BUDS Crochet
A Collaborative Platform for Crafting and Exploring Crochet Patterns

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Objectives

- Develop a web-based application for crochet enthusiasts to create, visualize, and explore crochet patterns.

- Provide a seamless user experience with secure authentication and user management.

- Enable real-time crochet pattern visualization with step-by-step written instructions.

- Allow users to explore patterns based on categories and difficulty levels.

- Introduce basic crochet tutorials for beginners in video format.

Features

- User Management & Authentication
- Pattern Creation & Visualization
- Instruction Enhancement
- Pattern Exploration
- Beginner-Friendly Crochet Tutorials

Tech Stack

- **Frontend:** React.js, Tailwind CSS
- **Backend:** Node.js + Express.js, Flask API (for visualization integration)
- **Database:** MongoDB
- **Authentication:** JSON Web Tokens (JWT), Mail Verification & OTP System
- **Visualization:** Blender + Python
- **API Integration:** Ravelry API for pattern exploration

Work Completed So Far

- User Management & Authentication
- Research & Learning
- Pattern Visualization
- Instruction Generation

Demo

Upcoming Week Timeline

Week 1

- Enhance visualization by supporting multiple patterns, additional stitches, and color selection.
- Implement the feature to explain crochet terms in generated instructions.
- Store generated patterns and instructions in the database.

Week 2

- Pattern exploration based on category and difficulty (Search Engine for Crochet).

Week 3

- Develop and integrate basic crochet tutorial videos for beginners.
- Final testing and debugging of all implemented features.
- UI improvements.