<u>Group Partners:</u>

Jawad Asif - 221074

Mahnoor Haider - 221078

Weather Checking App

This project is a Weather Checking App built using Node.js. The app allows users to get current weather information based on their location or a specified city. It also showcases the use of Git, GitHub, and testing practices throughout the development process.

- ## <u>Features</u>
1. Get real-time weather updates for any city.
2. Uses Node.js for server-side scripting.
3. Integration with weather APIs for accurate data.
4. Well-documented Git history for version control.
5. Testing implemented to ensure code stability and reliability.

- ## <u>Project Structure</u>

The repository contains 3 main branches:

- main: The primary branch with the stable version of the application.
- feature-dev-api: A development branch for deployment of javascript.
- feature-server: A server branch for setting up core setup of server.

<u>Technologies Used</u>

- **Node.js**: Backend server

- **Express**: Framework for building APIs

- **Axios**: HTTP client for making API requests

- **Jest**: Testing framework for JavaScript

- **Git & GitHub**: Version control and repository management

Setup and Installation

```
asifj@DESKTOP-UV53K3P MINGW64 ~
$ cd downloads

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads
$ cd devops

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops
$ git clone https://github.com/JawadAsif77/DevOps.git
Cloning into 'DevOps'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops
$ cd DevOps

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops/DevOps (main)
$ cd ../

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops
$ git init
Initialized empty Git repository in C:/Users/asifj/Downloads/devops/.git/

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (master)
$ git checkout -b feature-api-dev
Switched to a new branch 'feature-api-dev'
```

Name	Date modified	Type	Size
.git	10/13/2024 3:10 PM	File folder	
DevOps	10/13/2024 11:49 AM	File folder	
node_modules	10/8/2024 9:20 PM	File folder	
package	10/8/2024 9:20 PM	JSON Source File	1 KB
package-lock	10/8/2024 9:20 PM	JSON Source File	30 KB
README	10/13/2024 2:00 PM	MD File	1 KB
app	10/13/2024 2:20 PM	JavaScript File	2 KB

Contributions:

1) Jawad Asif – 221074
   - API Development
   - Testing and launching


```
MINGW64:/c/Users/asifj/downloads/devops

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git add app.js

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git commit -m "adding app file"
[feature-api-dev (root-commit) 93b537e] adding app file
 1 file changed, 42 insertions(+)
 create mode 100644 app.js

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git remote add origin https://github.com/JawadAsif77/DevOps.git

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git push -u origin feature-api-dev
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 728 bytes | 728.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature-api-dev' on GitHub by visiting:
remote:       https://github.com/JawadAsif77/DevOps/pull/new/feature-api-dev
remote:
To https://github.com/JawadAsif77/DevOps.git
 * [new branch]      feature-api-dev -> feature-api-dev
branch 'feature-api-dev' set up to track 'origin/feature-api-dev'.

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ echo "commit change" > feature-api-dev

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git add feature-api-dev
warning: in the working copy of 'feature-api-dev', LF will be replaced by CRLF t
he next time Git touches it

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git add feature-api-dev

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git commit -m "updation in feature branch"
[feature-api-dev 1c670ad] updation in feature branch
 1 file changed, 1 insertion(+)
 create mode 100644 feature-api-dev
```

```
asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$ git push origin feature-api-dev
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 300 bytes | 300.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/JawadAsif77/DevOps.git
   93b537e..1c670ad  feature-api-dev -> feature-api-dev

asifj@DESKTOP-UV53K3P MINGW64 ~/downloads/devops (feature-api-dev)
$
```

```js
JS app.js  U ✕

JS app.js  >  ⊕ app.get('/weather') callback  >  [○] weatherData  >  🔧 humidity
  1   const express = require('express');
  2   const axios = require('axios');
  3
  4   const app = express();
  5
  6   const apiKey = '2c341dae152b70026143a6ea33333b0a';
  7
  8   const port = 3000;
  9
 10   app.get('/weather', async (req, res) => {
 11       try {
 12           const city = req.query.city;
 13
 14           if (!city) {
 15               return res.status(400).json({ error: 'City name is required' });
 16           }
 17
 18           const url = `https://api.openweathermap.org/data/2.5/weather?q=${city}&appid=${apiKey}&units=metric`;
 19           const response = await axios.get(url);
 20
 21           const weatherData = {
 22               city: response.data.name,
 23               temperature: response.data.main.temp,
 24               description: response.data.weather[0].description,
 25               humidity: response.data.main.humidity,
 26               windSpeed: response.data.wind.speed
 27           };
 28
 29           res.json(weatherData);
 30
 31       } catch (error) {
 32           if (error.response) {
```

```js
 32           if (error.response) {
 33               res.status(error.response.status).json({ error: error.response.data.message });
 34           } else {
 35               res.status(500).json({ error: 'Something went wrong' });
 36           }
 37       }
 38   });
 39
 40   app.listen(port, () => {
 41       console.log(`Server is running on port ${port}`);
 42   });
 43
```

Testing:

```
 18       const url = `https://api.openweathermap.org/data/2.5/weather?q=${city}&appid=${apiKey}&units=metric`;
 19       const response = await axios.get(url);

∨ CALL STACK
  ⚙ Launch Program: app...  RUNNING    PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   COMMENTS        Filter (e.g. text, !exclude, \escape)        🔍 ≡ ∧ ✕

                                        C:\Program Files\nodejs\node.exe .\app.js
                                        Server is running on port 3000                                                    app.js:41

∨ LOADED SCRIPTS
∨ BREAKPOINTS
   ■ Caught Exceptions
   ■ Uncaught Exceptions       >
```
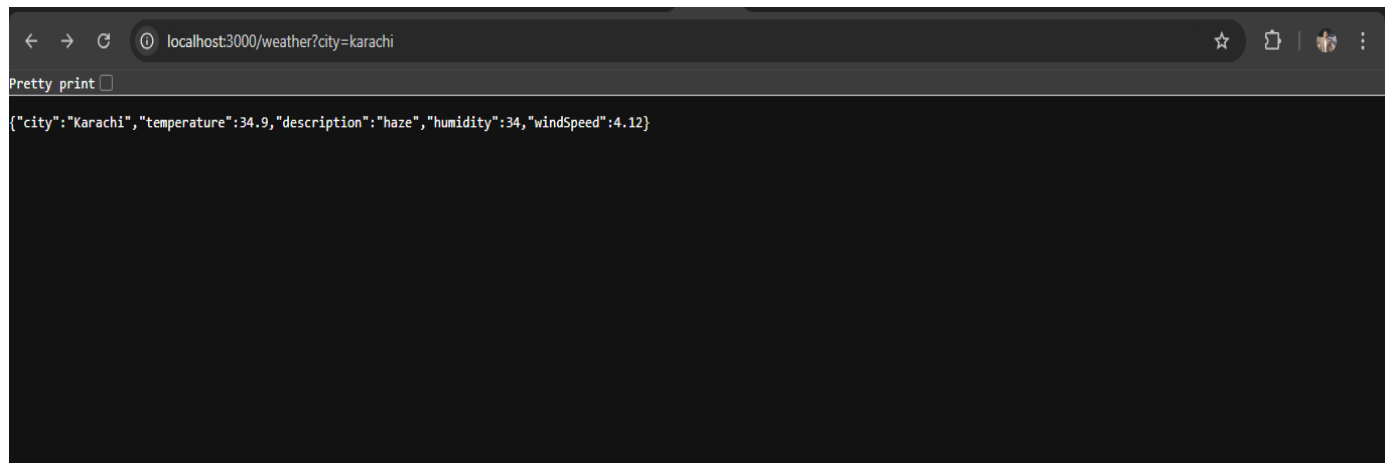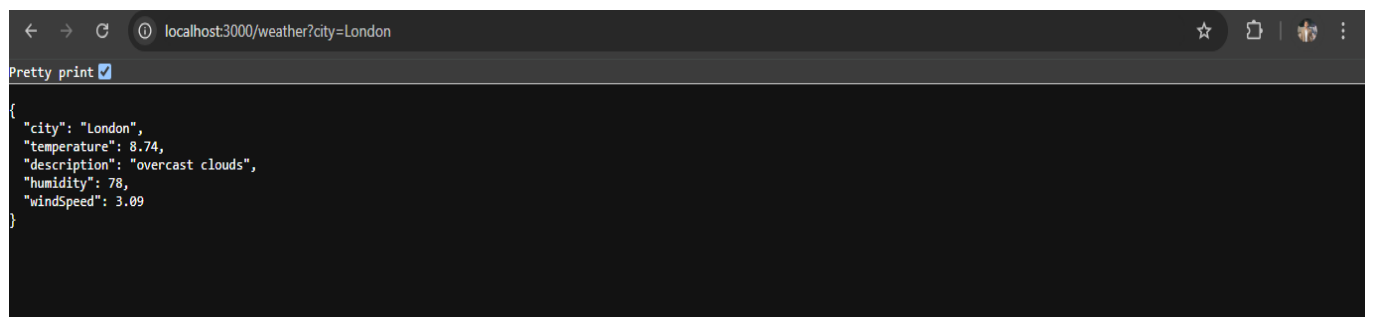
```json
{"city":"Karachi","temperature":34.9,"description":"haze","humidity":34,"windSpeed":4.12}
```

```json
{
    "city": "London",
    "temperature": 8.74,
    "description": "overcast clouds",
    "humidity": 78,
    "windSpeed": 3.09
}
```

2) <u>Mahnoor Haider – 221078</u>

- Setting up Server side work
- Solving merging problem and Pulling requests.

```json
{} package.json > ...
  1 ∨ {
  2       "name": "devops",
  3       "version": "1.0.0",
  4       "main": "index.js",
        ▷ Debug
  5 ∨     "scripts": {
  6           "test": "echo \"Error: no test specified\" && exit 1"
  7       },
  8       "keywords": [],
  9       "author": "",
 10       "license": "ISC",
 11       "description": "",
 12 ∨     "dependencies": {
 13           "axios": "^1.7.7",
 14           "express": "^4.21.0"
 15       }
 16   }
 17
```

```
asifj@mahnoorh MINGW64 ~/downloads
$ cd dev-assi

asifj@mahnoorh MINGW64 ~/downloads/dev-assi
$ git clone https://github.com/JawadAsif77/DevOps.git
Cloning into 'DevOps'...
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 9 (delta 0), reused 6 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (9/9), done.

asifj@mahnoorh MINGW64 ~/downloads/dev-assi
$ git init
Initialized empty Git repository in C:/Users/asifj/Downloads/dev-assi/.git/

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (master)
$ git checkout -b feature-server
Switched to a new branch 'feature-server'

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git add package.js
fatal: pathspec 'package.js' did not match any files

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git add package.json
warning: in the working copy of 'package.json', LF will be replaced by CRLF the
next time Git touches it

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git add package.json

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git commit -m "server file added"
[feature-server (root-commit) 7e3dcd4] server file added
 1 file changed, 16 insertions(+)
 create mode 100644 package.json
```

```
asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git remote add origin https://github.com/JawadAsif77/DevOps.git

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git push -u origin feature-server
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 402 bytes | 402.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature-server' on GitHub by visiting:
remote:      https://github.com/JawadAsif77/DevOps/pull/new/feature-server
remote:
To https://github.com/JawadAsif77/DevOps.git
 * [new branch]      feature-server -> feature-server
branch 'feature-server' set up to track 'origin/feature-server'.

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ echo "new change" > feature-server

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git add feature-server
warning: in the working copy of 'feature-server', LF will be replaced by CRLF th
e next time Git touches it

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git add feature-server

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git commit -m "new change"
[feature-server 9f78854] new change
 1 file changed, 1 insertion(+)
 create mode 100644 feature-server

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git push origin feature-server
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 292 bytes | 292.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/JawadAsif77/DevOps.git
   7e3dcd4..9f78854  feature-server -> feature-server
```

```
asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ echo "mahnoor" > feature-server

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git add .
warning: in the working copy of 'feature-server', LF will be replaced by CRLF th
e next time Git touches it
warning: adding embedded git repository: DevOps
hint: You've added another git repository inside your current repository.
hint: Clones of the outer repository will not contain the contents of
hint: the embedded repository and will not know how to obtain it.
hint: If you meant to add a submodule, use:
hint:
hint:   git submodule add <url> DevOps
hint:
hint: If you added this path by mistake, you can remove it from the
hint: index with:
hint:
hint:   git rm --cached DevOps
hint:
hint: See "git help submodule" for more information.
hint: Disable this message with "git config advice.addEmbeddedRepo false"

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git add .

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git commit -m "new"
[feature-server 9971df1] new
 2 files changed, 2 insertions(+), 1 deletion(-)
 create mode 160000 DevOps

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git push origin feature-server
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 317 bytes | 317.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/JawadAsif77/DevOps.git
   9f78854..9971df1  feature-server -> feature-server

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$
```

Merging:

```
MINGW64:/c/Users/asifj/downloads/dev-assi
asifj@mahnoorh MINGW64 ~/downloads/dev-assi (main)
$ git branch -a
  feature-server
* main
  remotes/origin/feature-api-dev
  remotes/origin/feature-server
  remotes/origin/main

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (main)
$ git checkout feature-api-dev
fatal: 'feature-api-dev' could be both a local file and a tracking branch.
Please use -- (and optionally --no-guess) to disambiguate

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (main)
$ git checkout feature-server
Switched to branch 'feature-server'
Your branch is up to date with 'origin/feature-server'.

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git branch --set-upstream-to=origin/feature-server
branch 'feature-server' set up to track 'origin/feature-server'.

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git merge origin/main
fatal: refusing to merge unrelated histories

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git merge origin/main --allow-unrelated-histories
Merge made by the 'ort' strategy.
 README.md       |  1 +
 app.js          | 42 ++++++++++++++++++++++++++++++++++++++++++
 feature-api-dev |  1 +
 3 files changed, 44 insertions(+)
 create mode 100644 README.md
 create mode 100644 app.js
 create mode 100644 feature-api-dev

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$ git push origin feature-server
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 454 bytes | 454.00 KiB/s, done.
Total 2 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/JawadAsif77/DevOps.git
   9971df1..8feb0e8  feature-server -> feature-server

asifj@mahnoorh MINGW64 ~/downloads/dev-assi (feature-server)
$
```
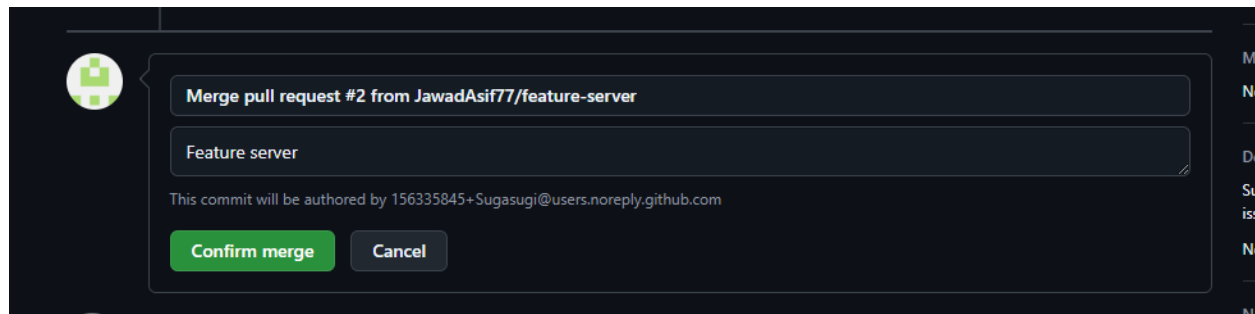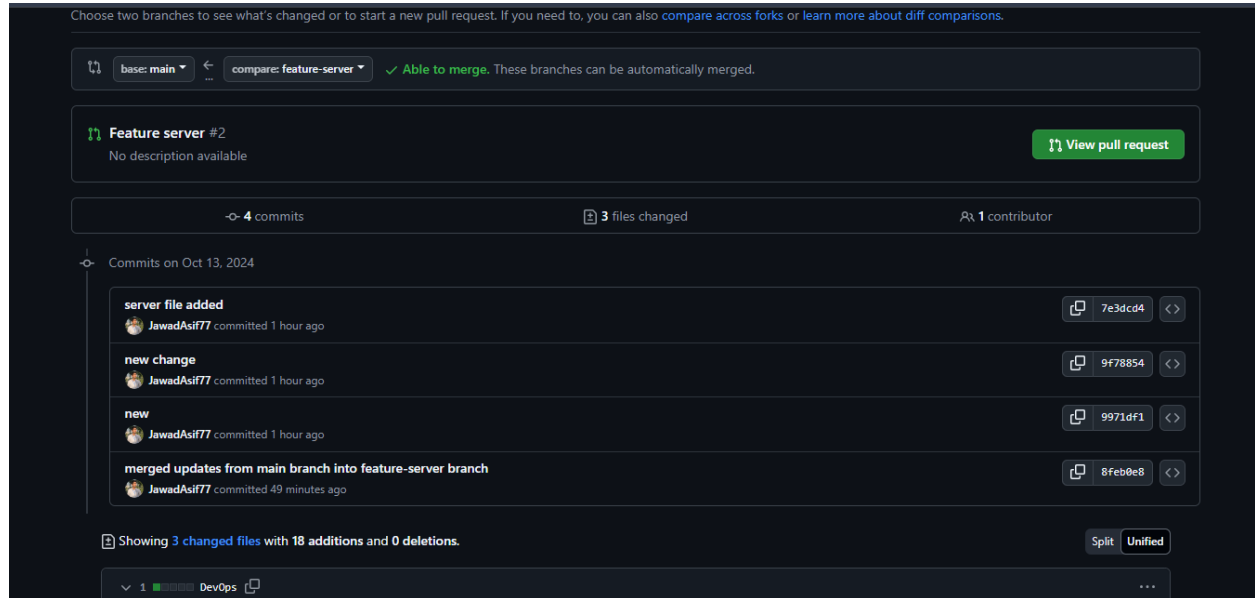
Pulling Requests:

Future Enhancements

- Add a feature for saving favorite cities.

- Improve UI with more detailed weather charts.

- Implement user authentication for personalized settings.