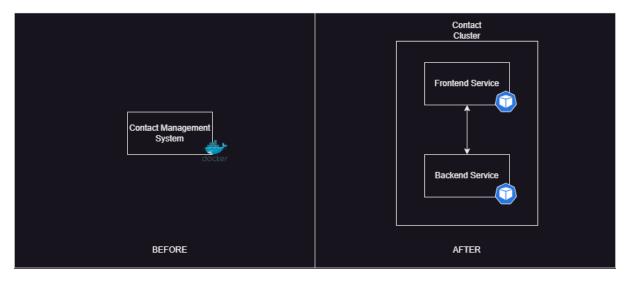
## Microservices & Kubernetes

Initially, we had a monolithic application for Contact Management System deployed using Docker. However, we broke it down into two microservices, frontend-service and backend-service. The frontend-service manages the routing of the application, whereas the backend-service manages the contacts. The architectural diagram for the application, before and after this process was as follows:



Previously, a monolithic application deployed on Docker, has now become two microservices running on Kubernetes pods inside a Kind cluster.

The code and the Kubernetes configuration files (deployment.yaml and service.yaml for both services) for the application can be found on <u>Github</u>.

As shown in the image below, we can see the two microservices deployed and running in a pod and exposed with a service.

```
≥ powershell +
           OUTPUT DEBUG CONSOLE TERMINAL
PS C:\SJSU\Fall 2024 Coursework\CMPE 272 Ent Software Platforms\Assignments\assignment> kubectl get pods
                                          READY
1/1
backend-deployment-96f5b68ff-ng6x8
                                                   Running
                                                                           31m
frontend-deployment-55c4f7b78b-72n9h
                                                    Running
PS C:\SJSU\Fall 2024 Coursework\CMPE 272 Ent Software Platforms\Assignments\assignment> kubectl get svc
                                                                  PORT(S)
5000:31427/TCP
                                 CLUSTER-IP
                                                   EXTERNAL-IP
                                                                                      AGE
NAME TYPE CLUSTER-IP EXTERNO
frontend-service NodePort 10.96.211.188 <none>
kubernetes ClusterIP 10.96.0.1 <none>
                                                                   443/TCP
PS C:\SJSU\Fall 2024 Coursework\CMPE 272 Ent Software Platforms\Assignments\assignment>
```

Here is another image of the live application.

