Class Assignment / Homework IV

Part 1: Setup Jenkins on your machine

- 1. Use the Dockerfile and the docker-compose.yml files;
- 2. Start the orchestration, unlock Jenkins, select plugins to install, create your admin profile, create an ngrok temporary public URL, setup your secret credentials (GitHub and Docker Hub);

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                                                    bojan@bojan-VirtualBox: ~/jenkins
bojan@bojan-VirtualBox:~$ cd jenkins/
bojan@bojan-VirtualBox:~/jenkins$
bojan@bojan-VirtualBox:~/jenkins$ nano Dockerfile
bojan@bojan-VirtualBox:~/jenkins$ nano docker-compose.yml
                               bojan@bojan-VirtualBox: ~/jenkins
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  J∓l
  GNU nano 6.2
                                           Dockerfile
FROM jenkins/jenkins:2.440.2-jdk17
USER root
RUN apt-get update && apt-get install -y lsb-release
RUN curl -fsSLo /usr/share/keyrings/docker-archive-keyring.asc \
 https://download.docker.com/linux/debian/gpg
RUN echo "deb [arch=$(dpkg --print-architecture) \
  signed-by=/usr/share/keyrings/docker-archive-keyring.asc] \
  https://download.docker.com/linux/debian \
  $(lsb_release -cs) stable" > /etc/apt/sources.list.d/docker.list
RUN apt-get update && apt-get install -y docker-ce-cli
USER jenkins
RUN jenkins-plugin-cli --plugins "blueocean docker-workflow"
```

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bojan@bojan-VirtualBox: ~/jenkins
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```
GNU nano 6.2
                                                             docker-compose.yml
version: '3.1'
services:
  docker:
      image: docker:dind
      privileged: true
      environment:
         - DOCKER_TLS_CERTDIR=/certs
      volumes:

    ./jenkins-docker-certs:/certs/client

         - ./jenkins-data:/var/jenkins home
   jenkins-blueocean:
      build: .
      environment:
         DOCKER_HOST=tcp://docker:2376

    DOCKER_CERT_PATH=/certs/client

         - DOCKER TLS VERIFY=0
      ports:
         - 8080:8080
         - 50000:50000
      volumes:
         ./jenkins-data:/var/jenkins_home
           ./jenkins-docker-certs:/certs/client:ro
networks:
   jenkins:
      name: jenkins
      driver: bridge
```

```
bojan@bojan-VirtualBox: ~/jenkins
ed'))
bojan@bojan-VirtualBox:~/jenkins$ sudo docker-compose up -d
[sudo] password for bojan:
WARNING: Some networks were defined but are not used by any service: jenkins Creating network "jenkins_default" with the default driver
Pulling docker (docker:dind)...
dind: Pulling from library/docker
4abcf2066143: Pull complete
c6dd7fda0220: Pull complete
4f4fb700ef54: Pull complete
c3cdfe127e63: Pull complete
Of2b6d6f61c1: Pull complete
99ef9d78a450: Pull complete
aa022d7f0c8d: Pull complete
d9ef7eb639b9: Pull complete
eee617bc1d24: Pull complete
ecd4613e45a4: Pull complete
7447ac55f625: Pull complete
9592191e2288: Pull complete
b19879be94c1: Pull complete
fae32ca6a76a: Pull complete
4a7e7783f2c0: Pull complete
9b8d2035cc39: Pull complete
Digest: sha256:016c45d9e31461802186e8e9aaa394f35e173a8ce913ea7195a672cdc97102f2
Status: Downloaded newer image for docker:dind
Building jenkins-blueocean
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 4.096kB
```

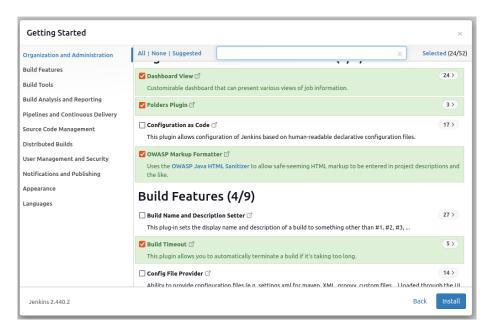
```
---> c6d958e33bac
Successfully built c6d958e33bac
Successfully tagged jenkins-jenkins-blueocean:latest
WARNING: Image for service jenkins-blueocean was built because it did not already exist. To rebuild this image you must use `docker-
compose build` or `docker-compose up --build`.
Creating jenkins_docker_1 ... done
Creating jenkins_jenkins-blueocean_1 ... done
```

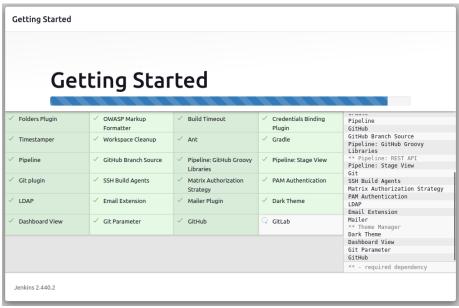
```
bojan@bojan-VirtualBox:~/jenkins$
bojan@bojan-VirtualBox:~/jenkins$ ls -l
total 16
-rw-rw-r-- 1 bojan bojan 647 map 29 11:31 docker-compose.yml
-rw-rw-r-- 1 bojan bojan 564 map 29 11:30 Dockerfile
drwxr-xr-x 2 root root 4096 map 29 11:42 jenkins-data
drwxr-xr-x 2 root root 4096 map 29 11:42 jenkins-docker-certs
bojan@bojan-VirtualBox:~/jenkins$
```

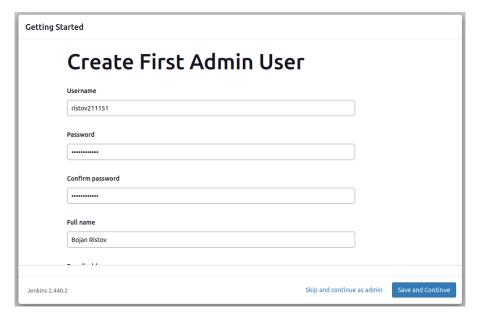
```
bojan@bojan-VirtualBox:~/jenkins$
bojan@bojan-VirtualBox:~/jenkins$ sudo docker-compose ps
WARNING: Some networks were defined but are not used by any service: jenkins
                                              Command State Ports
            Name
jenkins_docker_1 dockerd-entrypoint.sh Up
jenkins_jenkins-blueocean_1 /usr/bin/tini -- /usr/loca ... Exit 1
bojan@bojan-VirtualBox:~/jenkins$
bojan@bojan-VirtualBox:~/jenkins$ sudo chmod -R 777 jenkins-data
bojan@bojan-VirtualBox:~/jenkins$ sudo docker-compose ps
                                                                                        2375/tcp, 2376/tcp
 WARNING: Some networks were defined but are not used by any service: jenkins
                                                                                                 Ports
                                                  Command
                                                                             State
            Name
jenkins_docker_1 dockerd-entrypoint.sh Up 2375/tcp, 2376/tcp
jenkins_jenkins-blueocean_1 /usr/bin/tini -- /usr/loca ... Exit 1
bojan@bojan-VirtualBox:~/jenkins$
bojan@bojan-VirtualBox:~/jenkins$ sudo docker-compose logs
 WARNING: Some networks were defined but are not used by any service: jenkins
Attaching to jenkins_jenkins-blueocean_1, jenkins_docker_1

docker_1 | Certificate request self-signature ok
                            subject=CN = docker:dind server
                             /certs/server/cert.pem: OK
                            Certificate request self-signature ok subject=CN = docker:dind client
                             /certs/client/cert.pem: OK
                             iptables v1.8.10 (nf_tables)
                             time="2024-03-29T10:42:42.279337471Z" level=info msg="Starting up"
time="2024-03-29T10:42:42.280597907Z" level=info msg="containerd not running, startin
```

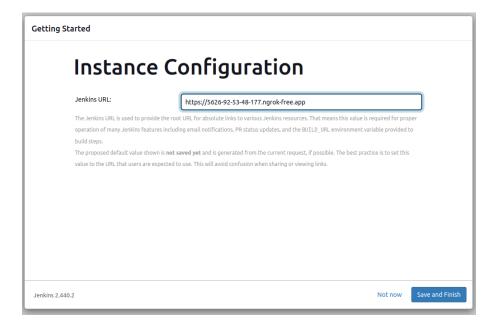
To ensure Jenkins is securely set up by the administrator, a password has been writted to the log (not sure where to find it?) and this file on the server: /var/jenkins_home/secrets/initialAdminPassword Please copy the password from either location and paste it below. Administrator password	Unlock J	lenkins
Please copy the password from either location and paste it below.		
Administrator password	/var/jenkins_home/s	secrets/initialAdminPassword
	Please copy the pass	word from either location and paste it below.
	Administrator password	
(

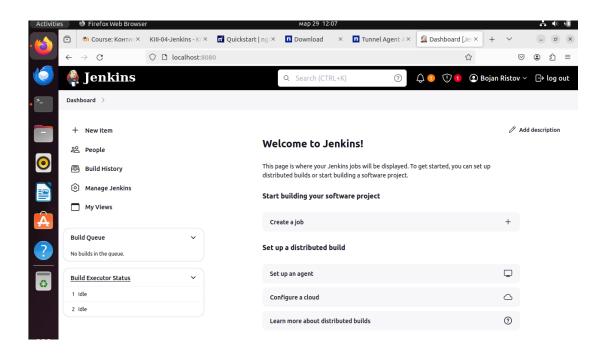


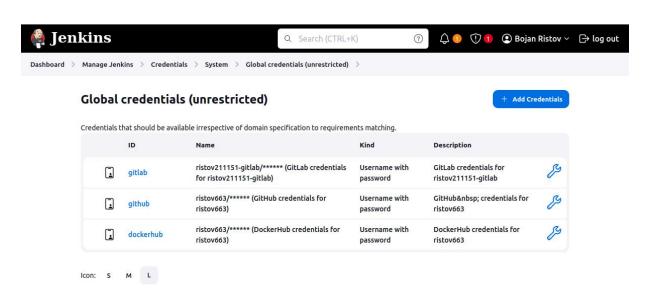




ngrok									
Full request capture now available in your browser: https://ngrok.com/r/ti									
Session Status	online								
Account	Bojan R	istov (P	lan: Free	e)					
Update	update	availabl	e (versi	on 3.8.0	, Ctrl-U	to update)			
Version	3.7.0								
Region	Europe	(eu)							
Web Interface	http://127.0.0.1:4040								
Forwarding	https://5626-92-53-48-177.ngrok-free.app -> http://localhost:80								
Connections	ttl	opn	rt1	rt5	p50	p90			
	0	0	0.00	0.00	0.00	0.00			

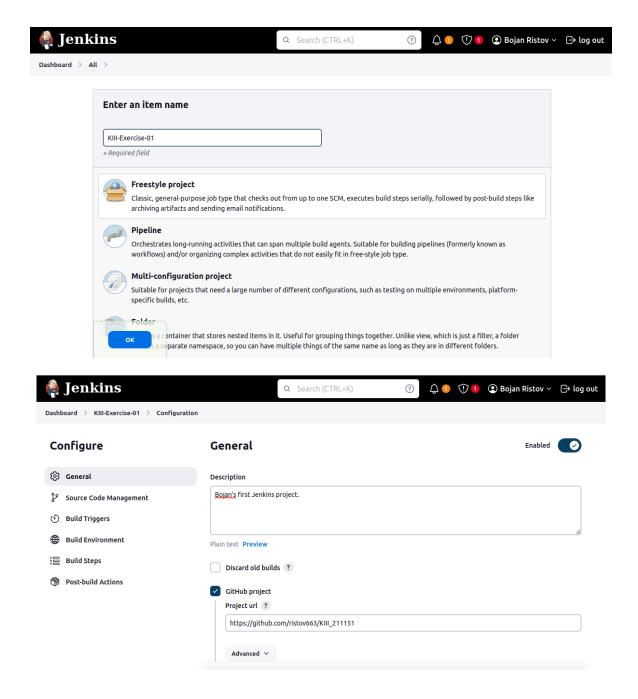


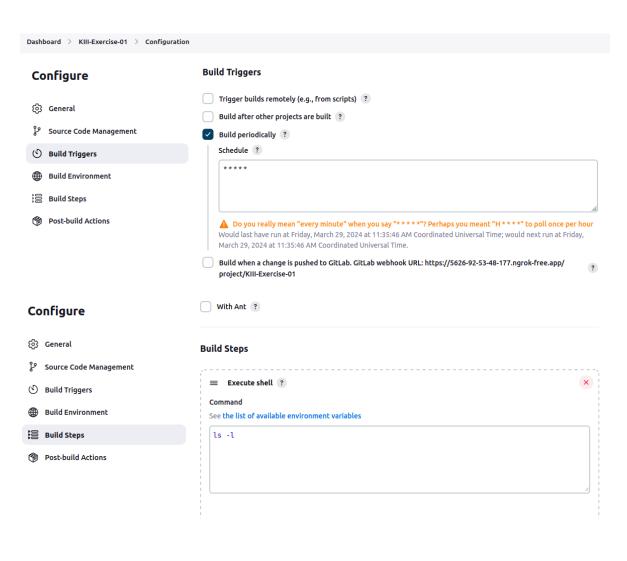


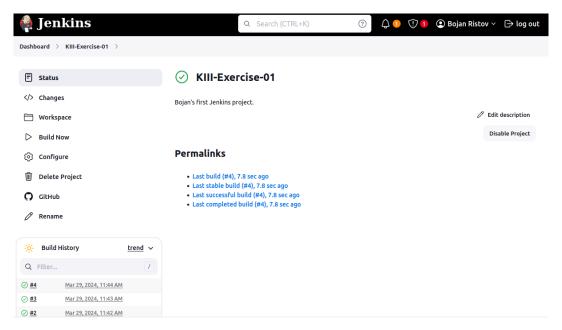


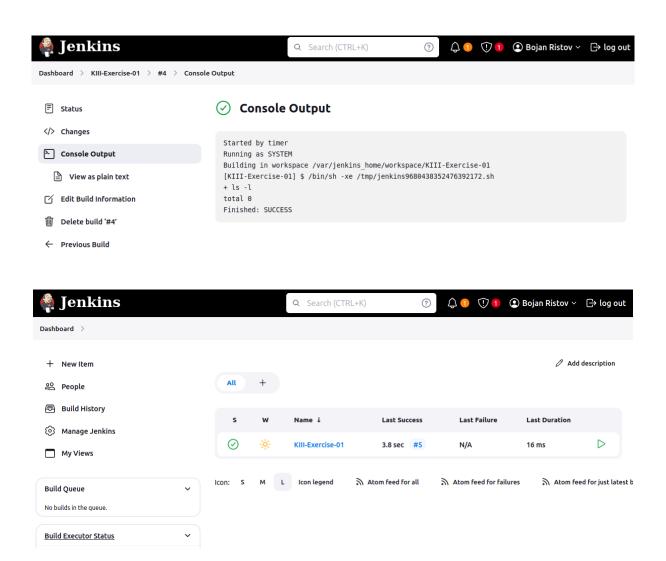
Part 2: Create a Freestyle project

- 1. Connect it to a simple GitHub repository from your account;
- 2. Add a Build Step with a simple Is -I command;
- 3. Set up an automatic build, on each minute;



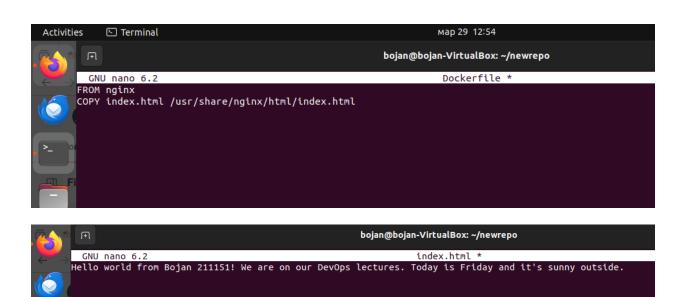






Part 3: Create a Pipeline in Blue Ocean

- 1. Create a new GitHub repository with the supplied Dockerfile and Jenkinsfile files; Modify the Jenkinsfile to match your repo and credentials;
- 2. Create a new Pipeline with Blue Ocean and connect it to the GitHub repo;
- 3. Create a Webhook in the GitHub repository;
- 4. Make changes in the GitHub repo, and see the automatic Pipeline run happening in Jenkins;
- 5. Create a new 'dev' branch in the repo. Make a change in it. Create a pull request from 'dev' to 'main'. Accept the PR and merge the changes. Watch what happens in Jenkins.

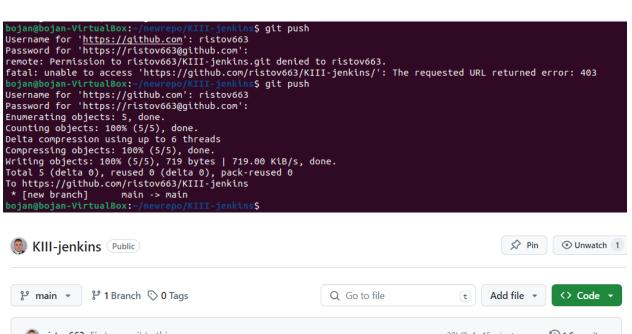


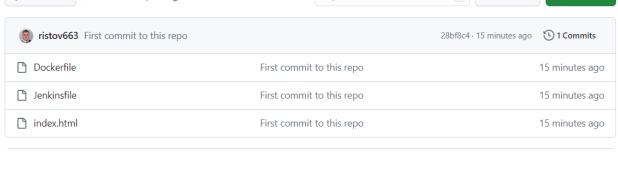
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```
GNU nano 6.2

node {
    def app
    stage('Clone repository') {
        checkout scm
    }
    stage('Build image') {
        app = docker.build("ristov663/KIII-jenkins")
    }
    stage('Push image') {
        docker.withRegistry('https://registry.hub.docker.com', 'dockerhub') {
            app.push("${env.BRANCH_NAME}-${env.BUILD_NUMBER}")
            app.push("${env.BRANCH_NAME}-latest")
            // signal the orchestrator that there is a new version
      }
    }
}
```

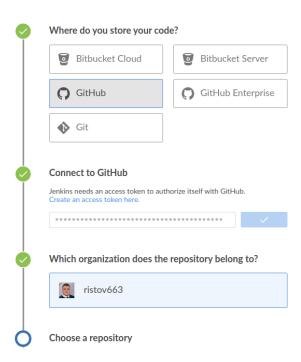
```
bojan@bojan-VirtualBox:~/newrepo$ sudo git clone https://github.com/ristov663/KIII-jenkins
fatal: destination path 'KIII-jenkins' already exists and is not an empty directory.
bojan@bojan-VirtualBox:~/newrepo$ cd KIII-jenkins
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ git status
On branch main
No commits yet
nothing to commit (create/copy files and use "git add" to track)
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ nano Dockerfile
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ nano index.html
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ nano Jenkinsfile
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ git status
On branch main
No commits yet
Untracked files:
 (use "git add <file>..." to include in what will be committed)
nothing added to commit but untracked files present (use "git add" to track)
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ git add Dockerfile
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ git add index.html
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ git add Jenkinsfile
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$
bojan@bojan-VirtualBox:~/newrepo/KIII-jenkins$ git status
On branch main
No commits yet
```

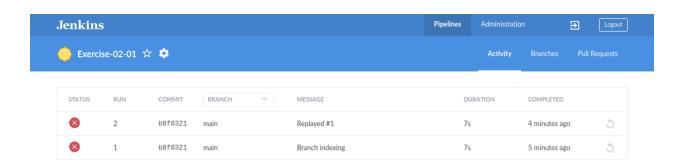




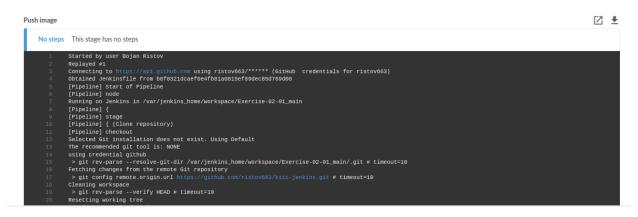


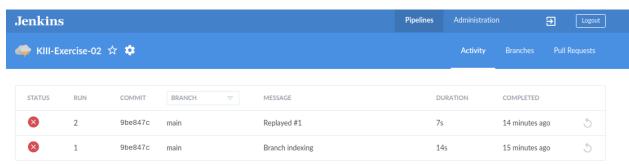


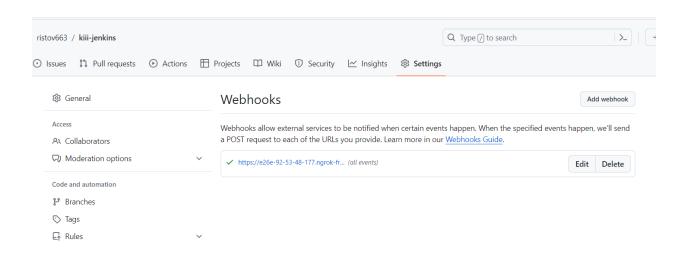


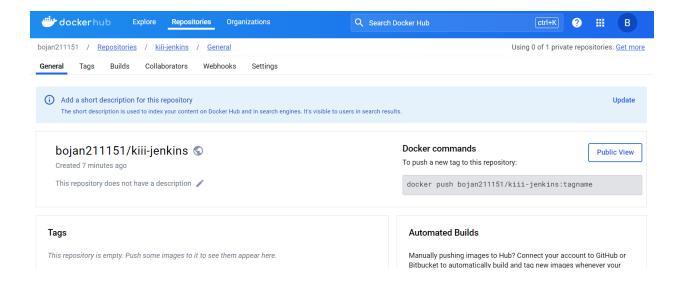












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