Express Exercise A

Routes,req, res, JSON

Goal

Practice:

- Express routes
- req.params, req.query, req.body
- Sending JSON responses
- Using status codes correctly

Setup

1. Initialize a Node project
2. Install:
   - express
   - nodemon
3. Create server.js

Data (in memory)

Use this array at the top of your file or in a separate file:

```js
let supplies = [
    { id: 1, name: "Notebook", category: "paper", quantity: 10 },
    { id: 2, name: "Pen", category: "writing", quantity: 30 },
    { id: 3, name: "Stapler", category: "tools", quantity: 2 }
]
```

A1) Health check

GET /health

Response

- Status: 200
- JSON:

```
{
  "status": "ok",
  "time": "current server time"
}
```

A2) Get all supplies (with filters)

GET /supplies

Behavior

- Return all supplies as JSON
- Support query filters:
    - ?category=paper
    - ?minQty=5
- If no query params are provided, return everything
- If both filters exist, apply both

Example

```
/supplies?category=paper&minQty=5
```

A3) Get one supply by ID

GET /supplies/:id

Rules

- Use req.params.id
- If found → return the supply as JSON
- If not found →
    - Status: 404
    - JSON:

```
{ "error": "Supply not found" }
```

A4) Create a new supply

POST /supplies

Request body (JSON)

```
{
    "name": "Eraser",
    "category": "tools",
    "quantity": 3
}
```

Validation

- All fields required
- quantity must be a number ≥ 0

Responses

- Success:
    - Status: 201
    - JSON: the created supply (including generated id)
- Validation error:
    - Status: 400
    - JSON:

```
{ "error": "Invalid supply data" }
```

A5) Update supply quantity

PATCH /supplies/:id/quantity

Request body

```
{ "delta": -2 }
```

Rules

- delta must be a number
- Quantity cannot go below 0

Responses

- Success → updated supply JSON
- Supply not found → 404
- Invalid delta or negative result → 400

A6) Delete a supply

DELETE /supplies/:id

Rules

- If supply exists:
  - Remove it from the array
  - Return status 204 (no body)
- If not found:
  - Status 404
  - JSON:

```
{ "error": "Supply not found" }
```

Bonus (optional)

- Add GET /supplies/count
- Sort supplies by quantity (?sort=asc|desc)
- Prevent duplicate names