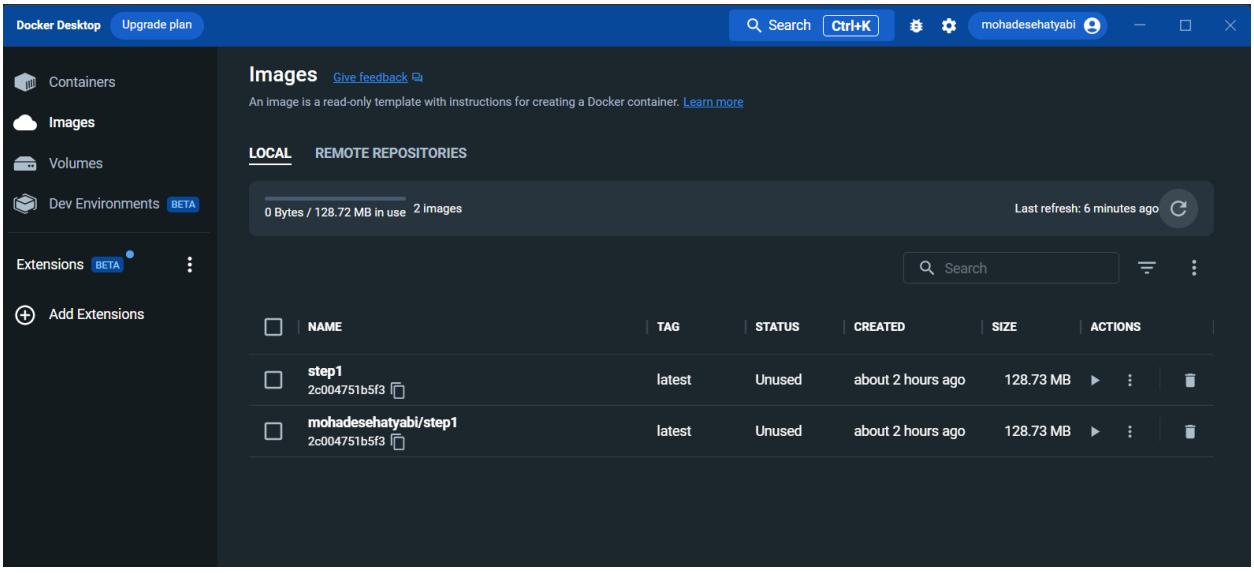
محدثه سادات اطیابی ۹۷۲۶۰۰۴

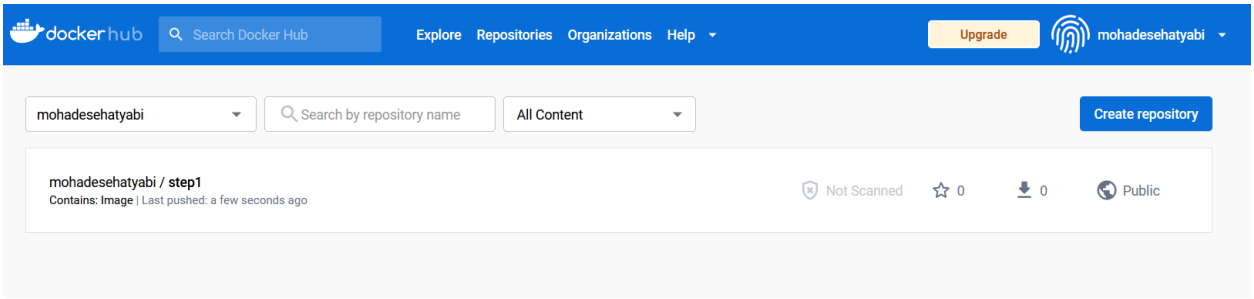
گام ۱)

```
TERMINAL                                                                                                    cmd

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>docker build -t step1 .
[+] Building 7.4s (8/8) FINISHED
 => [internal] load build definition from Dockerfile                                                        0.0s
 => => transferring dockerfile: 31B                                                                         0.0s
 => [internal] load .dockerignore                                                                           0.0s
 => => transferring context: 2B                                                                             0.0s
 => [internal] load metadata for docker.io/library/ubuntu:20.04                                             7.3s
 => [auth] library/ubuntu:pull token for registry-1.docker.io                                               0.0s
 => [1/3] FROM docker.io/library/ubuntu:20.04@sha256:0e0402cd13f68137edb0266e1d2c682f217814420f2d43d300ed8f65479b14fb  0.0s
 => CACHED [2/3] RUN apt-get update                                                                         0.0s
 => CACHED [3/3] RUN apt-get install -y curl                                                                0.0s
 => exporting to image                                                                                      0.0s
 => => exporting layers                                                                                     0.0s
 => => writing image sha256:2c004751b5f332f9d199885a8cdb0ff3c65663c61761d666efa73863a9d45a53                0.0s
 => => naming to docker.io/library/step1                                                                    0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>docker images
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
step1        latest    2c004751b5f3   53 minutes ago   129MB

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>
```

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>docker tag step1 mohadesehatyabi/step1
```

```
TERMINAL                                                                                                    docker

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>docker image push mohadesehatyabi/step1
Using default tag: latest
The push refers to repository [docker.io/mohadesehatyabi/step1]
216b270b96ff: Pushed
3359b6f08d38: Pushed
0002c93bdb37: Pushed
latest: digest: sha256:48d4200804629dff0e2891c60cc25e01e933a8cade44c0cca1b2c1c992cc6a16 size: 952

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>
```






```
TERMINAL                                                                    docker

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>docker pull mohadesehatyabi/step1
Using default tag: latest
latest: Pulling from mohadesehatyabi/step1
Digest: sha256:48d4200804629dff0e2891c60cc25e01e933a8cade44c0cca1b2c1c992cc6a16
Status: Image is up to date for mohadesehatyabi/step1:latest
docker.io/mohadesehatyabi/step1:latest

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>docker images
REPOSITORY              TAG       IMAGE ID       CREATED       SIZE
step1                   latest    2c004751b5f3   2 hours ago   129MB
mohadesehatyabi/step1   latest    2c004751b5f3   2 hours ago   129MB

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step1>docker run -it mohadesehatyabi/step1
root@dc297c816398:/# curl google.com
<HTML><HEAD><meta http-equiv="content-type" content="text/html;charset=utf-8">
<TITLE>301 Moved</TITLE></HEAD><BODY>
<H1>301 Moved</H1>
The document has moved
<A HREF="http://www.google.com/">here</A>.
</BODY></HTML>
```

گام ۲)

```
C:\Users\ASUS>docker volume create my-volume
my-volume

C:\Users\ASUS>docker network create my-network
3139e3f2d4c42c59406262027607303b16061d34cb1dd301d23c7320092d1647

C:\Users\ASUS>docker build -t my-redis redis
unable to prepare context: path "redis" not found

C:\Users\ASUS>docker run --network my-network -d -p 6379:6379 --name my-redis -v my-volume:/data redis
Unable to find image 'redis:latest' locally
latest: Pulling from library/redis
025c56f98b67: Pull complete
060e65aed679: Pull complete
b95291e865b7: Pull complete
7b6050af44d2: Pull complete
e64c0623c4eb: Pull complete
85500bdb8386: Pull complete
Digest: sha256:22945f6aa6a1d6d717168ed9f27d24eb9c73e9cf303ce585a84b285d5387f5d8
Status: Downloaded newer image for redis:latest
b4f553761268a88a1f17d49c07fba60dbabde170c37c5e6b4aa5db682b134212

C:\Users\ASUS>docker network ls
NETWORK ID     NAME         DRIVER    SCOPE
6ac1260cf57f   bridge       bridge    local
cf37c2982e7a   host         host      local
3139e3f2d4c4   my-network   bridge    local
2914b9e5ea53   none         null      local
```

```
C:\Users\ASUS>docker network inspect my-network
[
    {
        "Name": "my-network",
        "Id": "3139e3f2d4c42c59406262027607303b16061d34cb1dd301d23c7320092d1647",
        "Created": "2022-12-21T06:35:42.9635544Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": {},
            "Config": [
                {
                    "Subnet": "172.18.0.0/16",
                    "Gateway": "172.18.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {
            "b4f553761268a88a1f17d49c07fba60dbabde170c37c5e6b4aa5db682b134212": {
                "Name": "my-redis",
                "EndpointID": "4d11f17093dccb2cea6ef448af70cc19cfeaf33dc5231a658b5d3c07e6d02651",
                "MacAddress": "02:42:ac:12:00:02",
                "IPv4Address": "172.18.0.2/16",
                "IPv6Address": ""
            }
        },
        "Options": {},
        "Labels": {}
    }
]

C:\Users\ASUS>
```

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step2>docker build -t step2 .
[+] Building 118.7s (9/9) FINISHED
 => [internal] load build definition from Dockerfile                                                                0.1s
 => => transferring dockerfile: 270B                                                                                0.0s
 => [internal] load .dockerignore                                                                                   0.0s
 => => transferring context: 2B                                                                                     0.0s
 => [internal] load metadata for docker.io/library/python:3.11.0a6-alpine3.15                                       6.1s
 => [1/5] FROM docker.io/library/python:3.11.0a6-alpine3.15@sha256:6c215dcdebd4c2d15e5e5fb8307f913c34af918b1b5e5   75.1s
 => => resolve docker.io/library/python:3.11.0a6-alpine3.15@sha256:6c215dcdebd4c2d15e5e5fb8307f913c34af918b1b5e5f   0.1s
 => => sha256:a1ef3e6b7a02c0ce1d7d3ee96f273c2c5074b3f127082b4cd3f629f82097e1a8 667.03kB / 667.03kB                  2.9s
 => => sha256:d1e17565333cd065cb51ec35f9a10879943928d0fff726308a06f7e6fb692376 12.14MB / 12.14MB                   73.2s
 => => sha256:6c215dcdebd4c2d15e5e5fb8307f913c34af918b1b5e5f166d620c871281d2cc 1.65kB / 1.65kB                      0.0s
 => => sha256:18be308a204bafbc854402e5b84edae24e67b36c05fc4998f28c2c1765a383d7 1.37kB / 1.37kB                      0.0s
 => => sha256:aa329230c223dd34fc0cb56334d27a241050450851079ea53505df1baa01b8d9 7.07kB / 7.07kB                      0.0s
 => => sha256:df9b9388f04ad6279a7410b85cedfdcb2208c0a003da7ab5613af71079148139 2.81MB / 2.81MB                      39.2s
 => => sha256:39bb61749076722fce55f044ed90871edfa8caf30551097f56d61d07611de07e 232B / 232B                          3.6s
 => => sha256:51c576e0362e6f65eb6563c76c8a72c84a72c2fc0e69002587621956d372f6f4 2.34MB / 2.34MB                      42.9s
 => => extracting sha256:df9b9388f04ad6279a7410b85cedfdcb2208c0a003da7ab5613af71079148139                           0.8s
 => => extracting sha256:a1ef3e6b7a02c0ce1d7d3ee96f273c2c5074b3f127082b4cd3f629f82097e1a8                           0.2s
 => => extracting sha256:d1e17565333cd065cb51ec35f9a10879943928d0fff726308a06f7e6fb692376                           0.8s
 => => extracting sha256:39bb61749076722fce55f044ed90871edfa8caf30551097f56d61d07611de07e                           0.0s
 => => extracting sha256:51c576e0362e6f65eb6563c76c8a72c84a72c2fc0e69002587621956d372f6f4                           0.4s
 => [internal] load build context                                                                                   0.1s
 => => transferring context: 1.84kB                                                                                 0.0s
 => [2/5] COPY requirements.txt requirements.txt                                                                    0.5s
 => [3/5] RUN pip install -r requirements.txt                                                                      35.0s
 => [4/5] COPY . .                                                                                                  0.1s
 => exporting to image                                                                                              1.3s
 => => exporting layers                                                                                             1.3s
 => => writing image sha256:c199c1859af8adb8b3f070e1a0fdf2b66fb28f62323907e0fee89ee09be82521                        0.0s
 => => naming to docker.io/library/step2                                                                            0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step2>
```

```
C:\Users\ASUS>docker run -e SERVER_PORT=5000 -e CURRENCY_NAME="btc" -e CACHE_TIME=300 -e API_KEY="A6E11D2B-3F3E-492D-A18F-78DF7EFE576B" -it --net my-network -p 5000:5000 step2
 * Serving Flask app 'app.py'
 * Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
 * Running on all addresses (0.0.0.0)
 * Running on http://127.0.0.1:5000
 * Running on http://172.18.0.3:5000
Press CTRL+C to quit
172.18.0.1 - - [21/Dec/2022 06:57:05] "GET /getprice/ HTTP/1.1" 200 -
172.18.0.1 - - [21/Dec/2022 06:57:09] "GET /getprice/ HTTP/1.1" 200 -
172.18.0.1 - - [21/Dec/2022 06:57:11] "GET /getprice/ HTTP/1.1" 200 -
172.18.0.1 - - [21/Dec/2022 06:57:12] "GET /getprice/ HTTP/1.1" 200 -
172.18.0.1 - - [21/Dec/2022 06:57:12] "GET /getprice/ HTTP/1.1" 200 -
172.18.0.1 - - [21/Dec/2022 06:57:13] "GET /getprice/ HTTP/1.1" 200 -
172.18.0.1 - - [21/Dec/2022 06:57:13] "GET /getprice/ HTTP/1.1" 200 -
172.18.0.1 - - [21/Dec/2022 06:57:16] "GET /getprice/ HTTP/1.1" 200 -
```

```
C:\Users\ASUS>docker image push mohadesehatyabi/step2
Using default tag: latest
The push refers to repository [docker.io/mohadesehatyabi/step2]
bf50c03ac69a: Pushed
a0b7ea08bcd1: Pushed
5246eeefcf9f: Pushed
cf47a6e12eb3: Mounted from library/python
e643e0ae620e: Pushed
2091c8163eb1: Mounted from library/python
fbd7d5451c69: Mounted from library/python
4fc242d58285: Mounted from library/python
latest: digest: sha256:4a6ea7370cf829a533fb107fc2bc4901337a926a287220bef473f2c975af6db2 size: 1993
```

گام ۳)

```
C:\WINDOWS\system32>cd C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>minikube start
* minikube v1.28.0 on Microsoft Windows 11 Pro 10.0.22000 Build 22000
* Using the hyperv driver based on existing profile
* Starting control plane node minikube in cluster minikube
* Updating the running hyperv "minikube" VM ...
! This VM is having trouble accessing https://registry.k8s.io
* To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/
* Preparing Kubernetes v1.25.3 on Docker 20.10.20 ...
* Verifying Kubernetes components...
  - Using image gcr.io/k8s-minikube/storage-provisioner:v5
* Enabled addons: storage-provisioner, default-storageclass
* Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply ./ConfigMap.yaml
error: Unexpected args: [./ConfigMap.yaml]
See 'kubectl apply -h' for help and examples

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f /ConfigMap.yaml
error: the path "/ConfigMap.yaml" does not exist

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f ./ConfigMap.yaml
configmap/server-config created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f /Deployment.yaml
error: the path "/Deployment.yaml" does not exist

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f ./Deployment.yaml
deployment.apps/my-server created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f ./Service.yaml
service/service created
```

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl get pods --all-namespaces
NAMESPACE     NAME                               READY   STATUS              RESTARTS        AGE
default       my-server-699c966488-p2qtw         0/1     ContainerCreating   0               44s
default       my-server-699c966488-w7fd6         0/1     ContainerCreating   0               44s
kube-system   coredns-565d847f94-qcd8q           1/1     Running             3 (4m49s ago)   18h
kube-system   etcd-minikube                      1/1     Running             3 (5m4s ago)    18h
kube-system   kube-apiserver-minikube            1/1     Running             3 (5m6s ago)    18h
kube-system   kube-controller-manager-minikube   1/1     Running             4 (5m4s ago)    18h
kube-system   kube-proxy-mpvdd                   1/1     Running             4 (4m59s ago)   18h
kube-system   kube-scheduler-minikube            1/1     Running             4 (5m4s ago)    18h
kube-system   storage-provisioner                1/1     Running             6 (5m ago)      18h
```

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl describe pod my-server-699c966488-p2qtw
Name:             my-server-699c966488-p2qtw
Namespace:        default
Priority:         0
Service Account:  default
Node:             minikube/172.20.39.35
Start Time:       Wed, 21 Dec 2022 11:23:12 +0330
Labels:           app=my-server
                  pod-template-hash=699c966488
Annotations:      <none>
Status:           Pending
IP:
IPs:              <none>
Controlled By:    ReplicaSet/my-server-699c966488
Containers:
  step2:
    Container ID:
    Image:          mohadesehatyabi/step2
    Image ID:
    Port:           <none>
    Host Port:      <none>
    State:          Waiting
      Reason:       ContainerCreating
    Ready:          False
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /server-config.config from config-map (ro,path="server-config.config")
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-whgs6 (ro)
Conditions:
  Type              Status
  Initialized       True
  Ready             False
  ContainersReady   False
  PodScheduled      True
Volumes:
  config-map:
    Type:      ConfigMap (a volume populated by a ConfigMap)
    Name:      server-config
    Optional:  false
  kube-api-access-whgs6:
    Type:                    Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds:  3607
    ConfigMapName:           kube-root-ca.crt
    ConfigMapOptional:       <nil>
```

---

سرور

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step2>cd C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Comput
ing\HW2\Step3\Server

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f config-map.yaml
configmap/server-config created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl get cm
NAME              DATA   AGE
kube-root-ca.crt   1      62m
server-config      0      9s

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f deployment.yaml
deployment.apps/my-server created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl get deployment
NAME        READY   UP-TO-DATE   AVAILABLE   AGE
my-server   2/2     2            2           10s

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl apply -f service.yaml
service/service created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl get svc
NAME         TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)    AGE
kubernetes   ClusterIP   10.96.0.1       <none>        443/TCP    64m
service      ClusterIP   10.110.5.141    <none>        5000/TCP   25s

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>
```

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl get pods
NAME                         READY   STATUS    RESTARTS   AGE
my-server-b7d6f4948-fdffh   1/1     Running   0          111s
my-server-b7d6f4948-l7dgc   1/1     Running   0          111s

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>kubectl describe pod my-server-b7d6f4948-fdffh
Name:             my-server-b7d6f4948-fdffh
Namespace:        default
Priority:         0
Service Account:  default
Node:             minikube/192.168.49.2
Start Time:       Thu, 22 Dec 2022 06:23:15 +0330
Labels:           app=my-server
                  pod-template-hash=b7d6f4948
Annotations:      <none>
Status:           Running
IP:               172.17.0.4
IPs:
  IP:           172.17.0.4
Controlled By:  ReplicaSet/my-server-b7d6f4948
Containers:
  step2:
    Container ID:   docker://b70414f49e820763e4cb56260e6d03c1cadc104ee528960aa0d324890594c451
    Image:          mohadesehatyabi/step2
    Image ID:       docker-pullable://mohadesehatyabi/step2@sha256:4a6ea7370cf829a533fb107fc2bc4901337a926a287220bef473f2c975af6db2
    Port:           5000/TCP
    Host Port:      0/TCP
    State:          Running
      Started:      Thu, 22 Dec 2022 06:23:17 +0330
    Ready:          True
    Restart Count:  0
    Environment:
      API_KEY:        A6E11D2B-3F3E-492D-A18F-78DF7EFE576B
      CACHE_TIME:     300
      CURRENCY_NAME:  btc
      SERVER_PORT:    5000
    Mounts:
      ./server-config.yaml from config-map (ro,path="server-config.yaml")
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-t8cdm (ro)
```

```
Conditions:
  Type              Status
  Initialized       True
  Ready             True
  ContainersReady   True
  PodScheduled      True
Volumes:
  config-map:
    Type:      ConfigMap (a volume populated by a ConfigMap)
    Name:      server-config
    Optional:  false
  kube-api-access-t8cdm:
    Type:                     Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds:   3607
    ConfigMapName:            kube-root-ca.crt
    ConfigMapOptional:        <nil>
    DownwardAPI:              true
QoS Class:                    BestEffort
Node-Selectors:               <none>
Tolerations:                  node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                              node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type    Reason     Age    From               Message
  ----    ------     ----   ----               -------
  Normal  Scheduled  2m16s  default-scheduler  Successfully assigned default/my-server-b7d6f4948-fdffh to minikube
  Normal  Pulled     2m14s  kubelet            Container image "mohadesehatyabi/step2" already present on machine
  Normal  Created    2m14s  kubelet            Created container step2
  Normal  Started    2m14s  kubelet            Started container step2

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Server>
```

ردیس

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl apply -f redis-config-map.yaml
configmap/redis-server-config created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl get cm
NAME                 DATA   AGE
kube-root-ca.crt     1      102m
redis-server-config  0      5s
server-config        0      40m

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl apply -f redis-deployment.yaml
deployment.apps/redis-my-server created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl get deployment
NAME              READY   UP-TO-DATE   AVAILABLE   AGE
my-server         2/2     2            2           40m
redis-my-server   1/1     1            1           11s

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl apply -f redis-service.yaml
service/redis-service created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl get svc
NAME            TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)    AGE
kubernetes      ClusterIP   10.96.0.1       <none>        443/TCP    104m
redis-service   ClusterIP   10.110.72.152   <none>        5000/TCP   10s
service         ClusterIP   10.110.5.141    <none>        5000/TCP   40m

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubetcl apply -f redis-Persistant-Volume.yaml
'kubetcl' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl apply -f redis-Persistant-Volume.yaml
persistentvolume/pv-volume created

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl get pv
NAME        CAPACITY        ACCESS MODES   RECLAIM POLICY   STATUS      CLAIM   STORAGECLASS   REASON   AGE
pv-volume   107374182400m   RWO            Retain           Available           manual                  17s

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl apply -f redis-Persistant-Volume-Claim.yaml
persistentvolumeclaim/pv-volume-claim created
```

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl get pvc
NAME              STATUS   VOLUME      CAPACITY        ACCESS MODES   STORAGECLASS   AGE
pv-volume-claim   Bound    pv-volume   107374182400m   RWO            manual         51s

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>
```

http:

```
C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl get ep
NAME            ENDPOINTS                       AGE
kubernetes      192.168.49.2:8443               108m
redis-service   172.17.0.5:5000                 4m25s
service         172.17.0.3:5000,172.17.0.4:5000   44m

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>kubectl get pods -o wide
NAME                              READY   STATUS    RESTARTS   AGE     IP           NODE       NOMINATED NODE   READINESS GATES
my-server-b7d6f4948-fdffh         1/1     Running   0          45m     172.17.0.4   minikube   <none>           <none>
my-server-b7d6f4948-l7dgc         1/1     Running   0          45m     172.17.0.3   minikube   <none>           <none>
redis-my-server-69f78648fb-kcx74  1/1     Running   0          5m54s   172.17.0.5   minikube   <none>           <none>

C:\Users\ASUS\OneDrive\Desktop\Folders\computer engineering\Principles of Cloud Computing\HW2\Step3\Redis>
```

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