

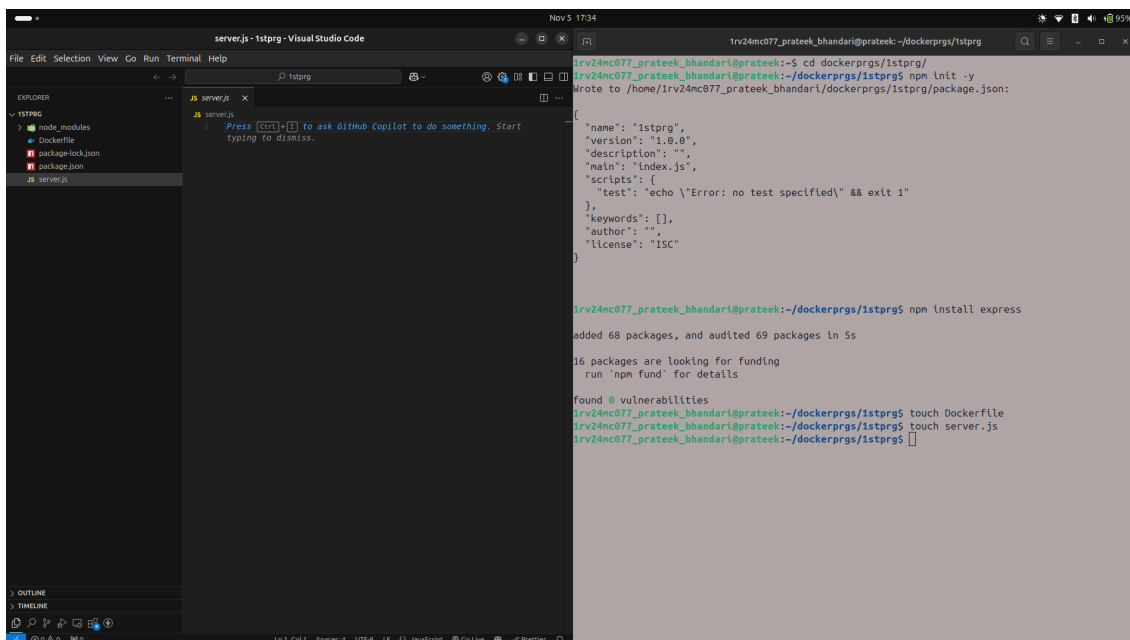
Program 1

Build a docker container from custom Dockerfile

step 1: Initialize node.js project

→ npm init -y

step2 : Install dependencies



The screenshot shows a Visual Studio Code editor with a terminal window open. The terminal displays the following commands and output:

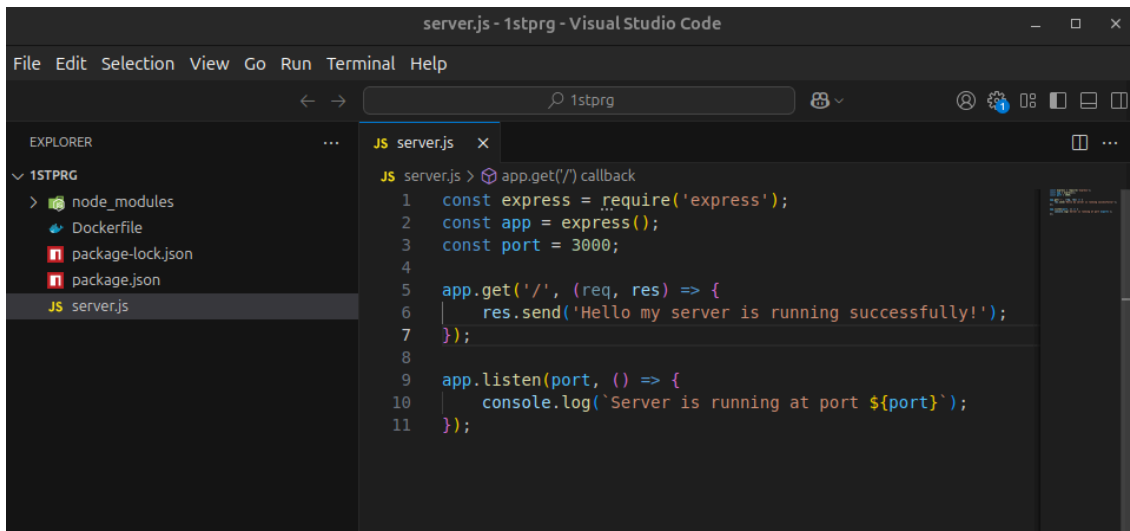
```
1rv24nc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ cd dockerprgs/1stprg/
1rv24nc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ npm init -y
Wrote to /home/1rv24nc077_prateek_bhandari/dockerprgs/1stprg/package.json:

{
  "name": "1stprg",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \\\"Error: no test specified\\\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC"
}

1rv24nc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ npm install express
added 68 packages, and audited 69 packages in 5s
16 packages are looking for funding
  run `npm fund` for details
found 0 vulnerabilities
1rv24nc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ touch Dockerfile
1rv24nc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ touch server.js
1rv24nc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$
```

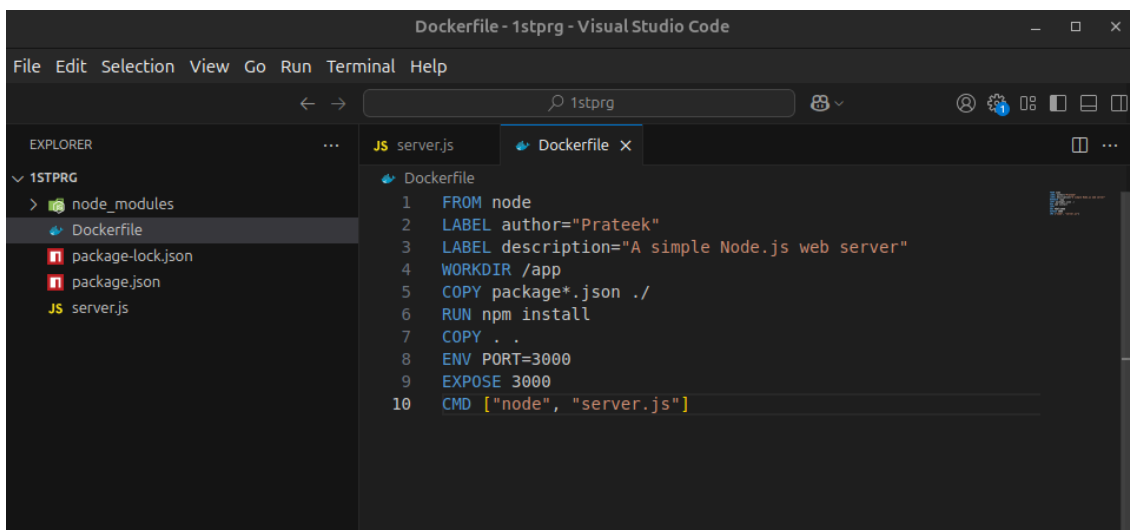
step 3 : Create your server file (server.js)

→my server is listening at port 3000

A screenshot of the Visual Studio Code editor. The title bar reads "server.js - 1stprg - Visual Studio Code". The Explorer sidebar on the left shows a project named "1STPRG" with files: "node_modules", "Dockerfile", "package-lock.json", "package.json", and "server.js". The "server.js" file is selected and open in the editor. The code in the editor is as follows:

```
server.js > app.get('/') callback
1  const express = require('express');
2  const app = express();
3  const port = 3000;
4
5  app.get('/', (req, res) => {
6    res.send('Hello my server is running successfully!');
7  });
8
9  app.listen(port, () => {
10    console.log(`Server is running at port ${port}`);
11  });
```

step 4 :Writing the Dockerfile

A screenshot of the Visual Studio Code editor. The title bar reads "Dockerfile - 1stprg - Visual Studio Code". The Explorer sidebar on the left shows the same project "1STPRG" with files: "node_modules", "Dockerfile", "package-lock.json", "package.json", and "server.js". The "Dockerfile" file is selected and open in the editor. The code in the editor is as follows:

```
1  FROM node
2  LABEL author="Prateek"
3  LABEL description="A simple Node.js web server"
4  WORKDIR /app
5  COPY package*.json ./
6  RUN npm install
7  COPY . .
8  ENV PORT=3000
9  EXPOSE 3000
10 CMD ["node", "server.js"]
```

step 5 :Building Your Docker Image

step 6 : Running Your Container

```

1rv24mc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ ls
Dockerfile  node_modules  package.json  package-lock.json  server.js
1rv24mc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ docker build -t node-app1 .
[+] Building 3.1s (10/10) FINISHED                                docker:default
=> [internal] load build definition from Dockerfile                0.0s
=> => transferring dockerfile: 231B                                0.0s
=> [internal] load metadata for docker.io/library/node:latest     0.0s
=> [internal] load .dockerignore                                  0.0s
=> => transferring context: 2B                                       0.0s
=> [1/5] FROM docker.io/library/node:latest                       0.0s
=> [internal] load build context                                  0.2s
=> => transferring context: 2.70MB                                   0.1s
=> CACHED [2/5] WORKDIR /app                                       0.0s
=> [3/5] COPY package*.json ./                                    0.1s
=> [4/5] RUN npm install                                           2.3s
=> [5/5] COPY . .                                                  0.3s
=> exporting to image                                              0.2s
=> => exporting layers                                              0.2s
=> => writing image sha256:fb304fa7a175d705146441b4e342a10f8ec8648471dbcd1d289720418af 0.0s
=> => naming to docker.io/library/node-app1                       0.0s
1rv24mc077_prateek_bhandari@prateek:~/dockerprgs/1stprg$ docker run --name application1 -p 3000:
Server is running at port 3000

```

step 7 : Open browser and visit localhost:3000

