Topic: Plant Analysis Tool using Gemini AI and Express.js Part 1

Speaker: Masynctech | Notebook: Node.js (JavaScript) Projects

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We used NODE.JS (Javascript) and NVM.

MAIN VIDEO RESOURCE:

1. We created a new folder, PLANTANALYSIS TOOL.

2. We open a Gitbash Terminal here and use CODE . (code dot) to open our VS CODE editor.

3. We Install NODE.JS, CODEIUM EXTENSION IN VSCODE EXTENSIONS and get Google API key from Google API dashboard.


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Node.js® is a free, open-source, cross-platform JavaScript runtime environment that lets developers create servers, web apps, command line tools and scripts.
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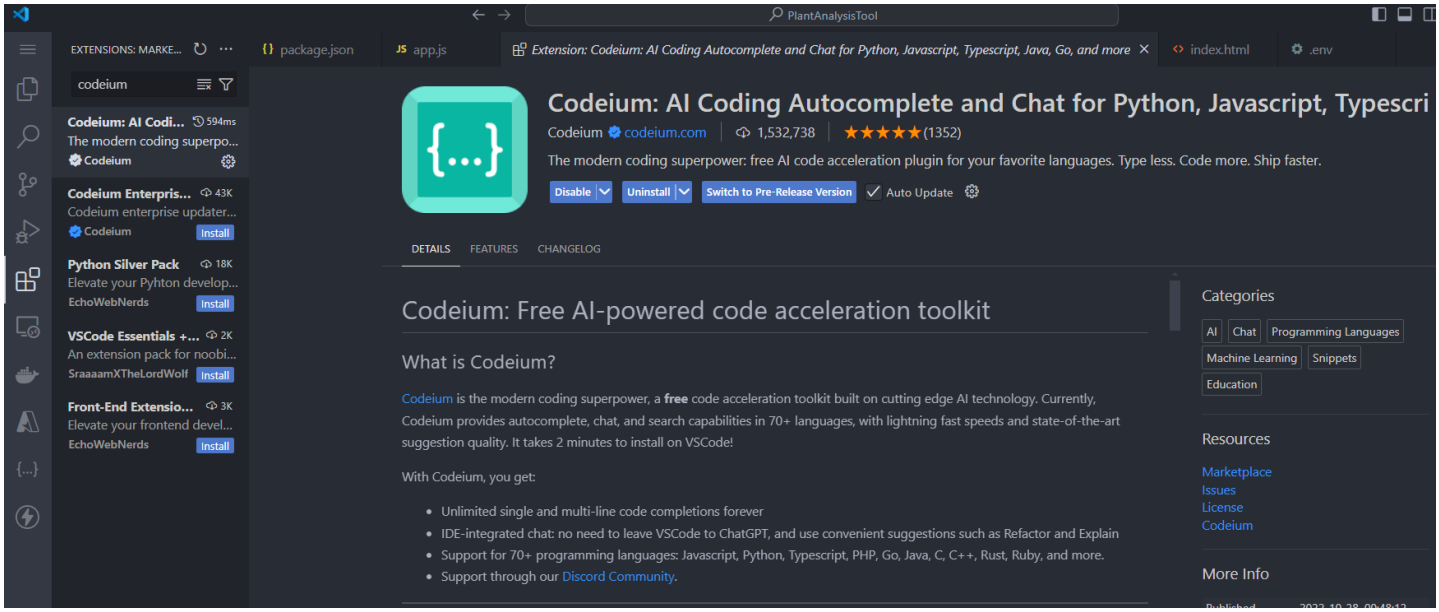
PlantAnalysisTool
EXTENSIONS: MARKE...
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Install
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Install
package.json
app.js
Extension: Codeium: AI Coding Autocomplete and Chat for Python, Javascript, Typescript, Java, Go, and more
index.html
.env
Codeium: AI Coding Autocomplete and Chat for Python, Javascript, Typescri
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Codeium: Free AI-powered code acceleration toolkit
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Codeium is the modern coding superpower, a free code acceleration toolkit built on cutting edge AI technology. Currently, Codeium provides autocomplete, chat, and search capabilities in 70+ languages, with lightning fast speeds and state-of-the-art suggestion quality. It takes 2 minutes to install on VSCode!
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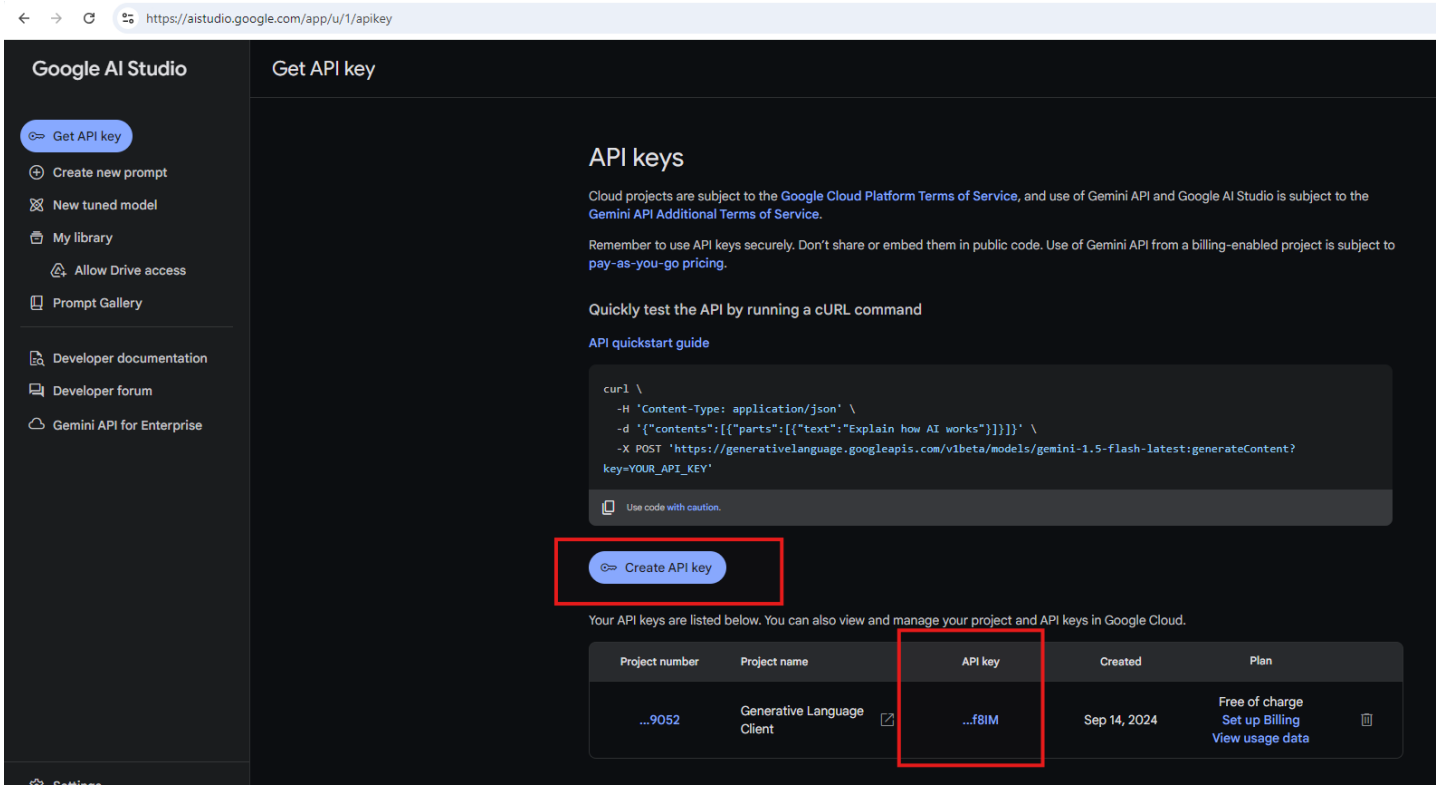
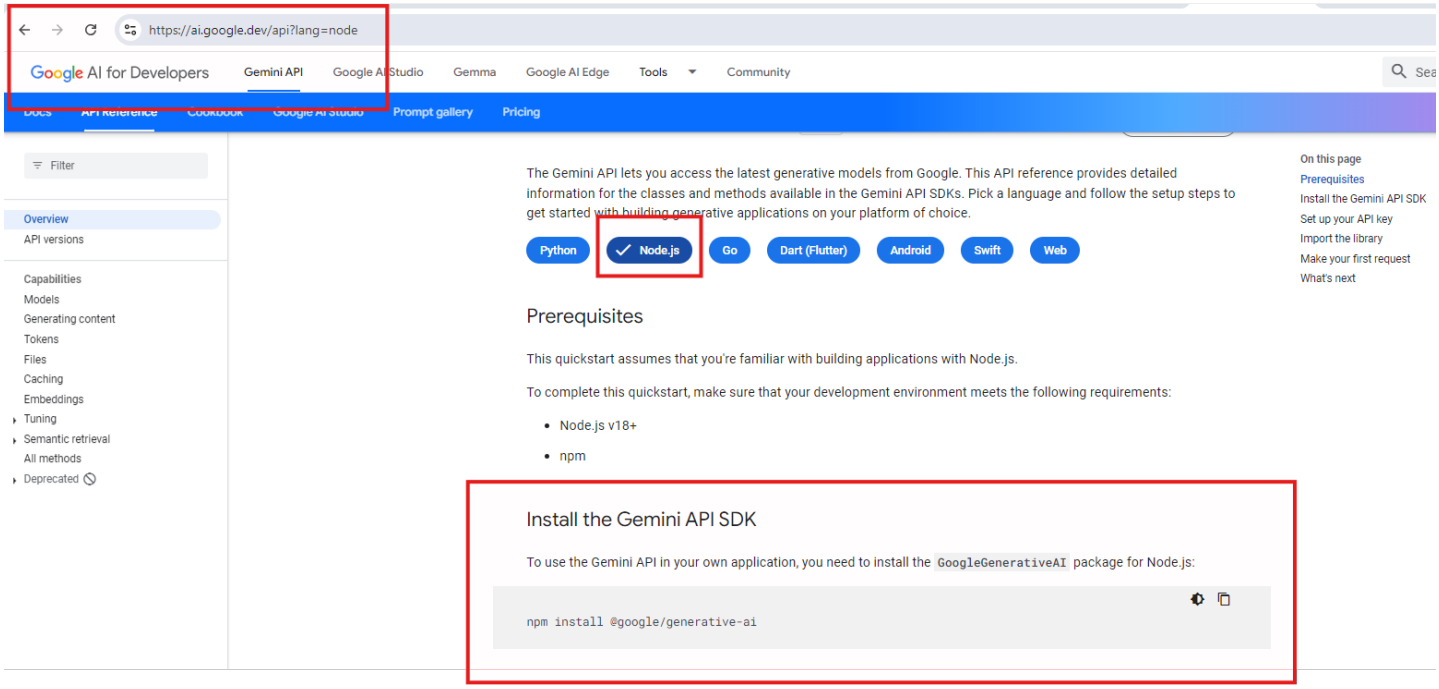
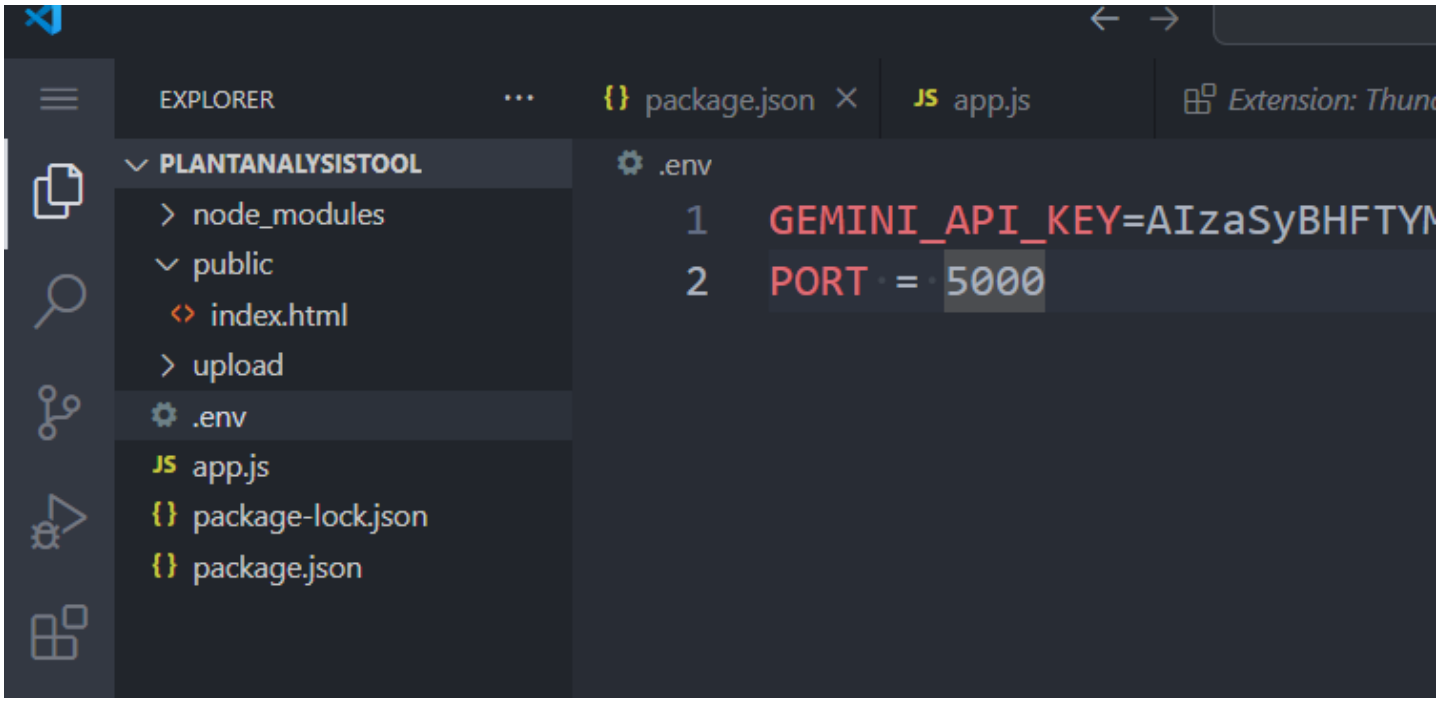

https://aistudio.google.com/app/u/1/apikey
Google AI Studio
Get API key
Create new prompt
New tuned model
My library
Allow Drive access
Prompt Gallery
Developer documentation
Developer forum
Gemini API for Enterprise
Get API key
API keys
Cloud projects are subject to the Google Cloud Platform Terms of Service, and use of Gemini API and Google AI Studio is subject to the Gemini API Additional Terms of Service.
Remember to use API keys securely. Don't share or embed them in public code. Use of Gemini API from a billing-enabled project is subject to pay-as-you-go pricing.
Quickly test the API by running a cURL command
API quickstart guide
curl \
-H 'Content-Type: application/json' \
-d '{"contents":[{"parts":[{"text":"Explain how AI works"}]}]}' \
-X POST 'https://generativelanguage.googleapis.com/v1beta/models/gemini-1.5-flash-latest:generateContent?key=YOUR_API_KEY'
Use code with caution.
Create API key
Your API keys are listed below. You can also view and manage your project and API keys in Google Cloud.
Project number
Project name
API key
Created
Plan
...9052
Generative Language Client
...f8IM
Sep 14, 2024
Free of charge
Set up Billing
View usage data

We use GOOGLE API REFERENCE to install our GENERATIVE AI in NODE.JS:

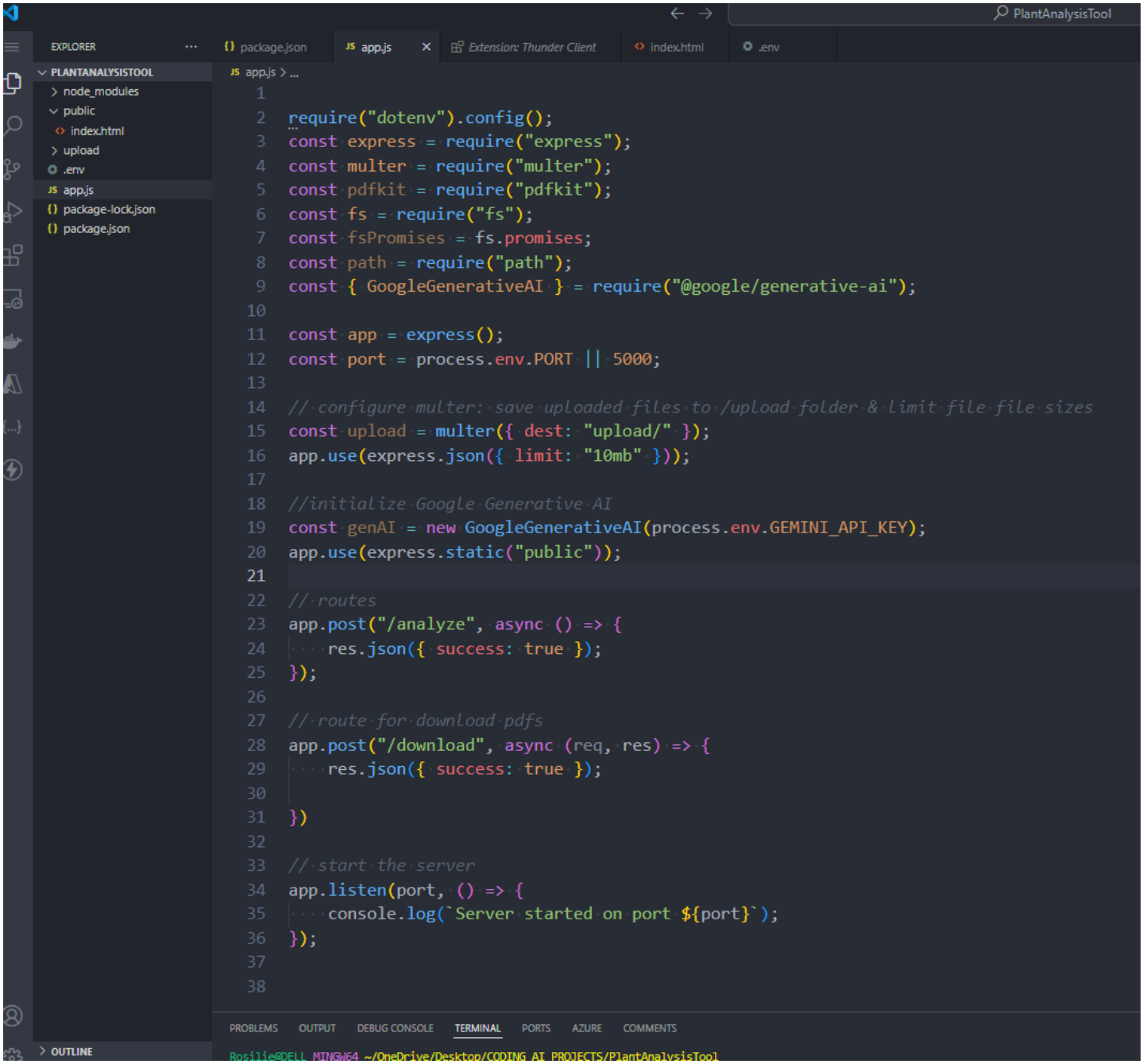


4. We created new folders like UPLOAD, PUBLIC and created APPS.JS and .ENV files

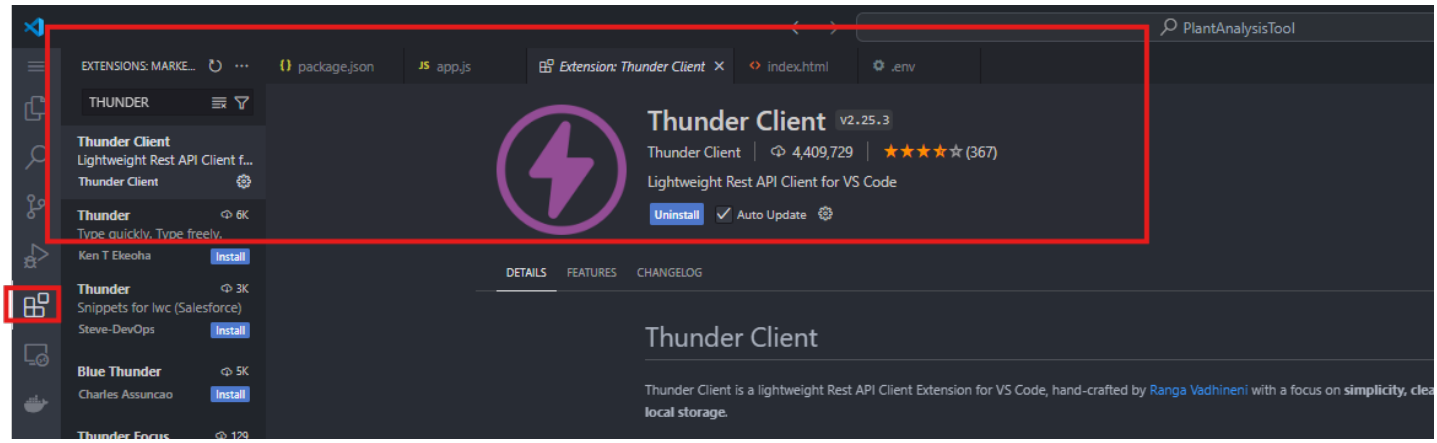
.ENV FILE:



APPS.JS

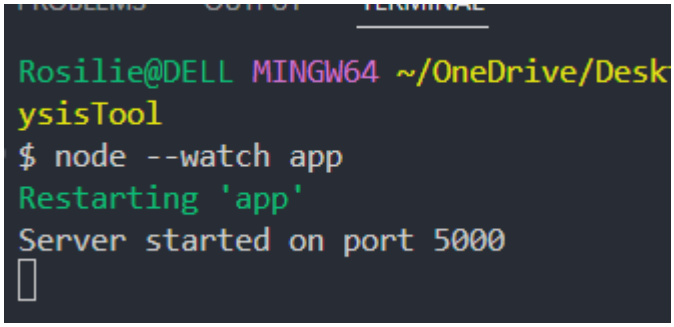


5. To test our ENDPOINT, we will use POSTMAN (you used INSOMNIA) or we can install the VS CODE EXTENSION, THUNDER CLIENT.

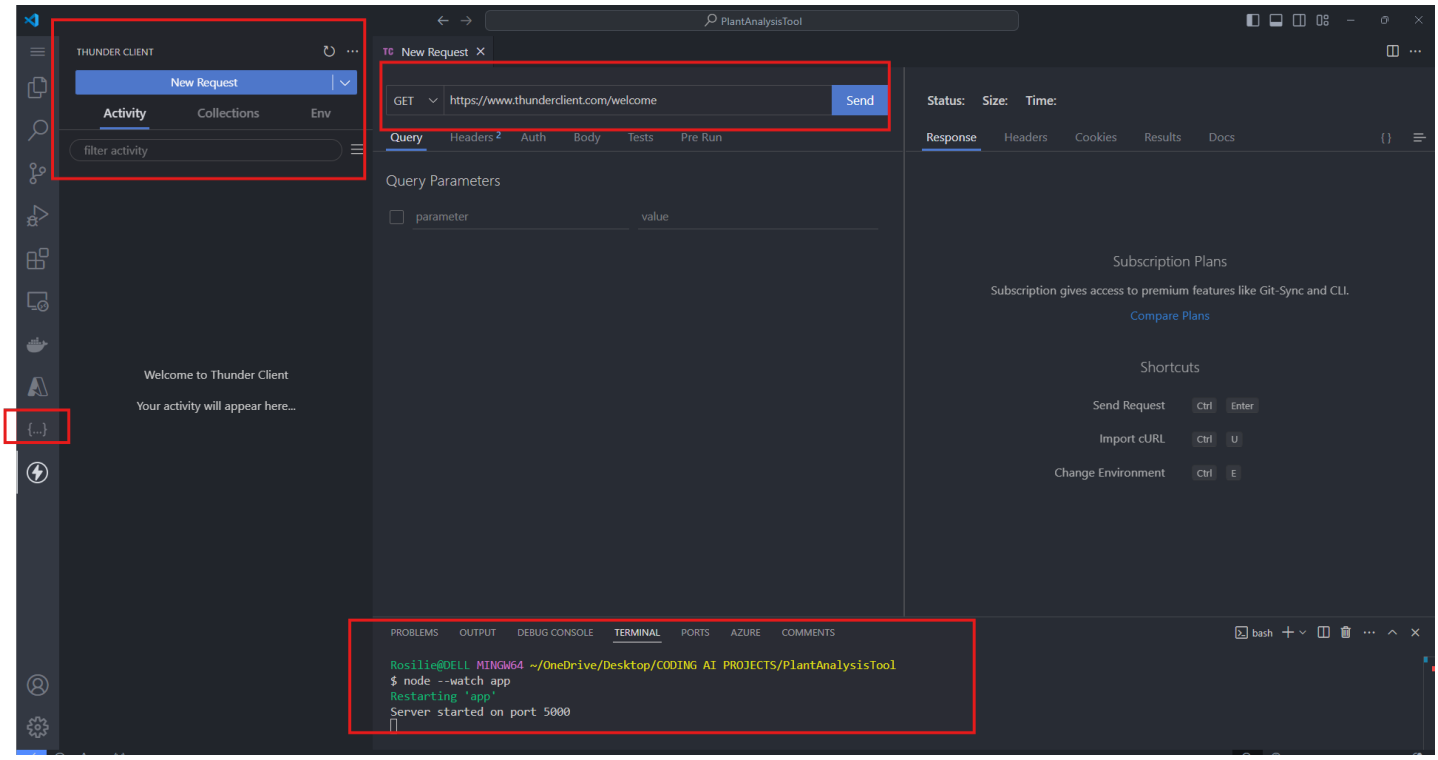


6. Run the app by issuing this code.

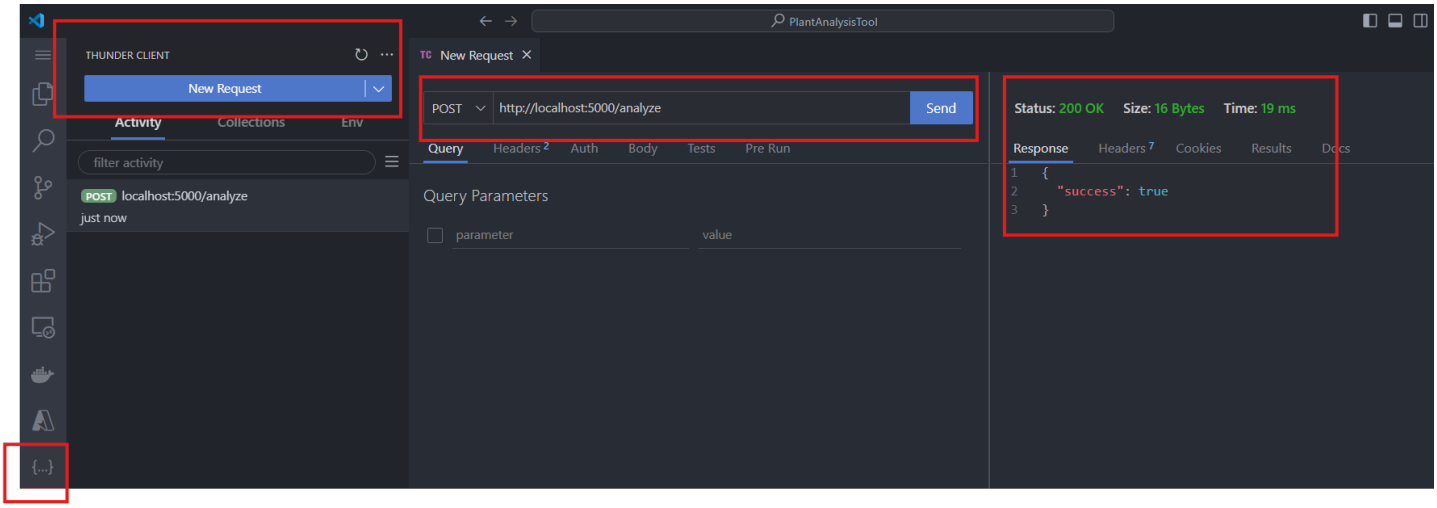
`$ node --watch app` (where app is our APPS.JS)



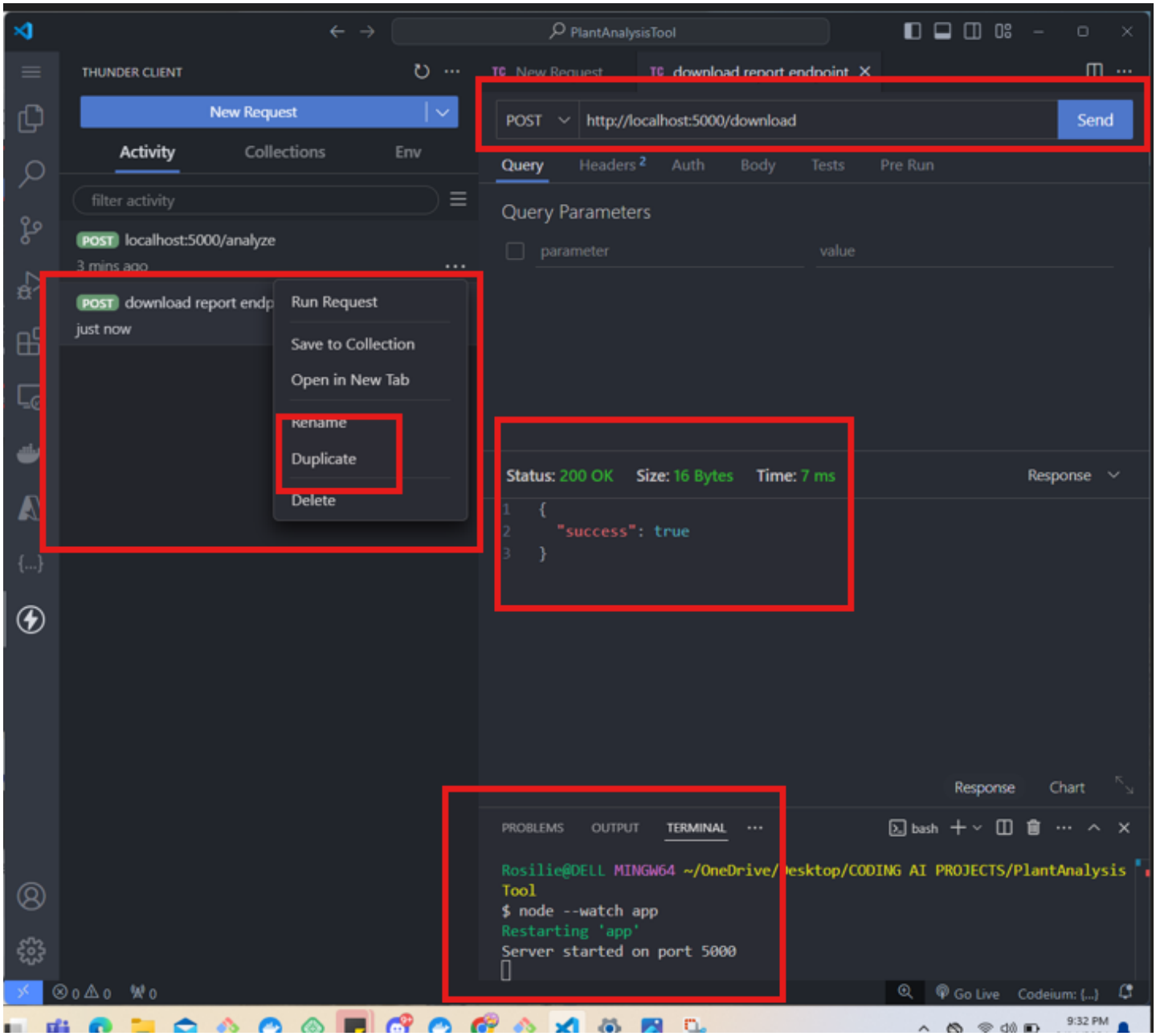
7. Close all your tabs in VS Code. Right click on the THREE DOTS where the EXTENSION button is, and select THUNDER POINT. Select NEW REQUEST.



8. To access our work, we issue our URL path: HTTP://localhost: 5000. This should show a SUCCESS MESSAGE



9. We test our other endpoint, HTTP:://LOCALHOST:DOWNLOAD/ We duplicate our first request and name it. Then, we change our URL PATH.

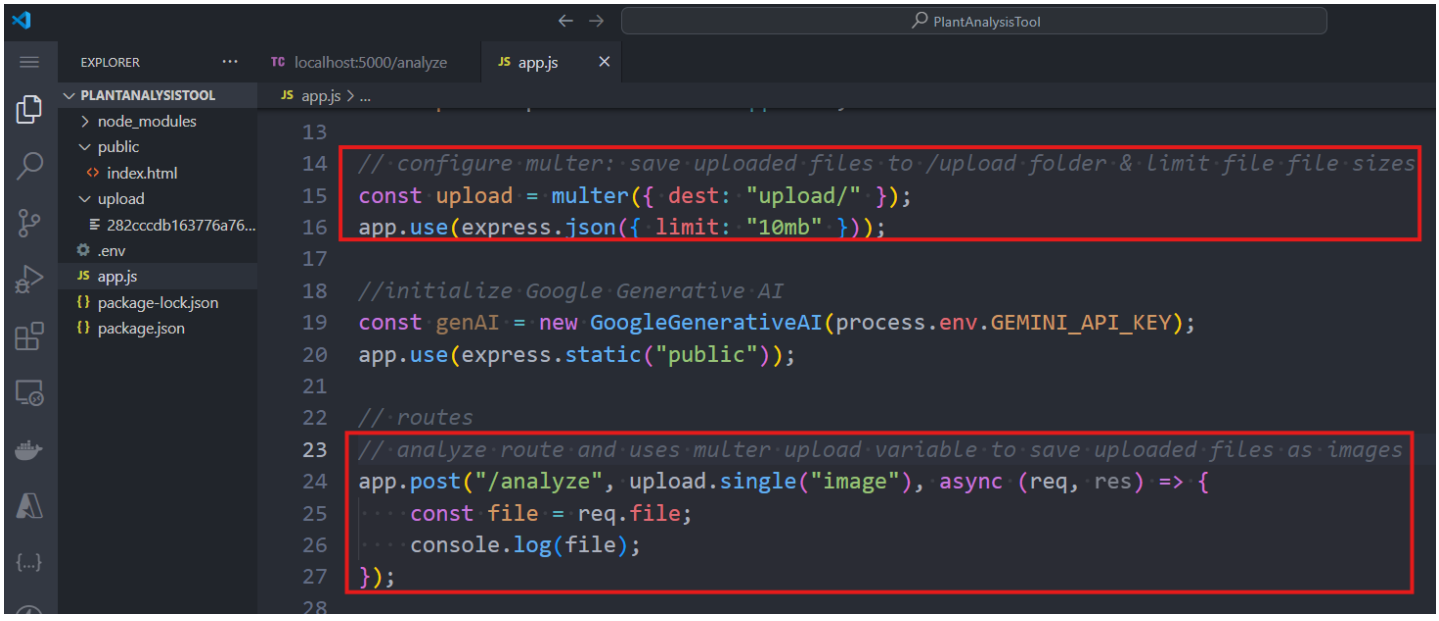


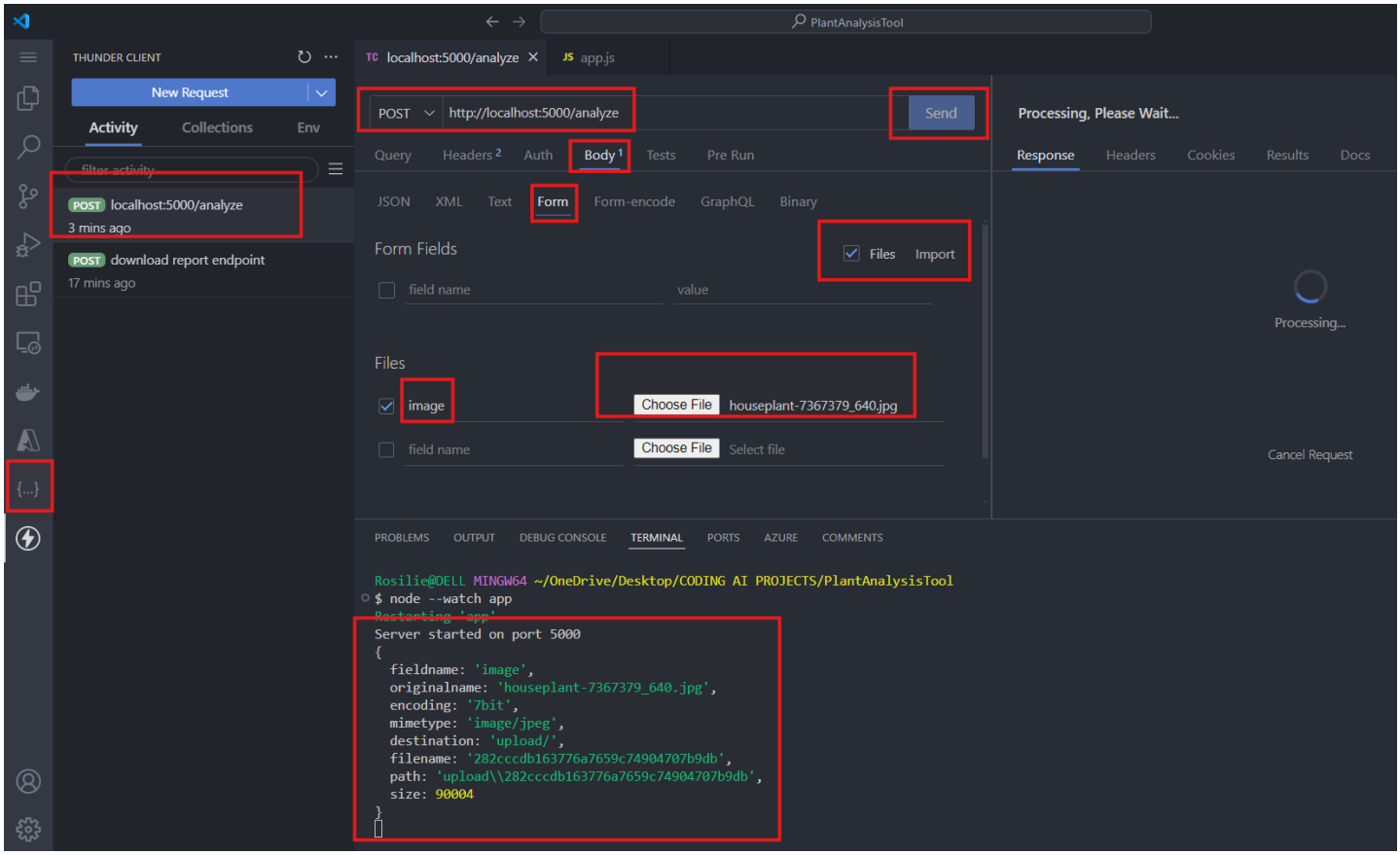
10. Just like in Django where we test our paths using Django's views.py, the logic for Node.js is this:

```
// routes
// analyze route
app.post("/analyze", async (req, res) => {
    res.json({ success: true });
});

// route for download pdfs
app.post("/download", async (req, res) => {
    res.json({ success: true });

})
```

11. To test the upload function, we can use the THUNDER BODY\FORM and add the variable we used 'IMAGE' and upload a file from our local device. We should be able to see the details of this image.

APPS.JS:



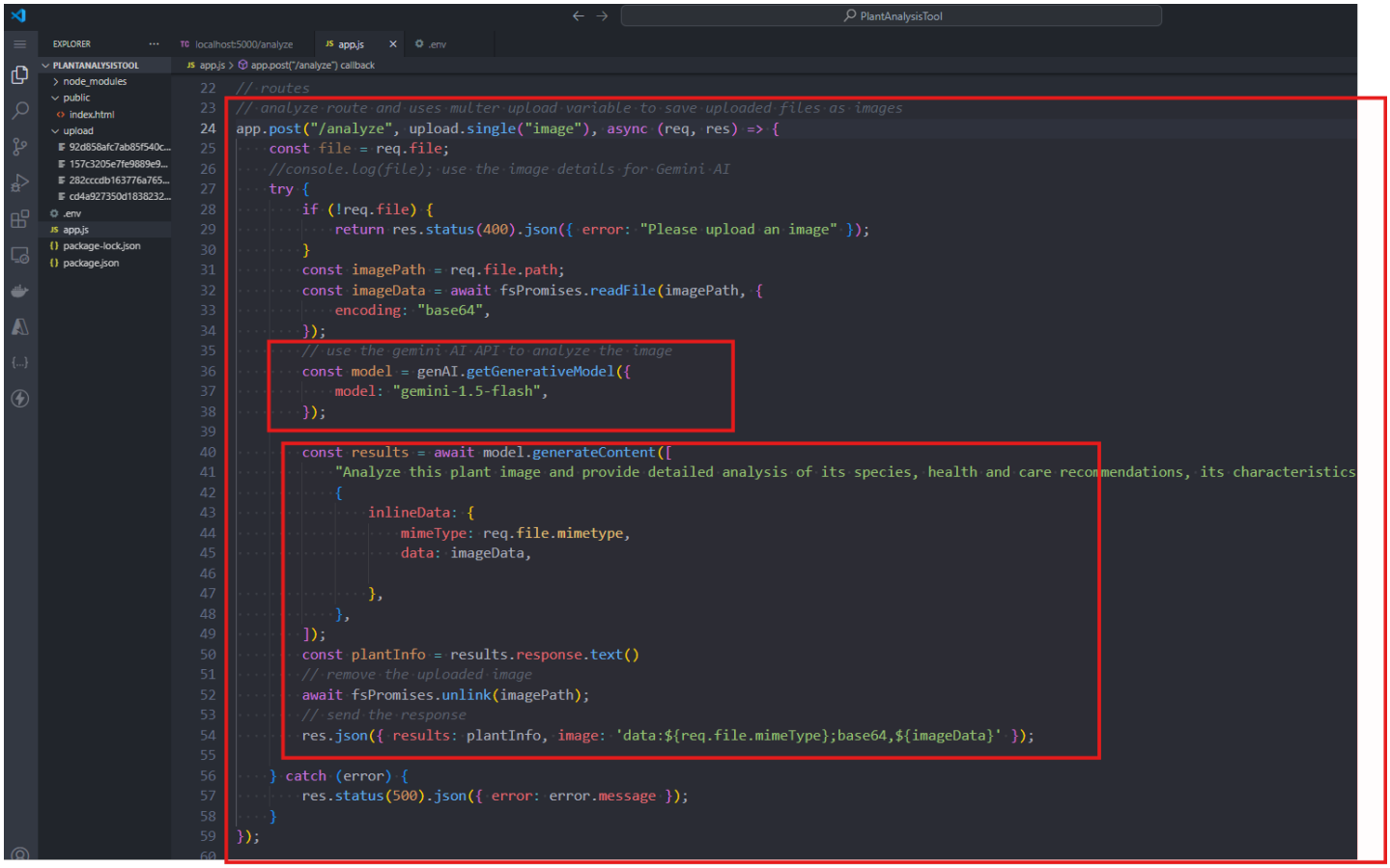


12. To allow Gemini AI to use the details captured from step 11, we have to indicate the GEMINI VERSION:

13. We updated our APPS.JS to include GEMINI API.

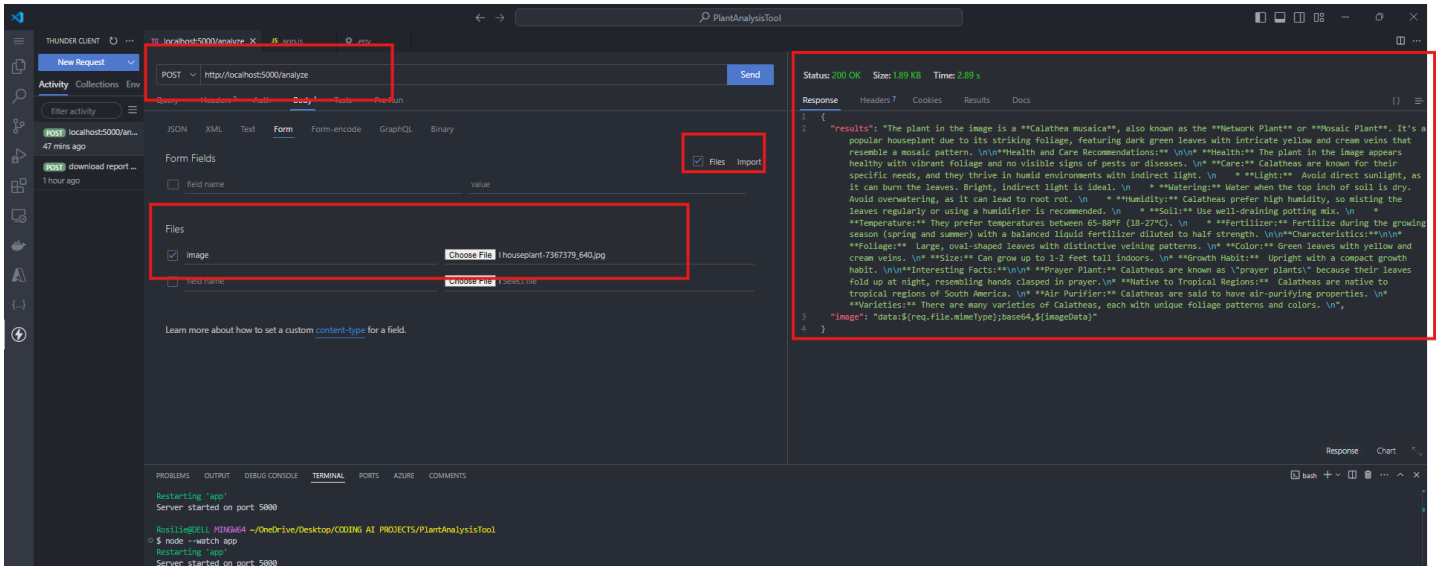
This is the PROMPT we used for Gemini `"Analyze this plant image and provide detailed analysis of its species, health and care recommendations, its characteristics, care instructions and interesting facts. Please provide the response in plain text without using any markdown formatting "`

Our function:



```
// routes
// analyze route and uses multer upload variable to save uploaded files as images
app.post("/analyze", upload.single("image"), async (req, res) => {
    const file = req.file;
    //console.log(file); use the image details for Gemini AI
    try {
        if (!req.file) {
            return res.status(400).json({ error: "Please upload an image" });
        }
        const imagePath = req.file.path;
        const imageData = await fsPromises.readFile(imagePath, {
            encoding: "base64",
        });
        // use the gemini AI API to analyze the image
        const model = genAI.getGenerativeModel({
            model: "gemini-1.5-flash",
        });

        const results = await model.generateContent([
            "Analyze this plant image and provide detailed analysis of its species, health and care recommendations, its characteristics
            {
                inlineData: {
                    mimeType: req.file.mimetype,
                    data: imageData,


                },
            },
        ]);
        const plantInfo = results.response.text()
        // remove the uploaded image
        await fsPromises.unlink(imagePath);
        // send the response
        res.json({ results: plantInfo, image: 'data:${req.file.mimeType};base64,${imageData}' });

    } catch (error) {
        res.status(500).json({ error: error.message });
    }
});
```

14. We run our endpoint using Thunder Client:



15.