🛠️ DevOps Project Assignment: Deploy a Note-Taking Web App on EC2

📘 Project Title

Deploy a Note-Taking Website on AWS EC2 with Backup Strategy

🎯 Objective

Set up and deploy a basic note-taking web application on an AWS EC2 instance using either **Go** or **Python**, connect it to a **MariaDB** database, and implement a backup solution using an additional **EBS volume**.

🔍 Prerequisites

Before starting, ensure the following:

1. ✅ AWS Free Tier Account
2. ✅ EC2 instance created using Red Hat Enterprise Linu 10(t2.micro)
3. ✅ Basic knowledge of:
    - Go or Python
    - SQL (basic CRUD operations)

📋 Project Requirements

1. **Create EC2 Instance**
    - OS: RHEL 10
    - Type: t2.micro or t3.micro
    - Security Groups must allow ports: 22 (SSH), 80 (HTTP)
    - Use key pair for SSH access
2. **Develop and Deploy a Web Application**
    - Language: Go or Python
    - Feature: A simple interface for users to write and submit notes
    - Functionality: Submitted notes are stored with timestamp and displayed below the input form

3. **Configure MariaDB**
    - Install MariaDB on the EC2 instance
    - Create a database and table to store notes
    - Connect your application to the database
4. **Create and Mount Backup Volume**
    - Create a new EBS volume from AWS Console
    - Attach and mount it under `/backup` on the EC2 instance
    - Implement a process to back up the MariaDB data to this volume

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🧪 Example: User Input & Output

User Input Form (via browser):

```
css

[ Write your note here... ]
[ Save Note ]
```

Example Note:

```
arduino
CopyEdit
"Don't forget to review the IAM policy lecture notes."
```

Expected Output on Webpage:

```
vbnet
CopyEdit
🕒 2025-07-12 21:15:07
📌 Don't forget to review the IAM policy lecture notes.
```

Each new note should appear at the top with its date and time of creation.

📁 Deliverables

Your students should deliver:

- ✅ Source code for the web app (Go or Python)
- ✅ Screenshots of the running app on EC2
- ✅ MariaDB schema and tables
- ✅ Configuration of mounted volume `/backup`
- ✅ Evidence of database backup stored in `/backup`
- ✅ Documentation (README.md or PDF) explaining the setup steps