Assignment 3: Create an Open-Source Software

Project Description

In this project, I will build and serve an open-source React-based video game browser application using a `Makefile` and a shell script. This involves cloning the repository, managing dependencies with `npm`, and using the `serve` package to host the application locally.

Step 1: Prepare Directory and Environment

1. Create a working directory for this assignment:

```
mkdir -p ~/assignment3 && cd ~/assignment3
```

2. Confirm you have `make`, `npm`, and `git` installed. If not, installed them:

```
sudo apt update
sudo apt install make npm git -y
```

Step 2: Create the `Makefile`

1. Created a `Makefile` with the following content:

```
APP_DIR = react-gameapp

# Install dependencies
$(APP_DIR)/node_modules: $(APP_DIR)
    cd $(APP_DIR) && sudo apt update && sudo apt install npm -y && sudo npm
install -g serve && npm install && npx browserslist@latest --update-db -y

# Build the project using npm
build: $(APP_DIR)/node_modules
    cd $(APP_DIR) && npm run build

# Clean the build artifacts
clean:
    rm -rf $(APP_DIR)
```

2. Save this file as `Makefile` inside the `~/assignment3` directory.

Step 3: Create the Shell Script (`build.sh`)

1. Create a shell script named `build.sh` in the same directory

   (This script script runs the MakeFile script to build the reference Software):

   ```
   #!/bin/bash
   SRC_DIRECTORY=${HOME}/assignment3
   REPO_URL="https://github.com/Alais29/react-gameapp.git"
   APP_DIR=react-gameapp

   echo "SCRIPT STARTED"
   cd ${SRC_DIRECTORY}

   # Clone the repository
   git clone ${REPO_URL}
   ```

```
echo "BUILD STARTED"
# Run the Makefile to install dependencies and build the project
make build
echo "BUILD COMPLETE"

# Serve the application using serve
echo "Serving the application..."
cd ${APP_DIR}
serve -s build

echo "SCRIPT ENDED"
```

2. Make the script executable:

```
chmod +x build.sh
```

Step 4: Run the Script

- Run the script: `./build.sh`

```
SCRIPT STARTED
fatal: destination path 'react-gameapp' already exists and is not an empty directory.
BUILD STARTED
cd react-gameapp && npm run build

> game-app@0.1.0 build
> react-scripts build

Creating an optimized production build...
Browserslist: caniuse-lite is outdated. Please run:
  npx browserslist@latest --update-db
  Why you should do it regularly: https://github.com/browserslist/browserslist#browsers-data-updating
Browserslist: caniuse-lite is outdated. Please run:
  npx browserslist@latest --update-db
  Why you should do it regularly: https://github.com/browserslist/browserslist#browsers-data-updating
Compiled successfully.

File sizes after gzip:

  184.17 kB  build/static/js/main.cab8bf94.js
  1.21 kB    build/static/css/main.a620d49d.css

The project was built assuming it is hosted at /.
You can control this with the homepage field in your package.json.

The build folder is ready to be deployed.
You may serve it with a static server:

  serve -s build

Find out more about deployment here:

  https://cra.link/deployment

BUILD COMPLETE
Serving the application...
 UPDATE  The latest version of `serve` is 14.2.4

   ┌──────────────────────────────────────────┐
   │                                          │
   │   Serving!                               │
   │                                          │
   │   - Local:    http://localhost:3000      │
   │   - Network:  http://192.168.248.128:3000 │
   │                                          │
   │   Copied local address to clipboard!     │
   │                                          │
   └──────────────────────────────────────────┘
```

This did the following:

- Cloned the `react-gameapp` repository.
- Installed all dependencies using the `Makefile`.
- Built the project.
- Served the app locally using the `serve` package.

Step 5: Open the App in My Browser

Once the script completed, the app was served on port 3000.

Open the app into the browser: `http://localhost:3000`