TASK 5 – MAVEN

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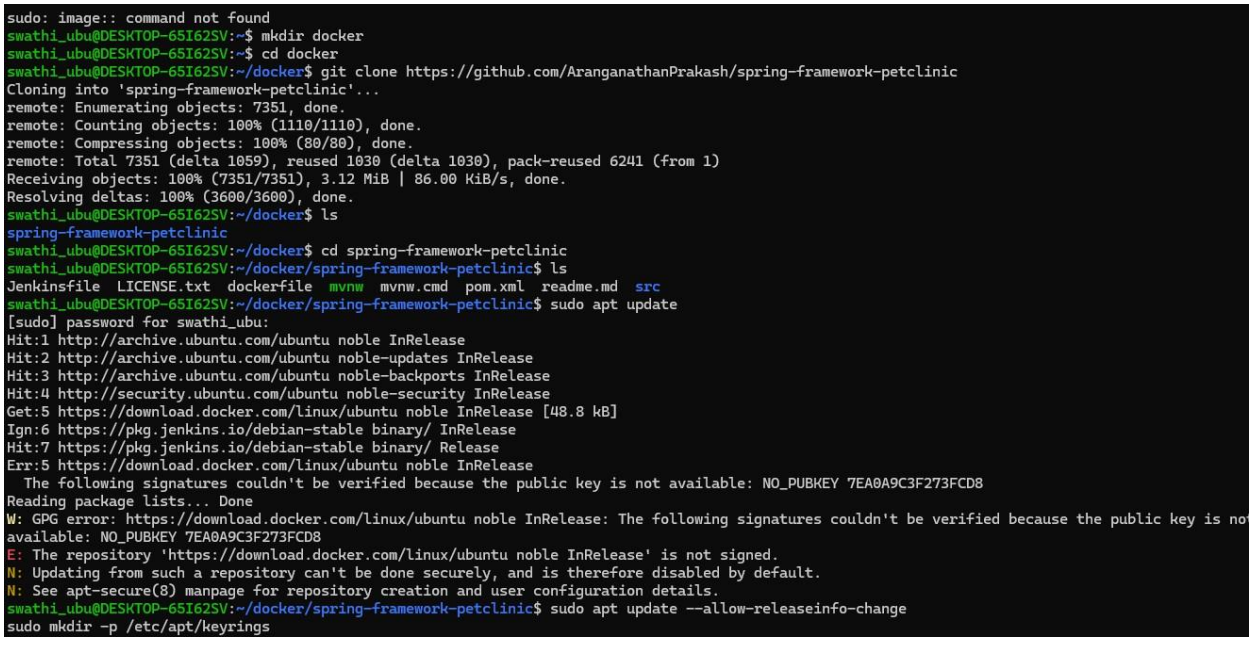
STEPS:

1. Create a folder and move into that folder.
2. If Git is not already installed, install it using the following command:

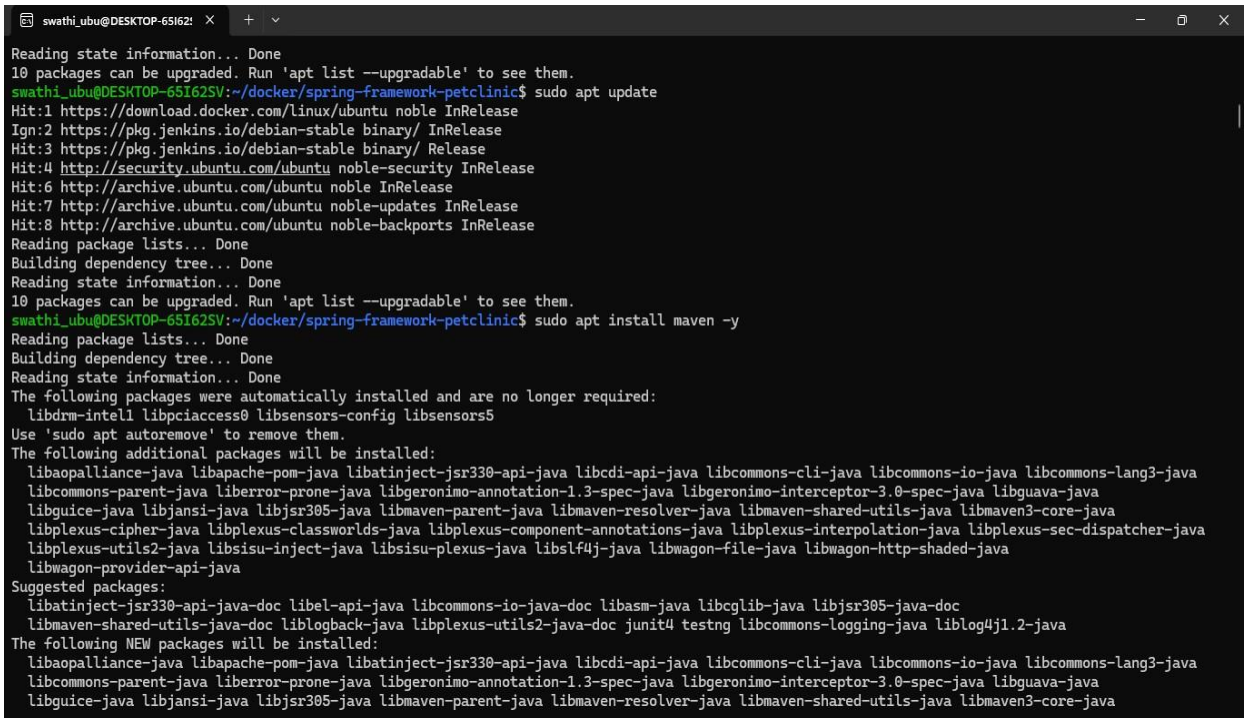
   sudo apt install git
3. Clone the GitHub repository containing the project files.
4. Check the list of folders using the command: **ls**
5. Move into the cloned folder.
6. If Maven is not already installed, install it using the following command:

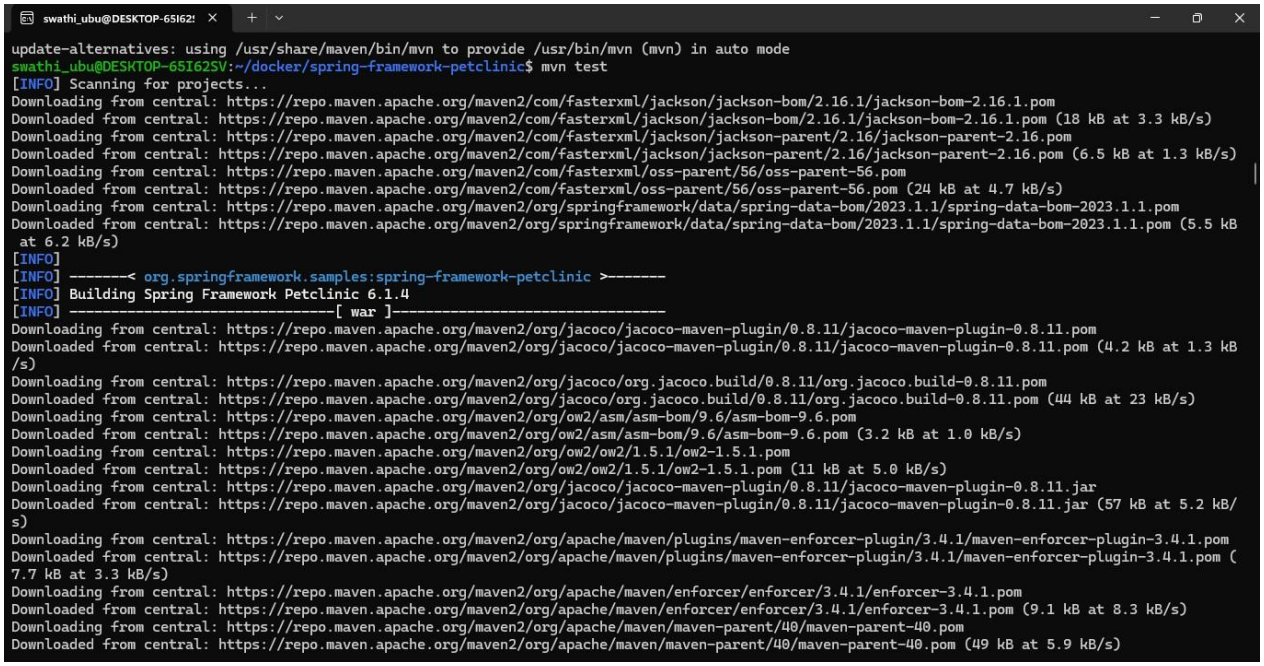
   sudo apt install maven
7. To verify the Maven installation, use the command: **mvn –version**



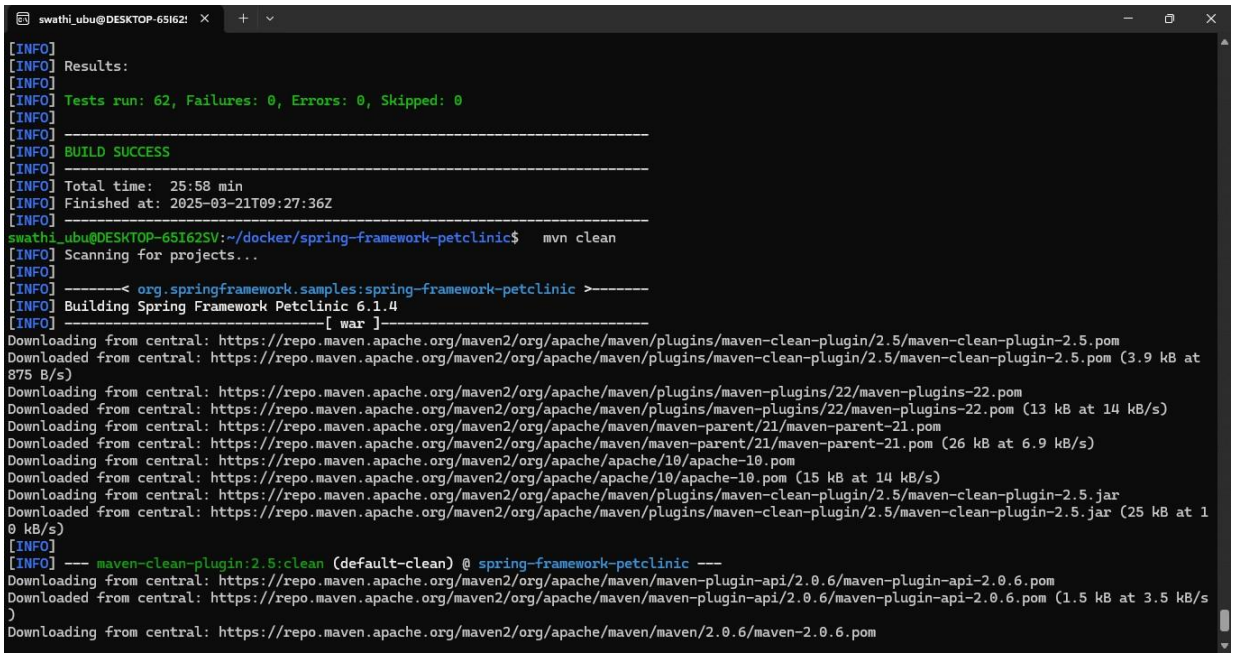
8. Execute the following commands one by one:

    - mvn test → Runs unit tests and generates a report for the project.
    - mvn clean → Deletes the previous Maven build.
    - mvn install → Installs all the required plugins and packages.
    - mvn package → Provides the jar or war file for the entire application.





9. Push the Docker image to DockerHub using the appropriate Docker commands.



```
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0/plexus-utils-3.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-plugin-api/2.0.6/maven-plugin-api-2.0.6.jar (13 kB at 59 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0/plexus-utils-3.0.jar (226 kB at 110 kB/s)
[INFO] Deleting /home/swathi_ubu/docker/spring-framework-petclinic/target
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  20.172 s
[INFO] Finished at: 2025-03-21T09:28:38Z
[INFO] ------------------------------------------------------------------------
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ mvn install
[INFO] Scanning for projects...
[INFO]
[INFO] -------< org.springframework.samples:spring-framework-petclinic >-------
[INFO] Building Spring Framework Petclinic 6.1.4
[INFO] --------------------------------[ war ]---------------------------------
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-war-plugin/3.4.0/maven-war-plugin-3.4.0.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-war-plugin/3.4.0/maven-war-plugin-3.4.0.pom (8.4 kB at
8.7 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-war-plugin/3.4.0/maven-war-plugin-3.4.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-war-plugin/3.4.0/maven-war-plugin-3.4.0.jar (83 kB at 3
35 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-install-plugin/2.4/maven-install-plugin-2.4.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-install-plugin/2.4/maven-install-plugin-2.4.pom (6.4 kB
 at 17 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/23/maven-plugins-23.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/23/maven-plugins-23.pom (9.2 kB at 74 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/22/maven-parent-22.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/22/maven-parent-22.pom (30 kB at 164 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/apache/11/apache-11.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/apache/11/apache-11.pom (15 kB at 12 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-install-plugin/2.4/maven-install-plugin-2.4.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-install-plugin/2.4/maven-install-plugin-2.4.jar (27 kB
at 24 kB/s)
```

```
swathi_ubu@DESKTOP-65I62S
ramework-petclinic/6.1.4/spring-framework-petclinic-6.1.4.pom
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  02:54 min
[INFO] Finished at: 2025-03-21T09:34:55Z
[INFO] ------------------------------------------------------------------------
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ mvn package
[INFO] Scanning for projects...
[INFO]
[INFO] -------< org.springframework.samples:spring-framework-petclinic >-------
[INFO] Building Spring Framework Petclinic 6.1.4
[INFO] --------------------------------[ war ]---------------------------------
[INFO]
[INFO] --- maven-enforcer-plugin:3.4.1:enforce (enforce-maven) @ spring-framework-petclinic ---
[INFO] Rule 0: org.apache.maven.enforcer.rules.version.RequireMavenVersion passed
[INFO]
[INFO] --- jacoco-maven-plugin:0.8.11:prepare-agent (prepare-agent) @ spring-framework-petclinic ---
[INFO] argLine set to -javaagent:/home/swathi_ubu/.m2/repository/org/jacoco/org.jacoco.agent/0.8.11/org.jacoco.agent-0.8.11-runtime.jar=destfile=/ho
me/swathi_ubu/docker/spring-framework-petclinic/target/jacoco.exec
[INFO]
[INFO] --- maven-resources-plugin:3.3.1:resources (default-resources) @ spring-framework-petclinic ---
[INFO] Copying 21 resources from src/main/resources to target/classes
[INFO]
[INFO] --- maven-compiler-plugin:3.11.0:compile (default-compile) @ spring-framework-petclinic ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:3.3.1:testResources (default-testResources) @ spring-framework-petclinic ---
[INFO] Copying 11 resources from src/test/java to target/test-classes
[INFO] Copying 1 resource from src/test/resources to target/test-classes
[INFO]
[INFO] --- maven-compiler-plugin:3.11.0:testCompile (default-testCompile) @ spring-framework-petclinic ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:3.2.3:test (default-test) @ spring-framework-petclinic ---
```

```
swathi_ubu@DESKTOP-65I62S
[INFO] Processing war project
[INFO] Copying webapp resources [/home/swathi_ubu/docker/spring-framework-petclinic/src/main/webapp]
[INFO] Building war: /home/swathi_ubu/docker/spring-framework-petclinic/target/petclinic.war
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  54.778 s
[INFO] Finished at: 2025-03-21T09:36:14Z
[INFO] ------------------------------------------------------------------------
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ cd target
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic/target$ ls
classes            generated-test-sources  maven-archiver  petclinic      site             test-classes
generated-sources  jacoco.exec             maven-status    petclinic.war  surefire-reports
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic/target$ cd ..
```

10. Start Minikube.

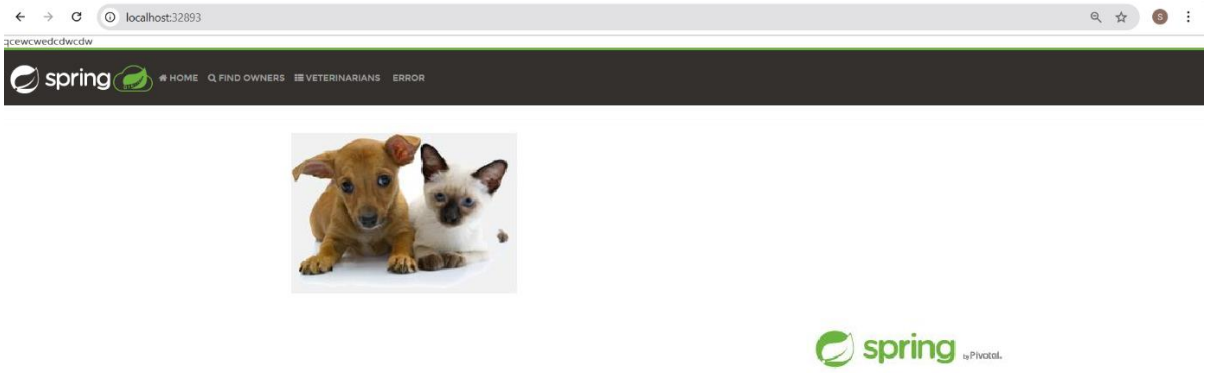
11. Create the Kubernetes deployment.

12. Expose the deployment.

13. Expose the service using Minikube and obtain the URL.

```
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ docker build -t petclinic .
failed to fetch metadata: fork/exec /usr/local/lib/docker/cli-plugins/docker-buildx: exec format error

DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  101.5MB
Step 1/4 : FROM tomcat:latest
 ---> 1374a565d512
Step 2/4 : COPY target/*.war /usr/local/tomcat/webapps/ROOT.war
 ---> 7b55347390 70
Step 3/4 : EXPOSE 8080
 ---> Running in 5618e7f4132c
 ---> Removed intermediate container 5618e7f4132c
 ---> 27b19ea2f4d3
Step 4/4 : CMD ["catalina.sh", "run"]
 ---> Running in f6a3f2d32c73
 ---> Removed intermediate container f6a3f2d32c73
 ---> 1387d3553a01
Successfully built 1387d3553a01
Successfully tagged petclinic:latest
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$
```

```
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ docker login
Log in with your Docker ID or email address to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.
com/ to create one.
You can log in with your password or a Personal Access Token (PAT). Using a limited-scope PAT grants better security and is required for organizatio
ns using SSO. Learn more at https://docs.docker.com/go/access-tokens/

Username: swathie1701
Password:
Login Succeeded
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ docker tag petclinic:latest swathie1701/petclinic:latest
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ docker push swathie1701/petclinic:latest
The push refers to repository [docker.io/swathie1701/petclinic]
a10b6847b9f1: Mounted from library/tomcat
4f4fb700ef54: Mounted from library/tomcat
e231914ca483: Mounted from library/tomcat
5a7813e071bf: Mounted from library/tomcat
13c51899ca78: Pushed
8dbbbc6af9dc: Mounted from library/tomcat
dcc1c5ea3c7d: Mounted from library/tomcat
91e6cc55403a: Mounted from library/tomcat
5d4660d0a9e9: Mounted from library/tomcat
latest: digest: sha256:1387d3553a0157fb639e66ffe1ade0becd0b6571f4803fc736f83bed76444a73 size: 2485
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ docker images
REPOSITORY              TAG       IMAGE ID       CREATED          SIZE
petclinic               latest    1387d3553a01   9 minutes ago    872MB
swathie1701/petclinic   latest    1387d3553a01   9 minutes ago    872MB
swathie1701/devops      latest    f5a770b3ae21   2 hours ago      282MB
test1                   latest    f5a770b3ae21   2 hours ago      282MB
ar8888/dev              latest    76bb6573eb45   5 hours ago      282MB
test                    latest    76bb6573eb45   5 hours ago      282MB
tomcat                  latest    1374a565d512   2 weeks ago      783MB
nginx                   latest    124b44bfc9cc   6 weeks ago      279MB
swathie1701/dev         latest    124b44bfc9cc   6 weeks ago      279MB
<none>                  <none>    cef9f3c2e399   2 months ago     1.86GB
kicbase/stable          v0.0.46   fd2d445ddcc3   2 months ago     1.86GB
```

```
^C
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ minikube start
😄  minikube v1.35.0 on Ubuntu 24.04 (amd64)
✨  Using the docker driver based on existing profile
👍  Starting "minikube" primary control-plane node in "minikube" cluster
🚜  Pulling base image v0.0.46 ...
🏃  Updating the running docker "minikube" container ...
🐳  Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
🔎  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
swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

swathi_ubu@DESKTOP-65I62SV:~/docker/spring-framework-petclinic$ kubectl create deployment r1 --image=swathie1701/petclinic --port=8080
deployment.apps/r1 created
```

14. Use the URL to view the output in the browser.