

ADVANCED PYTHON PROGRAMMING

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DOCKER IMPLEMENTATION:

Step 1: Install Docker Desktop

Download and Installation

1. Visit: <https://www.docker.com/products/docker-desktop/>
2. Download Docker Desktop for your OS (Windows/Mac)
3. Run the installer and follow setup wizard
4. Restart computer when prompted
5. Skip login/signup when Docker starts (optional)

Verification

`docker --version`

Step 2: Create Project Structure

Folder Structure

my_docker_website/

└─ Dockerfile

└─ html/

└─ index.html

└─ styles.css

Implementation Steps

1. Create folder my_docker_website on D: drive
2. Inside it, create html folder
3. Create three files with the content below

Step 3:create required files:

File 1: Dockerfile

```
FROM nginx:alpine
```

```
COPY html/ /usr/share/nginx/html
```

```
EXPOSE 80
```

File 2: index.html

```
<!DOCTYPE html>
```

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

```
<head>
```

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

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

```
  <title>My Simple Docker Website</title>
```

```
<link rel="stylesheet" href="styles.css">
</head>
<body>
  <header>
    <h1>My Awesome Site</h1>
  </header>
  <main>
    <section class="hero">
      <h2>Welcome Aboard! 🚀 </h2>
      <p>This is a simple website deployed using Docker
and Nginx.</p>
      <a href="#about" class="button">Learn More</a>
    </section>
    <section id="about" class="content-box">
      <h3>About This Project</h3>
      <p>Dockerizing static content makes deployment
clean and repeatable.</p>
    </section>
  </main>
  <footer>
    <p>&copy; 2025 Simple Web Deployment</p>
  </footer>
```

```
</body>
```

```
</html>
```

File 3: styles.css

```
body {  
    font-family: 'Arial', sans-serif;  
    margin: 0;  
    padding: 0;  
    background-color: #f4f4f9;  
    color: #333;  
    line-height: 1.6;  
}
```

```
header {  
    background-color: #007bff;  
    color: white;  
    padding: 20px 0;  
    text-align: center;  
}
```

```
main {  
    max-width: 900px;  
    margin: 40px auto;
```

```
padding: 0 20px;  
}
```

```
.hero {  
  background-color: #ffffff;  
  padding: 40px;  
  border-radius: 8px;  
  text-align: center;  
  margin-bottom: 40px;  
  border-left: 5px solid #007bff;  
}
```

```
.button {  
  display: inline-block;  
  background-color: #28a745;  
  color: white;  
  padding: 10px 20px;  
  text-decoration: none;  
  border-radius: 5px;  
  margin-top: 15px;  
}
```

```
.content-box {  
    background-color: #fff;  
    padding: 30px;  
    border-radius: 8px;  
    margin-top: 20px;  
}
```

```
footer {  
    text-align: center;  
    padding: 20px 0;  
    background-color: #333;  
    color: white;  
    margin-top: 40px;  
}
```

Step 4: Build and Run Docker Container

Command Sequence

- 1. Open Command Prompt as Administrator**
- 2. Navigate to project folder:**

D:

```
cd my_docker_website
```

Build Docker image:

```
docker build -t my-website-image .
```

Run container:

```
docker run -d -p 8080:80 --name my-website-container  
my-website-image
```

Verify container is running:

```
docker ps
```

Step 5: Test the Website

Access the Website

1. Open web browser (Chrome/Firefox/Edge)
2. Navigate to: `http://localhost:8080`
3. **Expected Result:** Fully styled website with content

My Awesome Site

Welcome Aboard!

This is a simple website deployed using Docker and Nginx.

[Learn More](#)

About This Project

Dockerizing static content makes deployment clean and repeatable. No matter where you run this container, the website looks and functions exactly the same.

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