Practical Test

General Instructions:.

1. Internet usage is allowed for library references and documentation only (no direct code copy-paste).
2. Clearly comment your code to explain the approach.
3. Partial credit will be given for correct logic even if the final output is not perfect.
4. Share Git repo access with it env in email

Question-1: JSON Manipulation

From the below json file do the following

- Get average budget of all active campaigns from Marketing department
- Get completed project from Engineering department
- Get single manager who has more running projects or campaigns with high budget projects
- Return project name whose team member are same.

TEST.JSON


```
{
  "company": "ABC Corporation",
  "departments": [
    {
      "name": "Engineering",
      "location": "Building 1",
      "teams": [
        {
          "name": "Software Development",
          "lead": {
            "name": "John Doe",
            "experience_years": 8,
            "is_manager": true
          },
          "projects": [
            {
              "name": "Project A",
              "start_date": "2024-01-01",
              "budget": 100000.50,
              "completed": false,
              "team_members": [
                "Alice",
                "Bob",
                "Charlie"
              ]
            },
            {
              "name": "Project B",
              "start_date": "2024-03-15",
              "budget": 75000.25,
```

```
          "completed": true,
          "team_members": [
            "David",
            "Eve",
            "Frank"
          ]
        }
      ]
    },
    {
      "name": "Hardware Development",
      "lead": {
        "name": "Jane Smith",
        "experience_years": 10,
        "is_manager": true
      },
      "projects": [
        {
          "name": "Project X",
          "start_date": "2024-02-10",
          "budget": 125000.75,
          "completed": false,
          "team_members": [
            "David",
            "Frank",
            "Eve",
          ]
        },
        {
          "name": "Project Y",
          "start_date": "2024-04-20",
          "budget": 85000,
          "completed": false,
          "team_members": [
            "Jack",
            "Karen",
            "Liam"
          ]
        }
      ]
    }
  ]
},
{
  "name": "Marketing",
  "location": "Marketing Office",
  "teams": [
    {
      "name": "Digital Marketing",
      "lead": {
        "name": "Emily Brown",
        "experience_years": 6,
        "is_manager": true
      },
      "campaigns": [
        {
          "name": "Campaign 1",
          "start_date": "2024-02-01",
```

```
            "budget": 50000,
            "active": true
          },
          {
            "name": "Campaign 2",
            "start_date": "2024-04-10",
            "budget": 75000,
            "active": false
          }
        ]
      },
      {
        "name": "Product Marketing",
        "lead": {
          "name": "Michael Johnson",
          "experience_years": 7,
          "is_manager": true
        },
        "campaigns": [
          {
            "name": "Launch Event",
            "start_date": "2024-03-20",
            "budget": 100000,
            "active": true
          }
        ]
      }
    ]
  }
 ]
}
```

Question-2: Habit Tracker

Build a simple backend for a **Habit Tracker** app.

Backend (Node.js)

- POST /auth/signup and POST /auth/login
- GET /habits – List habits for current user
- POST /habits – Create a habit
- POST /habits/:id/complete – Mark as done for today
- GET /habits/:id/status?date=YYYY-MM-DD – Is this habit completed on a given day?