Title: Poler Professor: A Java-Based Application for beginners to learn and practice poker.

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Course: Introduction to Java -CS9053

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Introduction:

I would like to create an application which can help user to learn and improve their understanding of Poker by focusing on the fundamental concept of equity calculation. The App will provide user with a set of tools and features to calculate the equity percentage of their hands in various situations, without considering external factors such as bluffing or opponent behavior.

Objectives:

1. Develop a user-friendly interface for calculating hand equity based on the outs of pokers.
2. Implement a test mode where users can practice calculating equity in different scenarios and receive feedback on their performance.
3. Allow users to create accounts and log in to track their progress and improvement over time.
4. Provide educational content on poker strategy and equity calculation to enhance users' understanding of the concepts.

Methodology:

The application will be developed using Java, with JavaFX for the GUI. The project will incorporate the following advanced concepts:

1. GUI Development: Utilize JavaFX to create a responsive and intuitive interface for users.
2. Multithreading: Use Java threads to handle background tasks such as data processing and calculations (I used it in “OutsCalculator.java” for calcualteOuts. Since I calculate each situation of hand ranking, they are independent which is good for using multithreading. However, there is not much data need to calculate, so it may not be necessary to use multithreading).
3. Database Management: Implement SQLite database to store user accounts and progress tracking data.

Timeline:

**Week 1 (April 1st - April 7th):** Project Planning and Design

Define project scope and requirements.

Design user interface and database structure.

**Week 2 (April 8th - April 14th):** Development of GUI and User Input Features

Implement user interface using JavaFX.

Develop functionality for inputting player cards, community cards, and number of players.

**Week 3 (April 15th - April 21st):** Implementation of Equity Calculation Algorithms

Develop algorithms to calculate hand equity based on input parameters.

Test equity calculation functionality.

**Week 4 (April 22nd - April 28th):** Development of Test Mode and Progress Tracking Features

Implement test mode for practicing equity calculation.

Develop progress tracking features, including user accounts and login.

**Week 5 (April 29th - May 5th):** Testing and Debugging

Test application for bugs and issues.

Conduct user testing and gather feedback.

**Week 6 (May 6th - May 10th):** Final Revisions and Documentation

Make final revisions based on feedback.

Document project, including user instructions and technical documentation.

Resources:

Java Development Kit (JDK)

JavaFX for GUI development

SQLite for database management

How to Learn Poker Percentages: https://www.wikihow.com/Learn-Poker-Percentages

Poker Professor: <https://www.pokerprofessor.com/>

Glossary of poker terms: <https://en.wikipedia.org/wiki/Glossary_of_poker_terms>

Understanding Poker Equity: <https://www.pokerbankrollapp.com/Understanding-Poker-Equity-A-Simple-Guide-to-Calculating-Your-Winning-Chances/#:~:text=To%20calculate%20your%20equity%2C%20simply,%25%20(3%2F10)>.

Ultimate Beginner’s Guide to Poker Equity: <https://www.pokernews.com/strategy/talking-poker-equity-21291.htm>

https://www.pokernews.com/poker-rules/texas-holdem.htm