

LAB ASSIGNMENTS

ADVANCE PYTHON PROGRAMMING

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Q) web application using docker

Code:

```
# Create project directory
```

```
mkdir -p ~/demo-docker-website/site/static && cd ~/demo-docker-website
```

```
# Create index.html
```

```
cat > site/index.html <<'EOF'
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
  <meta charset="UTF-8">
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
  <title>Docker Web App</title>
```

```
  <link rel="stylesheet" href="static/style.css">
```

```
</head>
```

```
<body>
```

```
  <div class="container">
```

```
    <h1>Welcome to the Docker Web App!</h1>
```

```
    <p>This page is served by Nginx inside a Docker container.</p>
```

```
    <button id="btn">Click Me</button>
```

```
<p id="count">You've clicked 0 times.</p>
</div>
<script src="static/script.js"></script>
</body>
</html>
EOF
```

Create style.css

```
cat > site/static/style.css <<'EOF'
```

```
body {
  font-family: Arial, sans-serif;
  background: linear-gradient(120deg, #4facfe, #00f2fe);
  color: #fff;
  text-align: center;
  margin: 0;
  height: 100vh;
  display: flex;
  justify-content: center;
  align-items: center;
}
.container {
  background: rgba(0,0,0,0.3);
  padding: 40px;
  border-radius: 20px;
  box-shadow: 0 0 20px rgba(0,0,0,0.5);
}
```

```
button {  
  padding: 10px 20px;  
  font-size: 16px;  
  border: none;  
  border-radius: 8px;  
  cursor: pointer;  
  background-color: #fff;  
  color: #333;  
}  
button:hover {  
  background-color: #f2f2f2;  
}  
EOF
```

Create script.js

```
cat > site/static/script.js <<'EOF'  
  
let count = 0;  
  
const btn = document.getElementById('btn');  
const display = document.getElementById('count');  
btn.addEventListener('click', () => {  
  count++;  
  display.textContent = `You've clicked ${count} times.`;  
});  
EOF
```

Create nginx.conf

```
cat > nginx.conf <<'EOF'
```

```
events {}
```

```
http {
```

```
    include    mime.types;
```

```
    default_type application/octet-stream;
```

```
server {
```

```
    listen 80;
```

```
    server_name localhost;
```

```
    location / {
```

```
        root /usr/share/nginx/html;
```

```
        index index.html;
```

```
    }
```

```
    location /static/ {
```

```
        root /usr/share/nginx/html;
```

```
    }
```

```
    error_page 404 /index.html;
```

```
}
```

```
}
```

```
EOF
```

```
# Create Dockerfile
```

```
cat > Dockerfile <<'EOF'

FROM nginx:alpine

COPY nginx.conf /etc/nginx/nginx.conf

COPY site/ /usr/share/nginx/html/

EXPOSE 80

EOF
```

Build Docker image

```
docker build -t docker-web-app .
```

Run container

```
docker run -d -p 8080:80 docker-web-app
```

output:



```
adv-python-22mid0278 [Codespaces: humble space fishstick]
bash - demo-docker-website

@harshu2215 → /workspaces/adv-python-22mid0278 (main) $ mkdir ~/demo-docker-website
cd ~/demo-docker-website
mkdir: cannot create directory '/home/codespace/demo-docker-website': File exists
@harshu2215 → ~/demo-docker-website $ cd ~/demo-docker-website
@harshu2215 → ~/demo-docker-website $ mkdir -p site/static site
touch site/index.html site/static/style.css site/static/script.js nginx.conf Dockerfile
@harshu2215 → ~/demo-docker-website $ cat > site/index.html <<'EOF'
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Docker Web App</title>
  <link rel="stylesheet" href="static/style.css">
</head>
<body>
  <div class="container">
    EOFhtml>pt src="static/script.js"></script></p>Docker container.</p>
  EOF
@harshu2215 → ~/demo-docker-website $ cat > site/static/style.css <<'EOF'
body {
  font-family: Arial, sans-serif;
  background: linear-gradient(120deg, #00f2fe, #00f2fe);
  color: #fff;
  text-align: center;
  margin: 0;
  height: 100vh;
  display: flex;
  justify-content: center;
  align-items: center;
  EOFbackground-color: #f2f2f2;0,0,0,0.5);
@harshu2215 → ~/demo-docker-website $ cat > site/static/script.js <<'EOF'
let count = 0;
const btn = document.getElementById('btn');
const display = document.getElementById('count');

btn.addEventListener('click', () => {
  main
  2
```

```
adv-python-22mid0278 [Codespaces: humble space fishstick]
bash - demo-docker-website

@harshu2215 → ~/demo-docker-website $ cat > site/static/script.js <<'EOF'
let count = 0;
const btn = document.getElementById('btn');
const display = document.getElementById('count');

btn.addEventListener('click', () => {
  count++;
  display.textContent = `You've clicked ${count} times.`;
});
EOF
@harshu2215 → ~/demo-docker-website $ cat > nginx.conf <<'EOF'
events {}

http {
  include mime.types;
  default_type application/octet-stream;

  server {
    listen 80;
    server_name localhost;

    EOF error_page 404 /index.html;1;
@harshu2215 → ~/demo-docker-website $ docker build -t docker-web-app .
docker run -d -p 8080:80 docker-web-app
[+] Building 1.6s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 137B 0.0s
=> [internal] load metadata for docker.io/library/nginx:alpine 1.4s
=> [auth] library/nginx:pull token for registry-1.docker.io 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [1/3] FROM docker.io/library/nginx:alpine@sha256:b3c656d55d7ad751196f21b7fd2e8d4da9cb430e32f646adcf92441b72f82b14 0.0s
=> [internal] load build context 0.0s
=> => transferring context: 1.88kB 0.0s
=> CACHED [2/3] COPY nginx.conf /etc/nginx/nginx.conf 0.0s
=> [3/3] COPY site/ /usr/share/nginx/html/ 0.0s
```

