**Kubernetes Object**

**There are five types of objects in K8**

1. Namespace
2. POD
3. Replicaset
4. Deployment
5. Service

**1. Namespace:-** Namespace is like a package name, Logical portioning of the kubernities cluster is said to be Namespace. Names of resources need to be unique within a namespace. Namespaces cannot be nested inside one another and each Kubernetes resource can only be in one namespace.

**2.POD :-** Pods are the smallest deployable units of computing that you can create and manage in Kubernetes.it is a group of one or more [containers](https://kubernetes.io/docs/concepts/containers/), with shared storage and network resources, and a specification for how to run the containers.

**3.Replicaset:-** A ReplicaSet's purpose is to maintain a stable set of replica Pods running at any given time. As such, it is often used to guarantee the availability of a specified number of identical Pods.

**4.Deployment:-** Deployments are controller objects that provide instructions on how Kubernetes should manage the pods hosting a containerized application. the deployment controller monitors the health of the pods and nodes. In case of a failure, it destroys the failed pods and creates new ones. It can also bypass the malfunctioning nodes, enabling the application to remain functional even when a hardware error occurs.

**5.Service:-** Services provide a way to expose applications running in pods. Their purpose is to represent a set of pods that perform the same function and set the policy for accessing those pods . Although pod failure is an expected event in a cluster, Kubernetes replaces the failed pod with a replica with a different IP address. This creates problems in communication between pods that depend on each other.