📋PROJECT MODULES STATUS UPDATE

Module 1: Data Preparation & Backend Setup

- **Task 1: Dataset Cleaning** (handle missing values, normalize categories) = ✅.
- **Task 2: Feature Engineering** (condition-to-drug mapping, patient history) = ✅.
- **Task 3: Model Input Pipeline** (train/test split, preprocessing pipeline) = ✅.

➡️ Endpoint 1: Drug Recommendation Service

- **Input**: Patient's medical record (age, condition, symptoms) = ✅.
- **Output**: Suggested drug(s) with confidence score = ✅.

Module 2: Knowledge & Query Processing

- **Task 4: NLP Query Integration**
  - Enable users to ask in natural language, e.g., *"What drug is recommended for hypertension?"* = ✅.
- **Task 5: Database Integration**
  - Connect to structured medical knowledgebase (wandb.ai) = ✅.

➡️ Endpoint 2: Query-to-Drug Recommendation

- **Input**: Natural language query.
- **Output**: Drug name(s), dosage range, and explanation.

Module 3: Model Training & Evaluation

- **Task 6: Train ML Models**

Model/ Metrics	🤝KNeighbors	🌲🌲🌲 Random Forest	🎲MultinomialNB	⚖️ Support Vector Classifier (SVC) 🏆
🎯Accuracy	95.65%	✅100%	83.70%	✅100%
📏Precision	93.92%	✅100%	81.16%	✅100%
🔁Recall	97.30%	✅100%	87.84%	✅100%
💡F1-Score	94.77%	✅100%	82.35%	✅100%

    - Compare KNeighbors, Random Forest, MultinomialNB, Gradient Boosting, and SVC= ✅.

- **Task 7: Model Evaluation**
    - Use precision, recall, F1-score to evaluate = ✅.

➡️ Endpoint 3: Predictive Recommendation

- **Input**: Patient structured profile.
- **Output**: Top-N recommended drugs.

Module 4: Frontend & Integration

- **Frontend Page 1:** Patient Form (enter patient details → get drug recommendation) = ✅.
- **Frontend Page 2:** Search Interface (type condition → recommended drug list) = ✅.
- **Frontend Page 3:** Results Visualization (charts, dosage insights) = ✅.

Tech Stack

- **Backend**: Flask / Fast API/ Stream lit = ✅.
- **ML Models**: Scikit-learn, XGBoost, Pytorch (optional) = ✅.

- **Database**: SQLite / PostgreSQL (structured data), Pinecone for embeddings, or MongoDB = ✅.
- **Visualization**: Power BI, Matplotlib, Seaborn = ✅.
- **Frontend**: Flask templates = ✅.

Developer: AanDevAnalyst

Phone: 09036259681.

Email: nuhuabduljabbar5@gmail.com

GitHub: *Completed* 💯