

# Campus Bot

Group 6 | <https://github.com/SPMSHV/CSC510-S2-G6/tree/main/proj2>

CampusBot provides a production-ready REST API for managing food orders, delivery fleet tracking, and user roles. We've built a clean, tested, well-documented backend that handles:

1. Order Management — Full CRUD for student food orders with status tracking
2. Fleet Tracking — Robot/delivery agent location, battery, and status management
3. User Roles — Support for Students, Vendors, Admins, and Engineers

Why This Matters: A solid backend is 70% of any delivery app. We've done the hard work: database design, validation, testing, CI/CD, and documentation.

Your Project 3 team gets a head start instead of starting from scratch.

## What We Built

### Core Backend (Milestones 1-4):

- 6 Core APIs: Orders, Robots/Fleet, Users, Restaurants, Auth, Telemetry
- RESTful Design: Clean endpoints with proper HTTP methods
- OpenAPI 3.0 Spec: Interactive Swagger UI at /api-docs
- PostgreSQL Schema: Production-ready with indexes
- In-Memory Mode: Quick dev setup (no DB required)
- Input Validation: Joi schemas for all endpoints

### Quality & DevOps ★:

- 22 test suites, 410+ test cases, 74% code coverage.
- TypeScript — Full type safety
- GitHub Actions CI — Auto lint, test, build
- Docker Ready — docker-compose up
- ESLint + Prettier — Consistent code style



Forum



GitHub PR



### Release 2(Planned)

- Robot health monitoring & alerting
- Geofence & campus policy engine.
- Remote-control & maintenance workflows
- Real-time telemetry (WebSocket/MQTT)



### Extension Ideas for Project 3:

- 📱 React/React Native mobile app
- 🗺️ Interactive map with live robot tracking
- 📊 Analytics dashboard with delivery metrics
- 🔑 User authentication (OAuth2/JWT)
- 💳 Payment processing (Stripe)
- 🎨 Vendor management portal

## Watch Demo

### Tech Stack



Backend: Node.js 18 + Express + TypeScript  
Database: PostgreSQL 15 (optional in-memory)



Testing: Jest + Supertest



API Docs: OpenAPI 3.0 + Swagger UI



Container: Docker + Docker Compose



Quality: ESLint + Prettier



CI: GitHub Actions

### API Examples

```
GET /health → {"status":"ok","service":"campusbot"} POST /api/orders
{"userId":"student-123","vendorId":"cafe-01","items":
[{"name":"Burger","quantity":1,"price":10}], "deliveryLocation":"Engineering Build:
→ Returns Order with ID, total, status GET /api/robots → [{"robotId":"RB-
07","status":"IDLE","batteryPercent":95}] GET /api/robots/{id}/health →
{"battery_pct":72,"motor_temp_c":[43,41,40,39],"errors":[]}
```

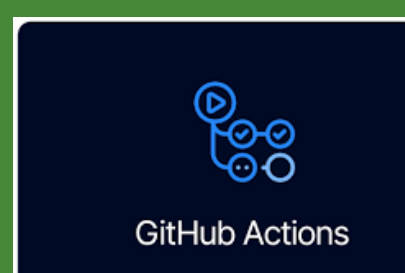
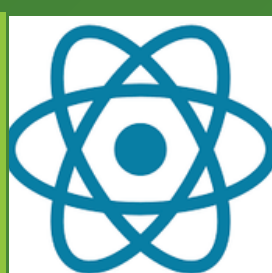
✉ Contact Team

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