# 🎯 Assignment 1: Setup and Test Report

## 📝 Introduction

This report documents the setup process and testing results for **Assignment 1** of the Intelligent Devices course. The goal is to ensure the environment is correctly configured and the API is functioning as expected.

## ⚙️ Environment Setup

| Item | Details |
|---|---|
| **Operating System** | Linux |
| **Programming Lang** | Go |
| **Git Repo** | https://github.com/Muditha-Kumara/Go/tree/main |
| **Commit** | `bf39632` |

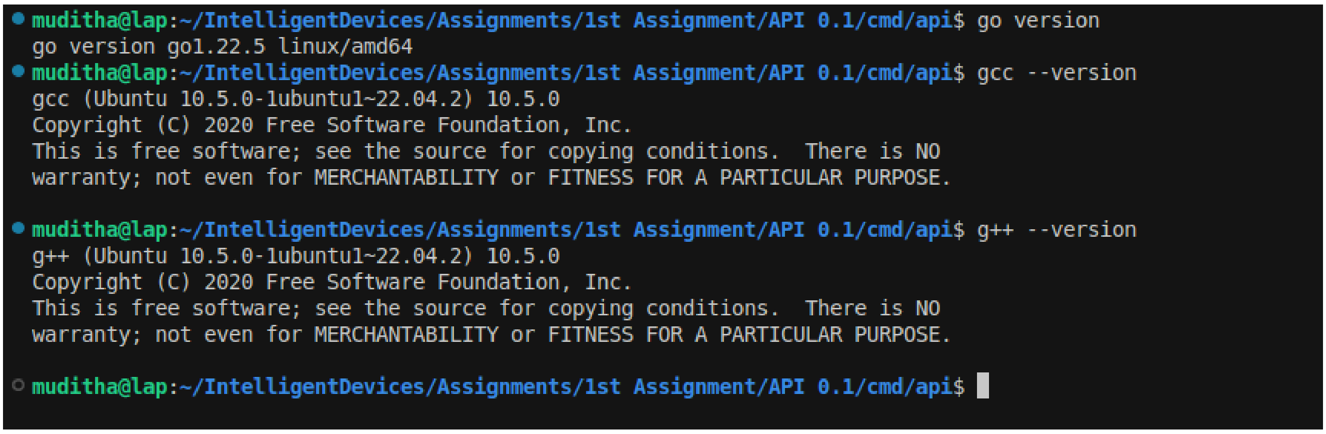
**Project Structure:**

```
API 0.1/
  cmd/api/main.go
  internal/api/handlers/
  internal/api/middleware/
  internal/api/repository/
  internal/api/server/
  internal/api/service/
```

## 🛠️ Setup Steps

1. Cloned the repository from the provided source.

2. Installed Go, mingw32-base, mingw32-gcc-g++ packages and verified the version.
3. Navigated to the project directory and ran `go mod tidy` to install dependencies.



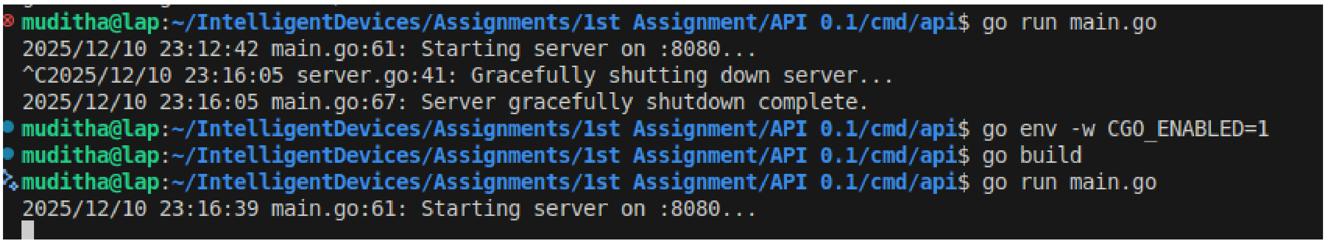
```
muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ go version
go version go1.22.5 linux/amd64
muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ gcc --version
gcc (Ubuntu 10.5.0-1ubuntu1~22.04.2) 10.5.0
Copyright (C) 2020 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ g++ --version
g++ (Ubuntu 10.5.0-1ubuntu1~22.04.2) 10.5.0
Copyright (C) 2020 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ 
```

# 🚀 Running the API

1. Navigated to `API 0.1/cmd/api/` .
2. Ran the API server using:

```
go run main.go
```

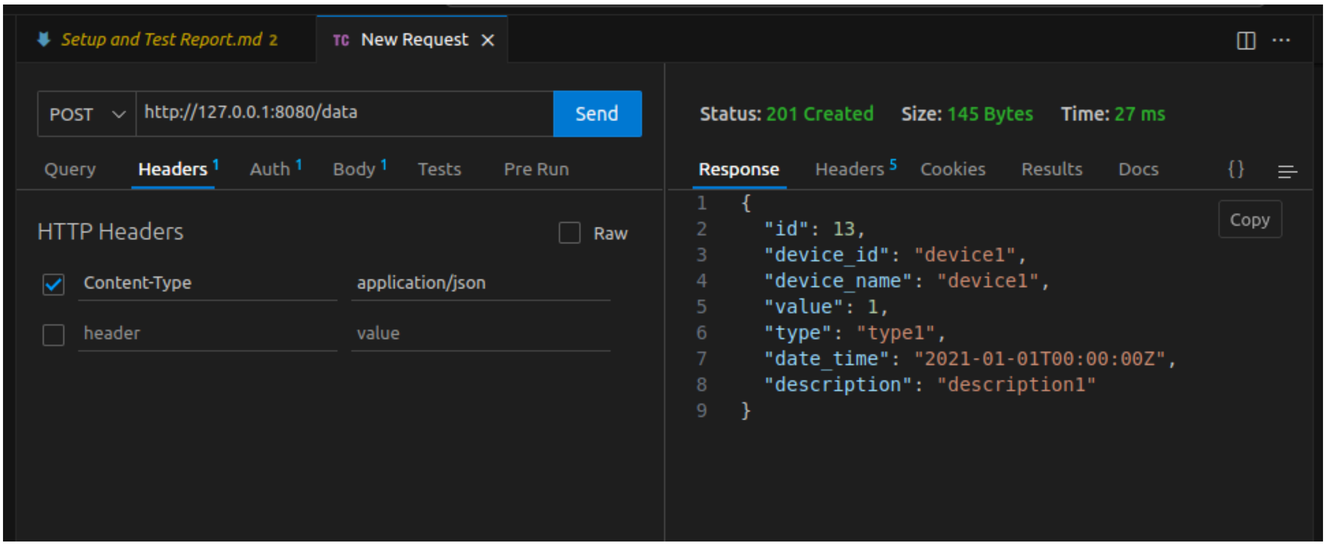
3. Confirmed the server started successfully and was accessible at the expected endpoint.



```
muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ go run main.go
2025/12/10 23:12:42 main.go:61: Starting server on :8080...
^C2025/12/10 23:16:05 server.go:41: Gracefully shutting down server...
2025/12/10 23:16:05 main.go:67: Server gracefully shutdown complete.
muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ go env -w CGO_ENABLED=1
muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ go build
muditha@lap:~/IntelligentDevices/Assignments/1st Assignment/API 0.1/cmd/api$ go run main.go
2025/12/10 23:16:39 main.go:61: Starting server on :8080...
```

# 🧪 Testing

API tested using Thunder Client:



POST http://127.0.0.1:8080/data

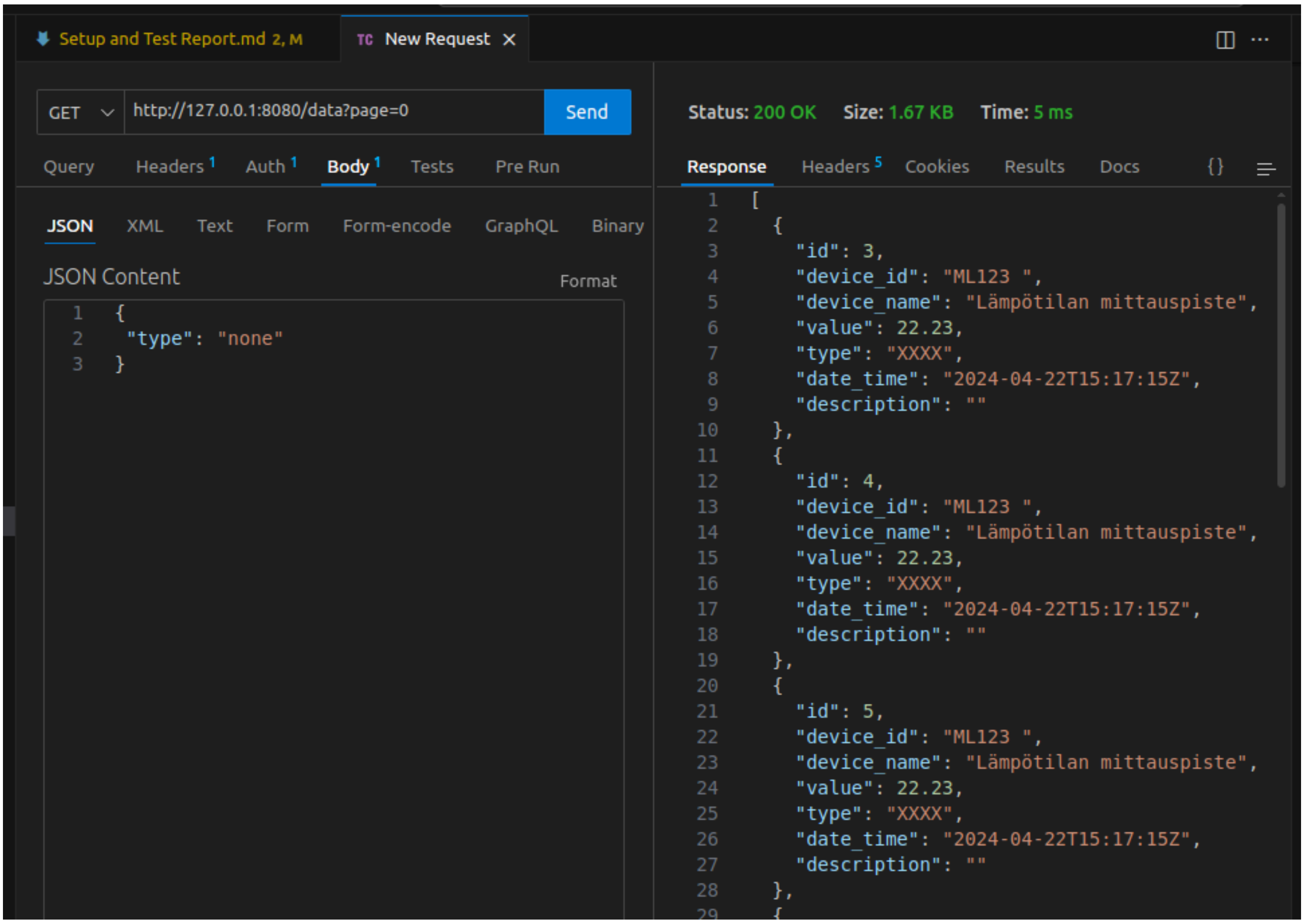
HTTP Headers ☐ Raw

☑ Content-Type application/json

☐ header value

Status: 201 Created Size: 145 Bytes Time: 27 ms

```
{
  "id": 13,
  "device_id": "device1",
  "device_name": "device1",
  "value": 1,
  "type": "type1",
  "date_time": "2021-01-01T00:00:00Z",
  "description": "description1"
}
```

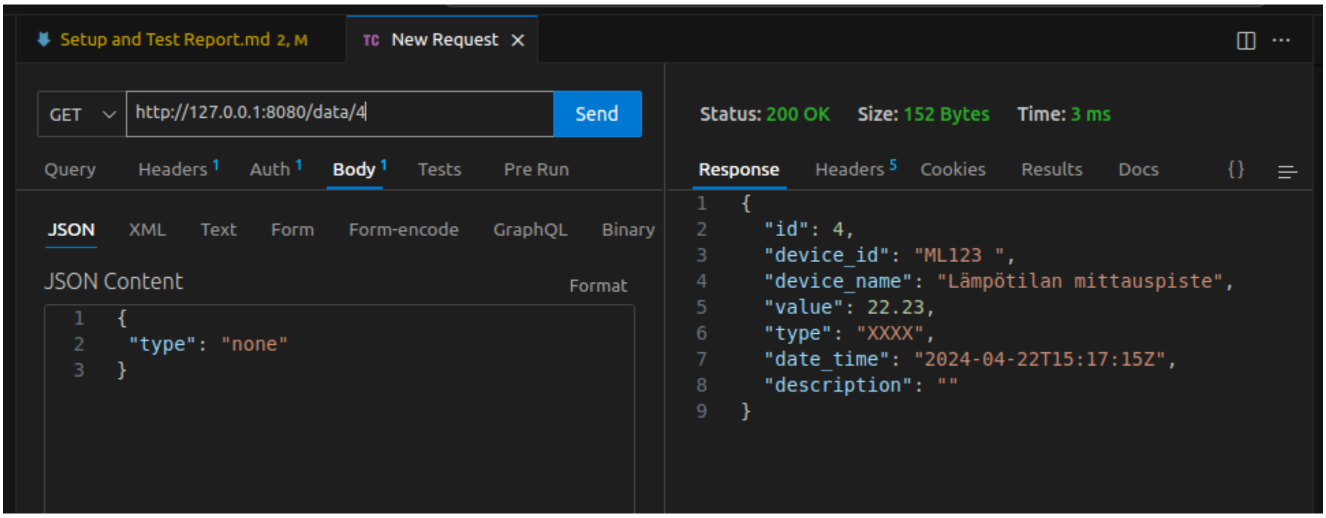


GET http://127.0.0.1:8080/data?page=0

```
{
 "type": "none"
}
```

Status: 200 OK Size: 1.67 KB Time: 5 ms

```
[
  {
    "id": 3,
    "device_id": "ML123 ",
    "device_name": "Lämpötilan mittauspiste",
    "value": 22.23,
    "type": "XXXX",
    "date_time": "2024-04-22T15:17:15Z",
    "description": ""
  },
  {
    "id": 4,
    "device_id": "ML123 ",
    "device_name": "Lämpötilan mittauspiste",
    "value": 22.23,
    "type": "XXXX",
    "date_time": "2024-04-22T15:17:15Z",
    "description": ""
  },
  {
    "id": 5,
    "device_id": "ML123 ",
    "device_name": "Lämpötilan mittauspiste",
    "value": 22.23,
    "type": "XXXX",
    "date_time": "2024-04-22T15:17:15Z",
    "description": ""
  },
  {
```

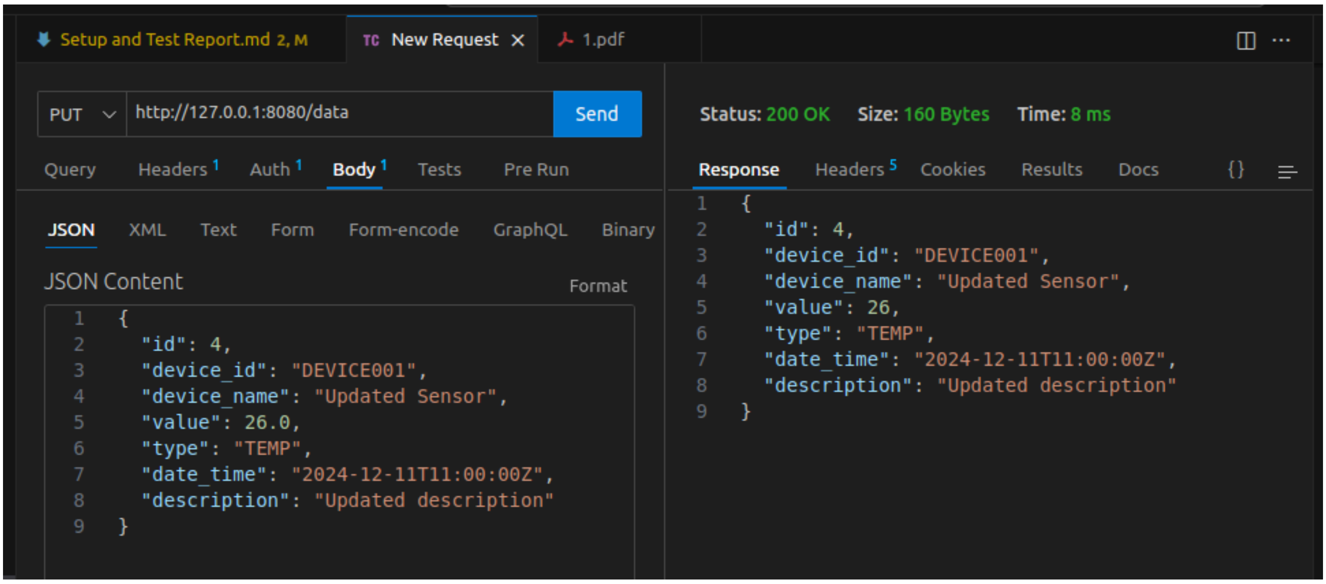


GET http://127.0.0.1:8080/data/4

```
{
 "type": "none"
}
```

Status: 200 OK Size: 152 Bytes Time: 3 ms

```
{
  "id": 4,
  "device_id": "ML123 ",
  "device_name": "Lämpötilan mittauspiste",
  "value": 22.23,
  "type": "XXXX",
  "date_time": "2024-04-22T15:17:15Z",
  "description": ""
}
```

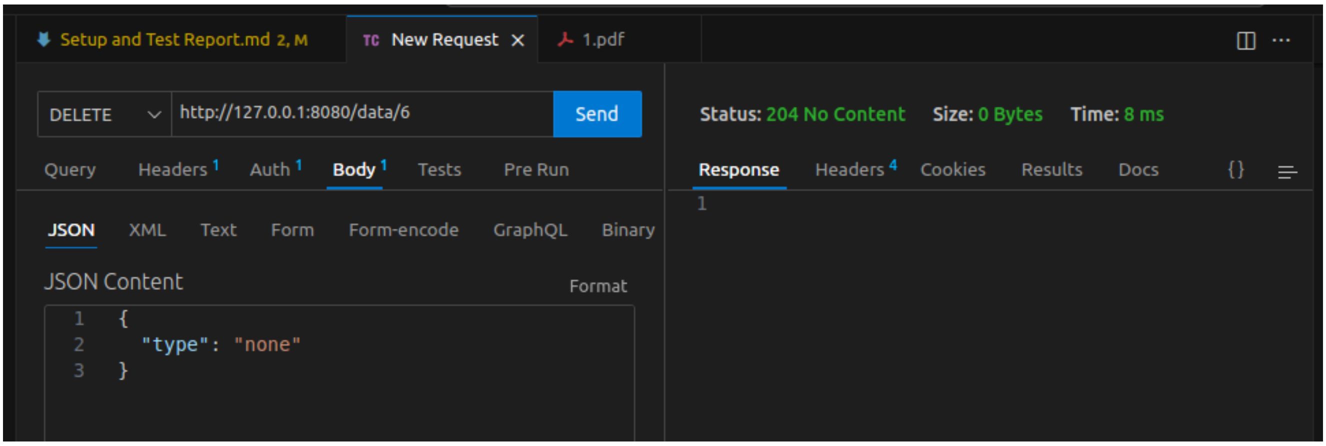


PUT http://127.0.0.1:8080/data

```
{
  "id": 4,
  "device_id": "DEVICE001",
  "device_name": "Updated Sensor",
  "value": 26.0,
  "type": "TEMP",
  "date_time": "2024-12-11T11:00:00Z",
  "description": "Updated description"
}
```

Status: 200 OK Size: 160 Bytes Time: 8 ms

```
{
  "id": 4,
  "device_id": "DEVICE001",
  "device_name": "Updated Sensor",
  "value": 26,
  "type": "TEMP",
  "date_time": "2024-12-11T11:00:00Z",
  "description": "Updated description"
}
```



DELETE http://127.0.0.1:8080/data/6

```json
{
  "type": "none"
}
```

Status: 204 No Content Size: 0 Bytes Time: 8 ms

# ⚠️ Issues Encountered

- No major issues encountered during setup or testing.

# ✅ Conclusion

The environment was set up successfully, and all tests passed. The API is ready for further development and integration.