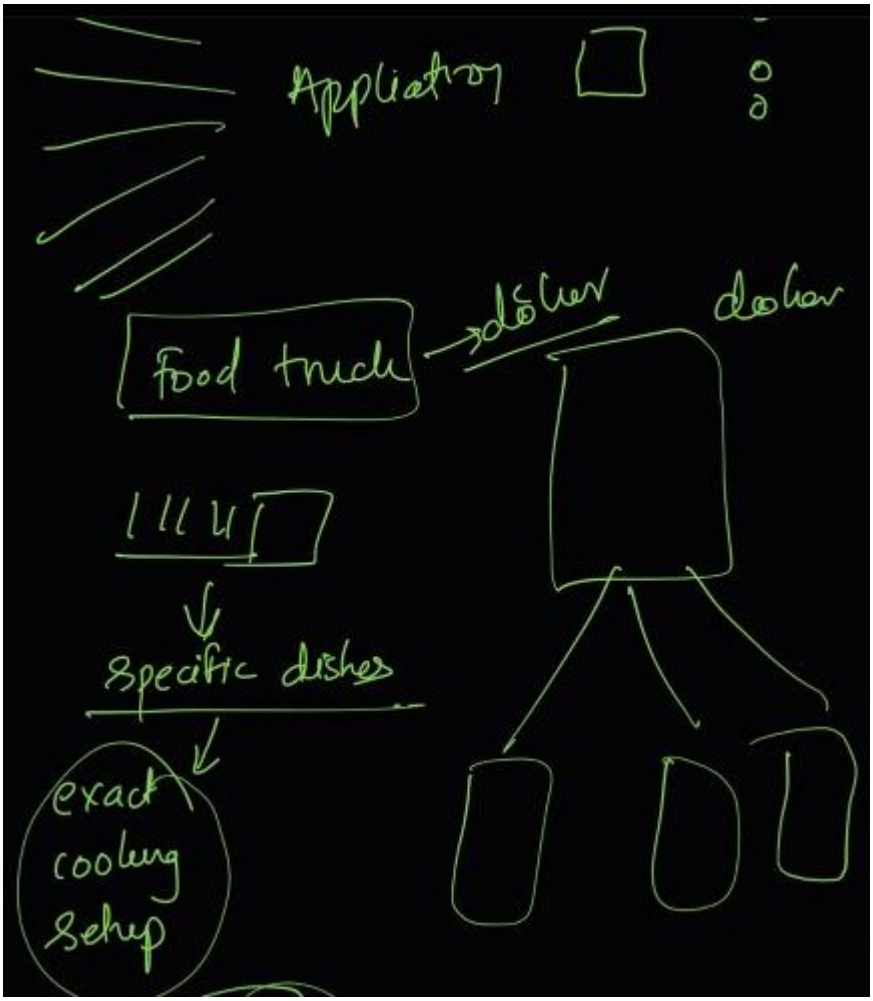
Story of Kubernetes using analogy of food truck:

say u have chef , who cooks everything and as people liked he started restaurant , but each dish has their own dependencies and ingredients and we have limited space in kitchen.

and even if we go to other person 's kitchen but their we don't know where the ingredients are now to package all necessary ingredients, there came a concept of food truck.

similarly came docker, where we can easily replicate all the necessary dependencies and deploy into multiple spaces.

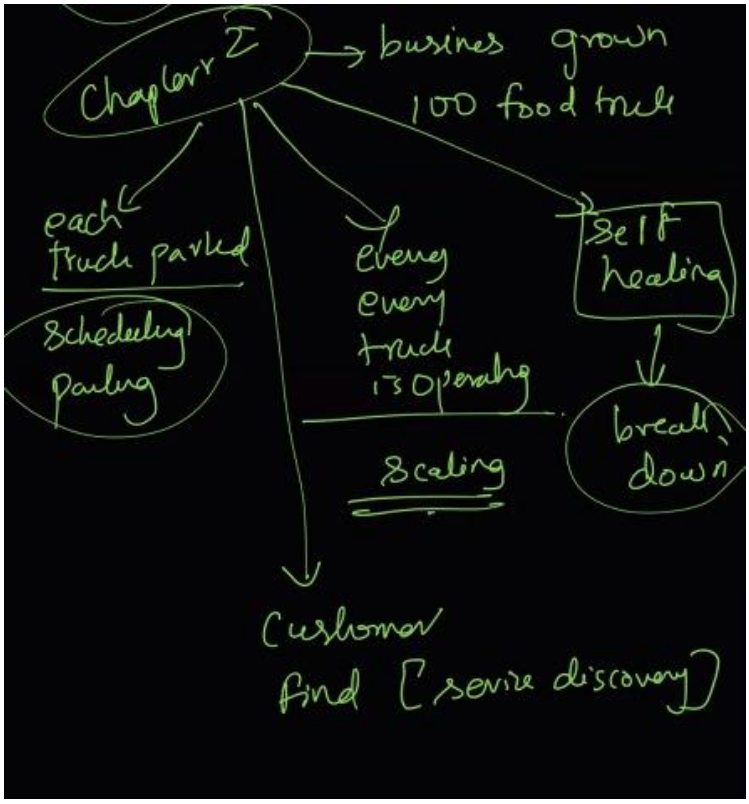




say now business grew and we have 1000 of food trucks, now to track where each truck is parked and during busy hours enough trucks are working and distributing load.

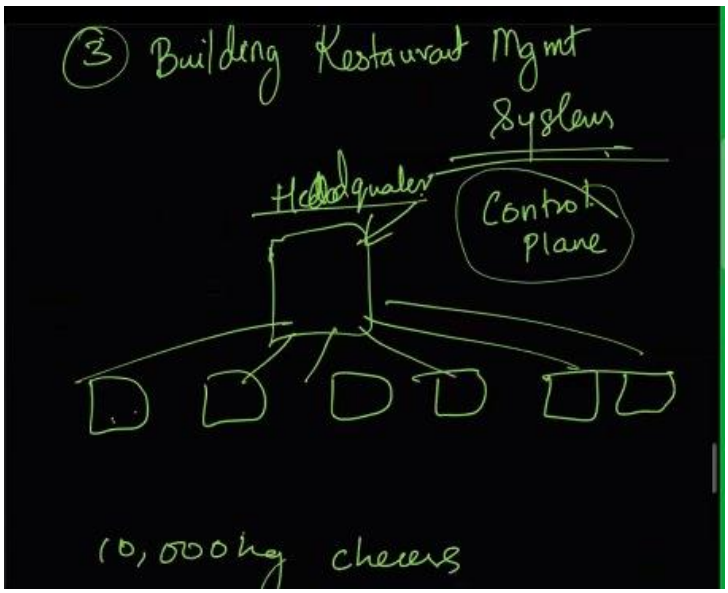
and whenever there is issue there must be self healing buttons and we also need to schedule the parking of food trucks earlier and we also need to scale food truck, so as to serve large audience and for concept of backup gas... for emergency breakdown.

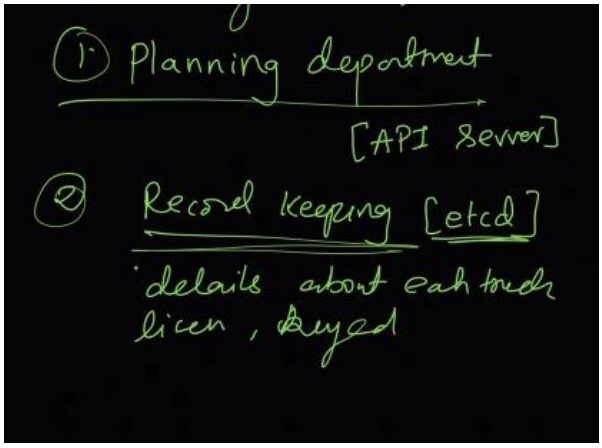
let customer should be able to find you.



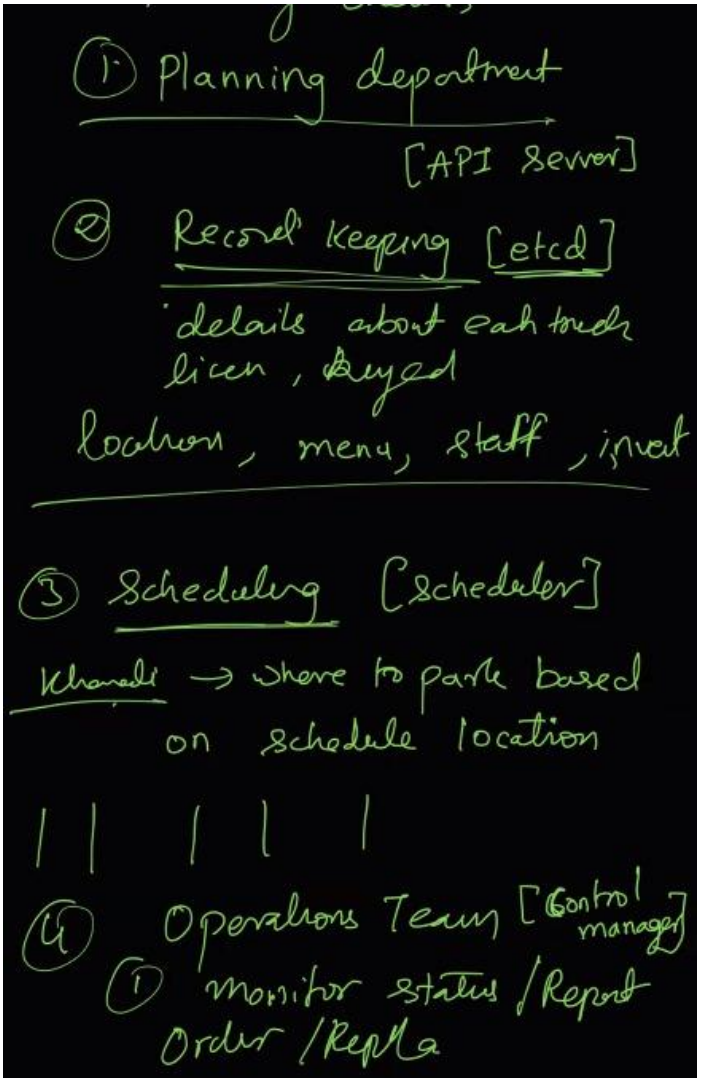
now to achieve this we kind of need a restaurant management system. where we would make a head quater from where we can manage all the smaller trucks and containers

now all request would pass through the head quarters and this control plain in tech language is known as API server and also in headquater we also need to hold all the details and record keeping.

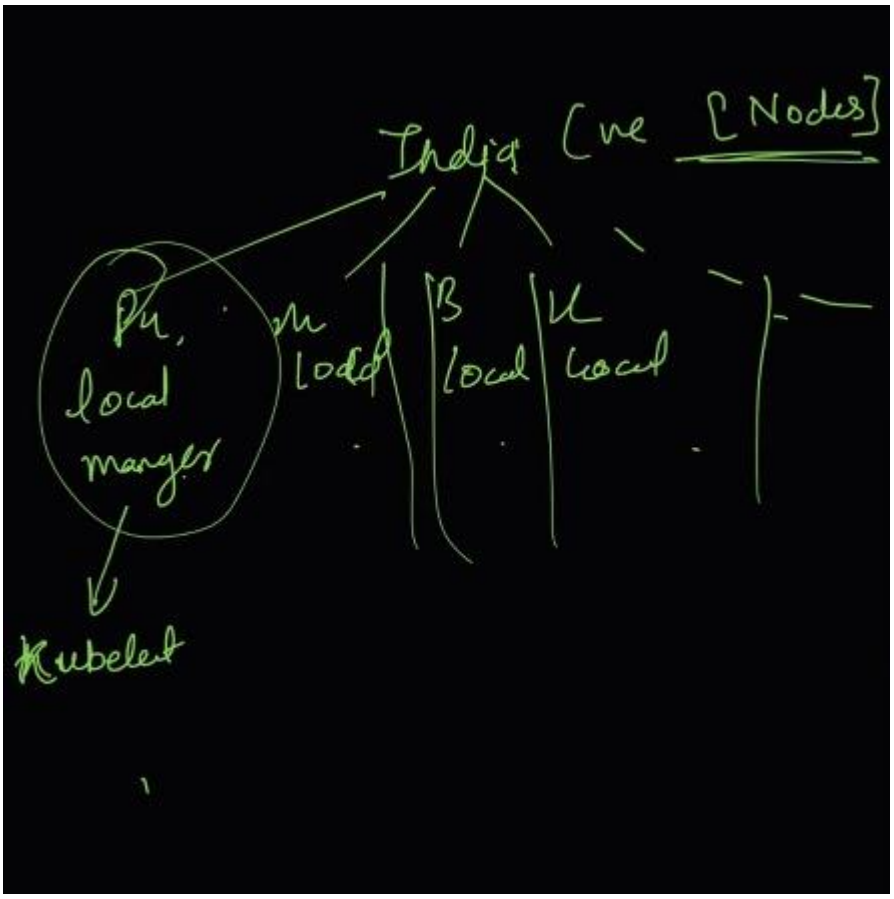




In kubernatics it is known as etcd and then comes the turn of scheduling: so based on available location they do the scheduling thing for this we have scheduler in Kubernetes and lastly we have operator, which monitors and reports the status of all the food trucks and this is done by control manager in Kubernetes.



These are the 4 important steps in control plane in Kubernetes .say now we are famous like Zomato and in india we have branches in lot of states and at each region we have regional manager and there we have local manager for further areas within them now assume all this locations are nodes in Kubernetes and local manager is kublet.

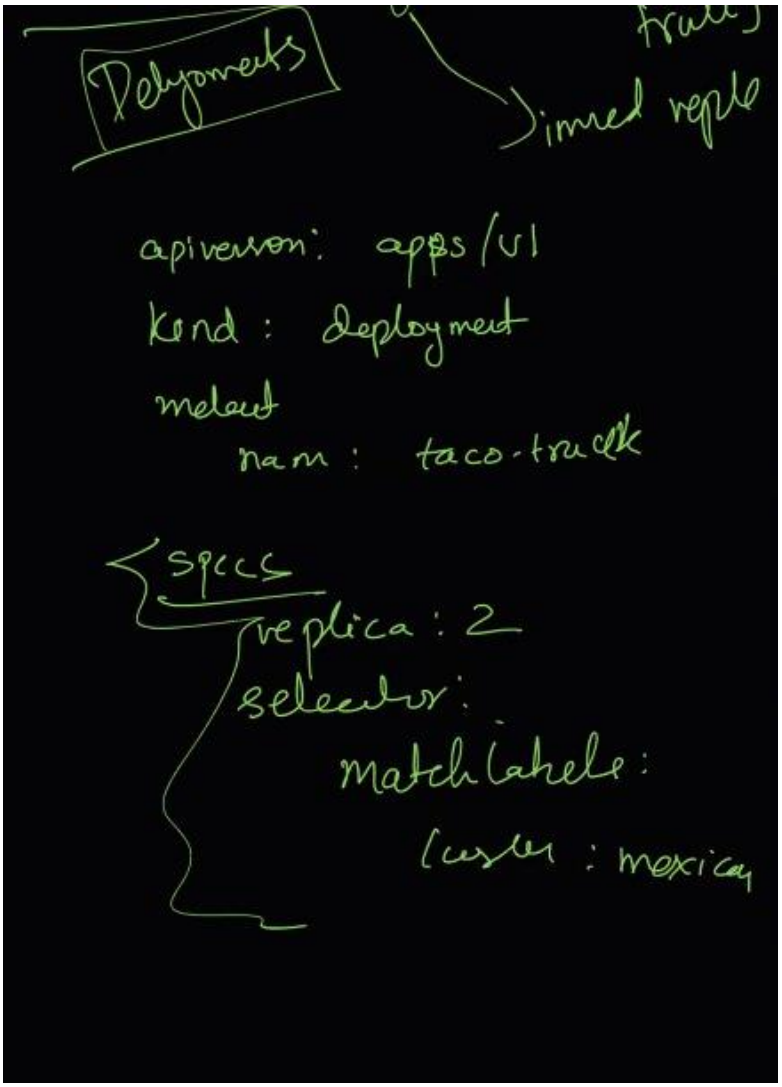


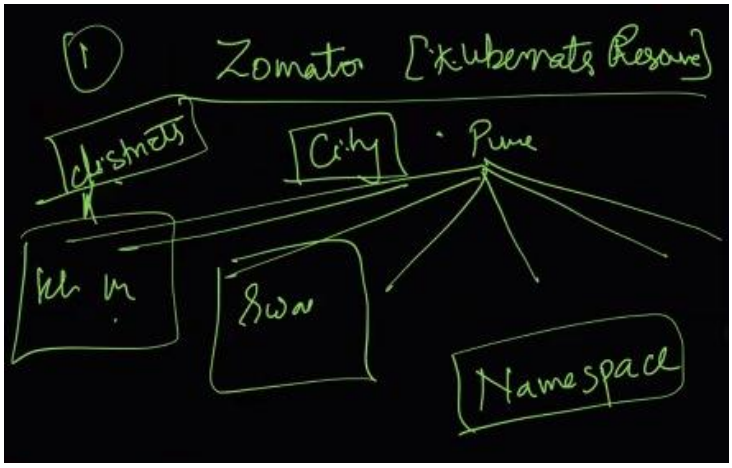
whenever we have a request there always would be traffic online in between the local manager, and to manage that we have online manager to guide the person to right truck and manages the traffic and it is known as kube proxy and the person who actually looks after each food truck, that is each time has an operation team that maintains everything for this we have regional manager is known as control plane here which controls everything.

Now what is kubectl:

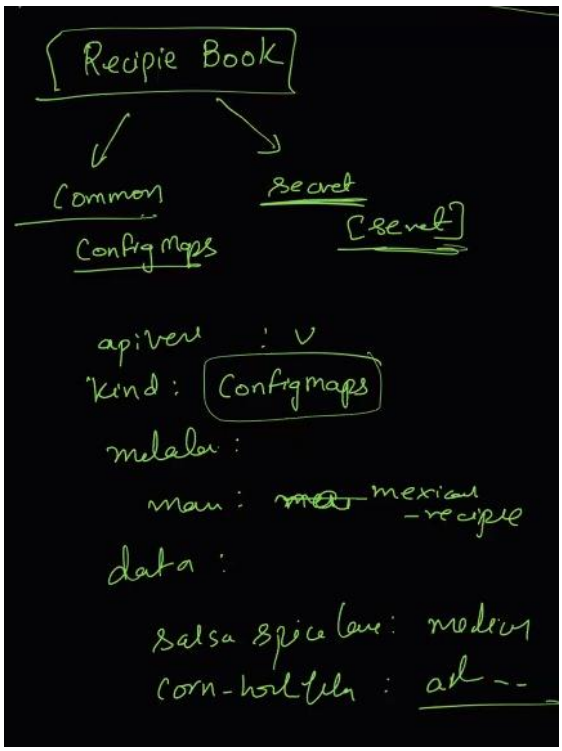
it is just like a smart phone... which covers everything... now say we have set up a empire(Kubernetes resource) and have local manager and everything then we can further divide it on basis of districts and all where we organise and grouping some things to achieve this and this is known as namespaces.

where we segregate related food on basis of type and size . (here type of food) and now pod is the actual location where we post the food truck now district manager (after local manager who manages states) would deploy the number of food trucks in busy areas where demand would be more and there is a file for deployments which contain all basic details.

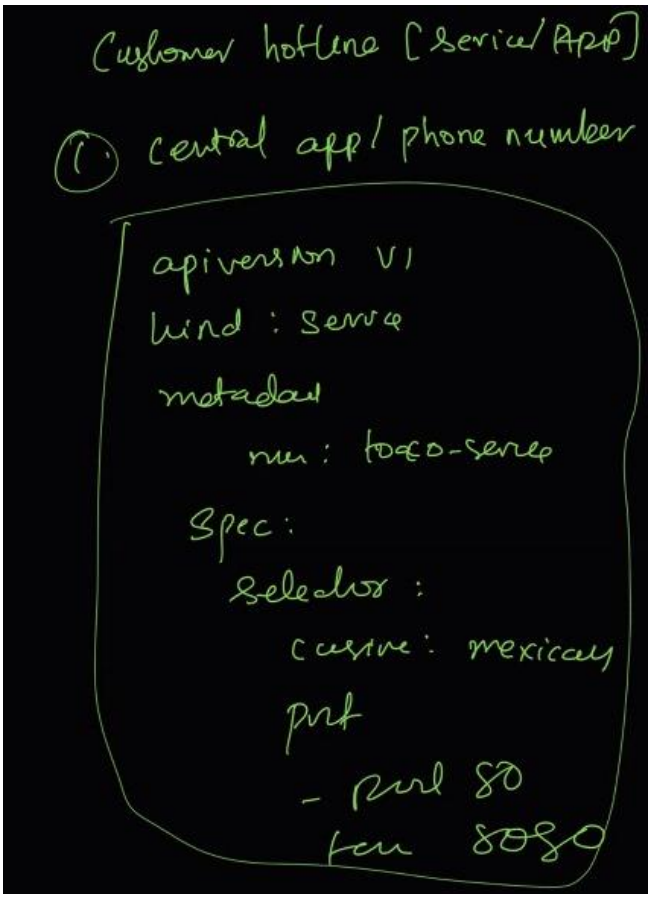




in kuberntes all public things are in config map and all secret and passwords are stored in secret folder.

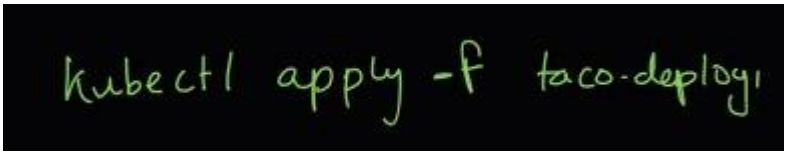


Say now we want introduce a customer hotline for any issue, or we can say we have established a central app now even if the truck is replaced or something then also we don't need to worry as in central hub we would have everything updated we can create a service file in the main app, so that we can export our application to outer world.

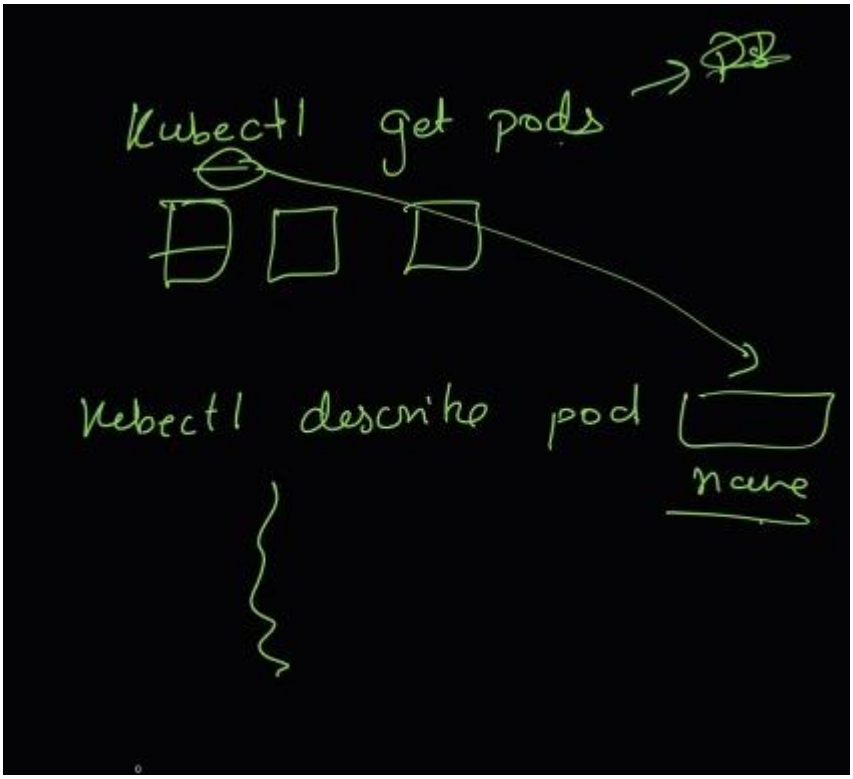


So basically there are four kinds of file namespace, deployment,config,service file.

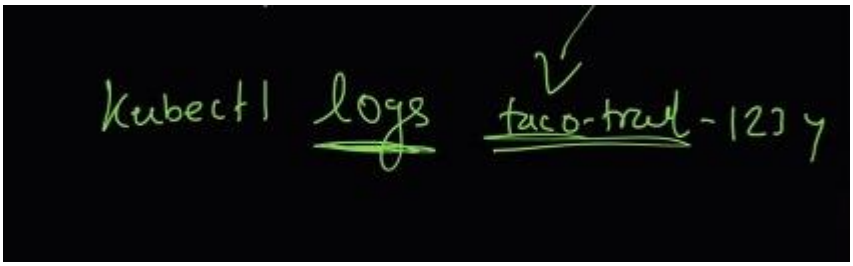
Now say if we want to launch a new truck or container , for this we build a truck and then we deploy yaml and then we use kubectl for submission.



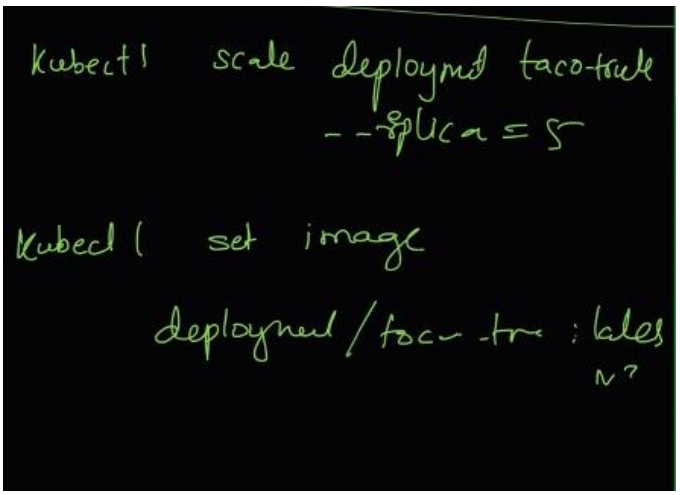
For getting the pods name:



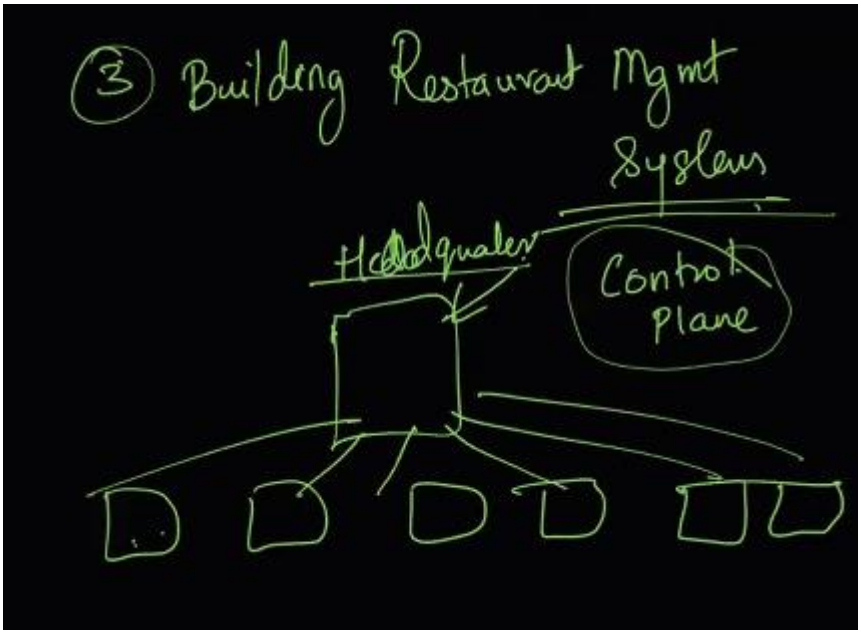
and for monitoring



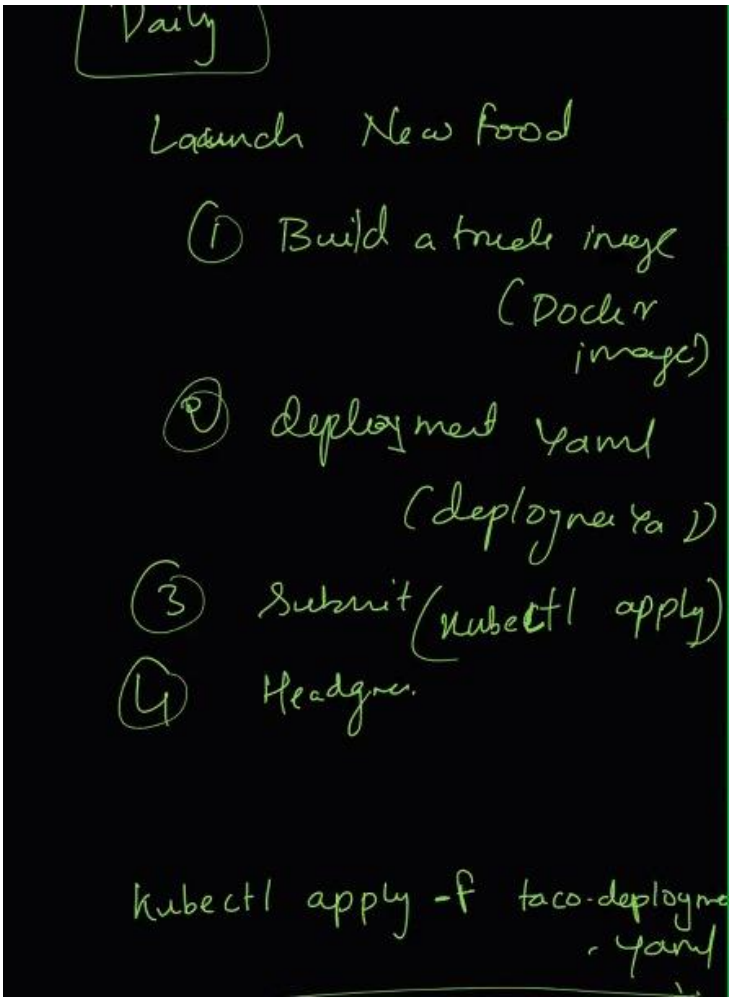
If we want to update or rename the image:



Kubernetes gave control plane to manage everything related to containers

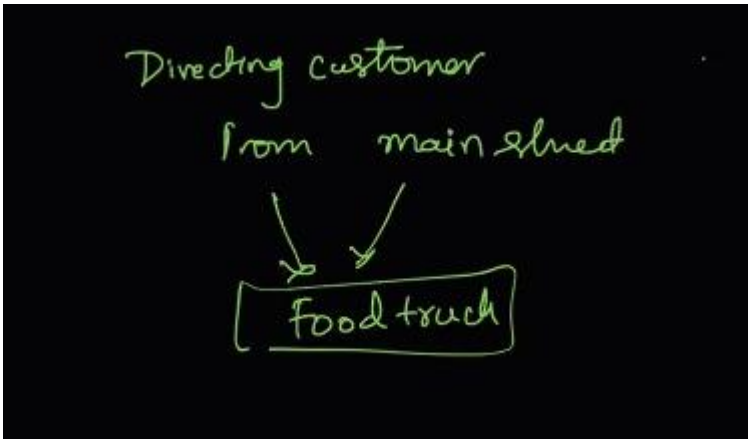


All the steps:

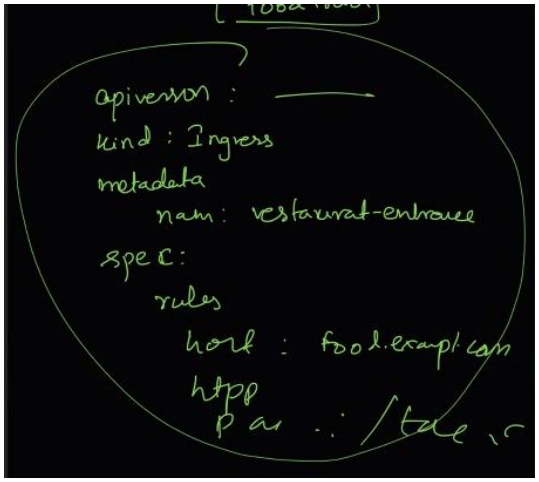


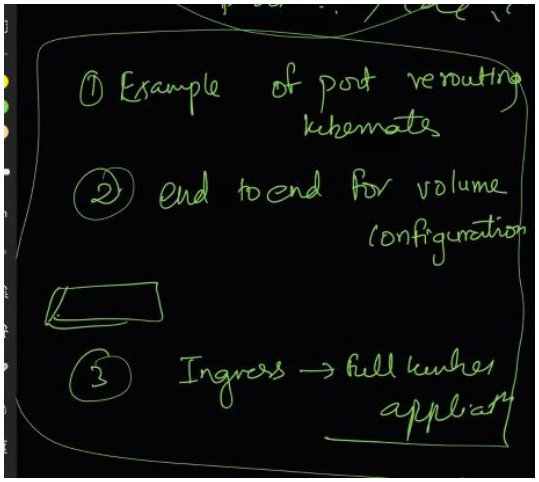
INGRESS WITH KUBERNETES:

Say u are a restraint owner and make ur restaurant available to everyone when we have 1000 of containers running and we want to know which container is where ingress gives a toml file... which shows data about all the files and all the containers and links to access them kind of directing our customer from main street to food truck.



For this we give following details:





Various commands related to Kubernetes :