Docker Hub provides a wide variety of useful public images. However, anyone running their own software using Docker needs to know how to create images themselves. In this lesson we will discuss the Dockerfile, the primary mechanism for defining an image that we want to create. We will demonstrate some of the most common Dockerfile directives by building a simple custom Nginx image. We will also demonstrate how to build a real image using the Dockerfile and how to run that image as a container.

Relevant Documentation

- https://docs.docker.com/engine/reference/builder/

Lesson Reference

Set up a project directory:

```
mkdir ~/custom-nginx
cd ~/custom-nginx
vi index.html
```

Add a simple message to `index.html` :

```
Hello, World!
```

Create a `Dockerfile` :

```
vi Dockerfile
```

Add some directives to the `Dockerfile` :

```
# Simple nginx image
FROM ubuntu:bionic

ENV NGINX_VERSION 1.14.0-0ubuntu1.11

RUN apt-get update && apt-get install -y curl
RUN apt-get update && apt-get install -y nginx=$NGINX_VERSION

CMD ["nginx", "-g", "daemon off;"]
```

Build and test the image:

```
docker build -t custom-nginx .
docker run --name custom-nginx -d -p 8080:80 custom-nginx
curl localhost:8080
```