Creating and Pushing your own docker image.

Abstract:
In this project we make own docker ubuntu and push it to public docker repository.
In this Docker image we have to install java and run any java file in it.

Introduction:
Docker can build images automatically by reading the instructions from a Dockerfile. A Dockerfile is a text document that contains all the commands a user could call on the command line to assemble an image. Using docker build users can create an automated build that executes several command-line instructions in succession.
The docker build command builds an image from a Dockerfile and a *context*. The build's context is the files at a specified location PATH or URL. The PATH is a directory on your local filesystem. The URL is a Git repository location.
A context is processed recursively. So, a PATH includes any subdirectories and the URL includes the repository and its submodules.
The build is run by the Docker daemon, not by the CLI. The first thing a build process does is send the entire context (recursively) to the daemon. In most cases, it's best to start with an empty directory as context and keep your Dockerfile in that directory. Add only the files needed for building the Dockerfile

Implementation:
Steps of Implementation:
Step 1:- Create an account on Docker and log in to it.
Step 2:- Download docker for Windows and install it.
Step 3:- run Hello-world image from docker hub.
Step 4:- If output is correct then Docker is properly installed.
Step 5:- Pull a ubuntu image.
Step 6:-.Install java in it.
Step 7:- Install any editor like emacs, vim, etc.
Step 8:- Create any java file and edit it using editor.
Step 9:- Compile and run any java file.
Step 10:- Login in Docker in console.
Step 11:- Tag the docker image and then push it.
Step 12:- Push the docker image in docker hub.

Result:
Implementation:

```
root@5e14f92bbf4f: /
Starting "default"...
(default) Check network to re-create if needed...
(default) Waiting for an IP...
Machine "default" was started.
Waiting for SSH to be available...
Detecting the provisioner...
Started machines may have new IP addresses. You may need to re-run the `docker-machine env` command.
Regenerate TLS machine certs?  Warning: this is irreversible. (y/n): Regenerating TLS certificates
Waiting for SSH to be available...
Detecting the provisioner...
Copying certs to the local machine directory...
Copying certs to the remote machine...
Setting Docker configuration on the remote daemon...


                        ##         .
                  ## ## ##        ==
               ## ## ## ## ##    ===
           /""""""""""""""""\___/ ===
      ~~~ {~~ ~~~~ ~~~ ~~~~ ~~~ ~ /  ===- ~~~
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             \    \         __/
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docker is configured to use the default machine with IP 192.168.99.100
For help getting started, check out the docs at https://docs.docker.com

Start interactive shell

Owner@KamathPC MINGW64 ~ (master)
$ docker run -it ratedrworld/ccl-ubuntu
time="2017-04-20T22:12:47+05:30" level=info msg="Unable to use system certificate pool: crypto/x509: system root pool is not available on Windows"
root@5e14f92bbf4f:/#
```

```
root@5e14f92bbf4f: /home
Starting "default"...
(default) Check network to re-create if needed...
(default) Waiting for an IP...
Machine "default" was started.
Waiting for SSH to be available...
Detecting the provisioner...
Started machines may have new IP addresses. You may need to re-run the `docker-machine env` command.
Regenerate TLS machine certs?  Warning: this is irreversible. (y/n): Regenerating TLS certificates
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root@5e14f92bbf4f:/# cd home
root@5e14f92bbf4f:/home# ls~
bash: ls~: command not found
root@5e14f92bbf4f:/home# ls
server.class  server.java
root@5e14f92bbf4f:/home#
```

```
root@5e14f92bbf4f: /home
Starting "default"...
(default) Check network to re-create if needed...
(default) Waiting for an IP...
Machine "default" was started.
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root@5e14f92bbf4f:/home# ls~
bash: ls~: command not found
root@5e14f92bbf4f:/home# ls
server.class  server.java
root@5e14f92bbf4f:/home# touch adsf.java
root@5e14f92bbf4f:/home#
```

```
root@5e14f92bbf4f: /home
class HelloWorld {
   public static void main(String[] args) {
      // Prints "Hello, World" in the terminal window.
      System.out.println("Hello, World");
   }
}
~
```

```


                        ##         .
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           /""""""""""""""""\___/ ===
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root@5e14f92bbf4f:/# cd home
root@5e14f92bbf4f:/home# ls~
bash: ls~: command not found
root@5e14f92bbf4f:/home# ls
server.class  server.java
root@5e14f92bbf4f:/home# touch adsf.java
root@5e14f92bbf4f:/home# vim asdf.java
root@5e14f92bbf4f:/home# javac asdf.java
root@5e14f92bbf4f:/home# java HelloWorld
Hello, World
root@5e14f92bbf4f:/home#
```

```
root@5e14f92bbf4f:/home# ls
server.class  server.java
root@5e14f92bbf4f:/home# touch adsf.java
root@5e14f92bbf4f:/home# vim asdf.java
root@5e14f92bbf4f:/home# javac asdf.java
root@5e14f92bbf4f:/home# java HelloWorld
Hello, World
root@5e14f92bbf4f:/home# ls
HelloWorld.class  adsf.java  asdf.java  server.class  server.java
root@5e14f92bbf4f:/home# docker login
bash: docker: command not found
root@5e14f92bbf4f:/home# exit
exit
```

```
Owner@kamathPC MINGW64 ~ (master)
$ docker login
time="2017-04-20T22:18:16+05:30" level=info msg="Unable to use system certificate pool: crypto/x509: system root pool is not available on Windows"
Login with your Docker ID 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.
Username (ratedrworld): ratedrworld
Password:
Login Succeeded

Owner@kamathPC MINGW64 ~ (master)
$

exit

Owner@kamathPC MINGW64 ~ (master)
$ docker login
time="2017-04-20T22:18:16+05:30" level=info msg="Unable to use system certificate pool: crypto/x509: system root pool is not available on Windows"
Login with your Docker ID 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.
Username (ratedrworld): ratedrworld
Password:
Login Succeeded

Owner@kamathPC MINGW64 ~ (master)
$ docker images
time="2017-04-20T22:19:19+05:30" level=info msg="Unable to use system certificate pool: crypto/x509: system root pool is not available on Windows"
REPOSITORY                TAG                 IMAGE ID            CREATED             SIZE
ratedrworld/ccl-ubuntu    latest              a5fb5e63c647        20 hours ago        1.18 GB
ratedrworld/ccl           latest              a5fb5e63c647        20 hours ago        1.18 GB
ubuntu                    latest              6a2f32de169d        7 days ago          117 MB
hello-world               latest              48b5124b2768        3 months ago        1.84 kB

Owner@kamathPC MINGW64 ~ (master)
$

hello-world               latest              48b5124b2768        3 months ago        1.84 kB

Owner@kamathPC MINGW64 ~ (master)
$ docker push ratedrworld/ccl:latest
time="2017-04-20T22:20:11+05:30" level=info msg="Unable to use system certificate pool: crypto/x509: system root pool is not available on Windows"
The push refers to a repository [docker.io/ratedrworld/ccl]
3c9bf9dd57bc: Layer already exists
ab4b9ad8d212: Layer already exists
57e913ee49e5: Layer already exists
2ea6deead2b0: Layer already exists
7cbd4b94e525: Layer already exists
e86a0c422723: Layer already exists
latest: digest: sha256:8fb89e863edd20a331dcc7861957465aee24a702057c82dcdd02780bcac54fdb size: 1570

Owner@kamathPC MINGW64 ~ (master)
$ docker push ratedrworld/ccl-ubuntu:latest
time="2017-04-20T22:20:31+05:30" level=info msg="Unable to use system certificate pool: crypto/x509: system root pool is not available on Windows"
The push refers to a repository [docker.io/ratedrworld/ccl-ubuntu]
3c9bf9dd57bc: Mounted from ratedrworld/ccl
ab4b9ad8d212: Mounted from ratedrworld/ccl
57e913ee49e5: Mounted from ratedrworld/ccl
2ea6deead2b0: Mounted from ratedrworld/ccl
7cbd4b94e525: Mounted from ratedrworld/ccl
e86a0c422723: Mounted from ratedrworld/ccl
latest: digest: sha256:8fb89e863edd20a331dcc7861957465aee24a702057c82dcdd02780bcac54fdb size: 1570

Owner@kamathPC MINGW64 ~ (master)
$
```

Conclusion:

Hence we have created our own docker image and pushed it to the docker repository.

References:

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www.youtube.com
www.Linuxconfig.org
https://shameerarathnayaka.wordpress.com/2015/07/19/how-to-install-oracle-java-8-7-on-ubuntu-based-image/