

Assignment Report

Issues Identified:

During the Docker setup, the following issues were identified:

1. **Port Mapping in Docker Compose:** The initial port mapping for the nginx service caused connection issues between nginx and python-app.
2. **Container Connectivity:** Missing or incorrect network settings prevented seamless communication between nginx and python-app.
3. **Syntax and Configuration Errors in Docker files:**
 - Typographical errors in file paths and package names in the Docker file for python-app.
 - Non-standard key in the Docker Compose file under the services configuration, causing runtime issues.
4. **Nginx Configuration Issues:** The nginx.conf file had incorrect proxy configurations that caused failed redirection to the application.

Resolution Steps:

1. **Port and Network Configuration:**
 - Updated the nginx service port mapping to 80:80 in docker-compose.yml to match nginx's default listening port.
 - Corrected python-app service to expose port 8000 explicitly, enabling internal networking via nginx-network.
2. **Syntax Corrections:**
 - Fixed the WORKDIR path typo from appp to app in the Python Dockerfile.
 - Corrected COPY app.py /app to COPY app.py /app to ensure the application file was correctly copied.
 - Updated the RUN command to install netifaces correctly by changing netiface to netifaces.
3. **Docker Compose File Adjustments:**
 - Removed the erroneous options key, as it is not a valid attribute in the service configuration in Docker Compose version 3.8.
4. **Nginx Configuration (nginx.conf):**
 - Configured proxy_pass with http://python_app:8000, allowing nginx to forward requests directly to python-app within the bridge network.

- Added necessary headers to nginx.conf for correct forwarding and reverse proxy setup.

5. **Build and Test:**

- Built the local-python-app image after entering the Python directory with `docker build -t local-python-app ..`
- Created an html directory in the nginx folder for static files, allowing nginx to serve content correctly.

Each of these changes was validated, ensuring successful setup, communication, and functionality of the nginx and python-app containers.