GOLD MERCHANDISE SYSTEM

A MINI PROJECT REPORT

SUBMITTED BY

SAIKRISHNA H   220701238

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

RAJALAKSHMI ENGINEERING COLLEGE

(AUTONOMOUS) THANDALAM

CHENNAI-602105

2023 - 24

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1. INTRODUCTION

1. INTRODUCTION :

The Gold Selling Website is a robust e-commerce platform tailored for users interested in the buying and selling of gold. This platform offers a secure and efficient experience, enabling registered users to engage in gold transactions with ease. By leveraging real-time market data, users can view up-to-date gold prices, allowing for informed purchasing and selling decisions.

Key Features

1. **User Registration and Authentication**:
   - The platform prioritizes security by requiring users to register and log in before accessing any buying or selling functionalities. The registration process includes essential information verification to create a secure user profile, while authentication protocols help ensure that only authorized users can conduct transactions.

2. **Live Gold Prices**:
   - One of the platform's primary functions is to provide users with access to live gold prices, which are updated based on current market rates. This feature helps users make real-time buying or selling decisions. By incorporating an API that retrieves the latest gold price data, the platform ensures accuracy and reliability, displaying the price per gram and allowing users to adjust transaction quantities accordingly.

3. **Automated Buying and Selling Processes**:
   - The website streamlines the buying and selling of gold through automated transaction processes. Users can select the quantity of gold they wish to buy or sell, and the platform calculates the total cost or profit based on current rates. Once the transaction details are confirmed, the system processes the payment and updates the user's portfolio.

4. **Portfolio Management**:
   ○ Each user has access to a personalized portfolio where they can view their current gold holdings and transaction history. This feature not only helps users track their investments but also allows them to review past transactions and assess the performance of their holdings. Portfolio summaries display the quantity of gold owned, current market value, and recent changes.

5. **Secure Transactions**:
   ○ Security is a top priority for the Gold Selling Website. The platform incorporates encryption protocols for data protection and secure payment gateways to facilitate transactions. This ensures that all user data and financial information remain protected from unauthorized access.

6. **User-Friendly Interface**:
   ○ Designed with user experience in mind, the platform offers a simple and intuitive interface. From registration and login to buying, selling, and portfolio review, each process is straightforward, making the platform accessible to users of all levels of technical expertise.

Project Goals

The primary goals of this project are to:

● **Enable secure and reliable gold transactions**: By automating the process and implementing security measures, users can buy and sell gold with confidence.
● **Enhance user decision-making with real-time data**: Providing up-to-date gold prices allows users to make informed investment decisions.
● **Streamline the user experience**: With an intuitive design and automated features, users can easily manage their transactions and portfolios.
● **Ensure scalability and reliability**: The platform is built to handle increasing numbers of users and transactions as demand for online gold trading grows.

By automating these processes and maintaining high security standards, the Gold Selling Website is positioned to offer a reliable, user-friendly solution for individuals interested in investing in gold through a digital platform.

2. OBJECTIVE:

The key objectives of the project include:

- **Real-Time Pricing**: Display live market prices of gold to facilitate accurate buying and selling.
- **User-Friendly Interface**: Provide a simple and easy-to-use interface for new and experienced users alike.
- **Transaction Security**: Ensure the security of sensitive data with robust encryption.
- **Portfolio Management**: Allow users to monitor, buy, and sell gold holdings efficiently.

3. SYSTEM REQUIREMENTS:

Software Requirements:

- **Programming Language**: PHP or Node.js for backend, HTML/CSS, and JavaScript for frontend.
- **Database**: MySQL for managing user and transaction data.
- **Web Server**: Apache or Nginx for hosting the application.
- **APIs**: Integration with APIs for real-time gold prices (e.g., Gold API, Commodity APIs).

Hardware Requirements:

- **Server**: Minimum configuration server to handle user traffic and transactions.
- **User Device**: Desktop or mobile device with internet connectivity.

4. SYSTEM DESIGN:

Flow Diagram:
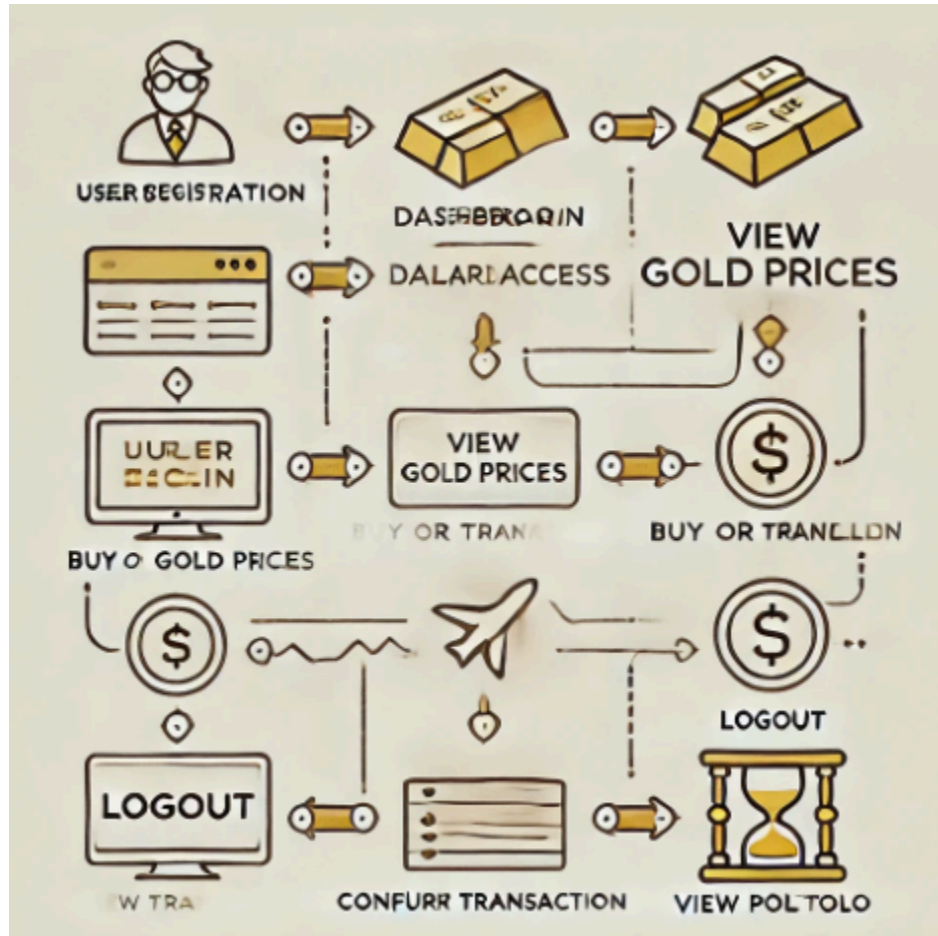
A flow diagram of the buying and selling process:

1. **User Login/Registration**: Allows users to create accounts or log in.
2. **Browse and View Prices**: Users can see live gold prices.
3. **Buying/Selling Process**: Users can select the amount, confirm orders, and complete transactions.
4. **Transaction Confirmation**: Users receive confirmation of successful purchases or sales.
5. **Portfolio Monitoring**: Users can view and manage their gold holdings.

This flow diagram enables a clear understanding of the customer journey on the website.

5. MODULES AND FUNCTIONALITIES:

- **User Module**: Manages user authentication, profile information, and login sessions.
- **Price Module**: Connects with an external API to retrieve and display live gold prices.
- **Transaction Module**: Manages buying, selling, and confirmation of transactions.
- **Portfolio Module**: Shows users' gold holdings and transaction history.
- **Admin Module**: Allows administrators to manage users, monitor transactions, and update site information.

2. BACKEND AND DATABASE DESIGN:

Database Structure:

- **Users Table**: Stores user account information (user_id, name, email, password, contact details).
- **GoldPrices Table**: Stores real-time gold price data (price_id, price_per_gram, date, timestamp).
- **Transactions Table**: Stores details of each user transaction (transaction_id, user_id, quantity, price, type (buy/sell), timestamp).
- **Portfolio Table**: Tracks users' total gold holdings (portfolio_id, user_id, quantity).

Users Table :

Column Name	Data Type	Description
user_id	INT	Primary key, unique identifier for each user
name	VARCHAR	User's full name
email	VARCHAR	User's email address
password	VARCHAR	Encrypted password
contact	VARCHAR	Contact details of the user

GoldPrices Table:

Column Name	Data Type	Description
price_id	INT	Primary key, unique identifier for each price entry
price_per_gram	DECIMAL	Current price of gold per gram
date	DATE	Date of the price record
timestamp	TIMESTAMP	Exact time of the price record

Transactions Table:

Column Name	Data Type	Description
transaction_id	INT	Primary key, unique identifier for each transaction
user_id	INT	Foreign key, references user_id in Users table
quantity	DECIMAL	Amount of gold (in grams) transacted
price	DECIMAL	Total transaction amount
type	ENUM	Type of transaction: 'buy' or 'sell'
timestamp	TIMESTAMP	Exact time of the transaction

Portfolio Table :

Column Name	Data Type	Description
portfolio_id	INT	Primary key, unique identifier for each portfolio entry
user_id	INT	Foreign key, references user_id in Users table
quantity	DECIMAL	Total quantity of gold (in grams) owned by the user

Explanation:

An ER diagram depicts the relationships between these tables. The Users table connects to the Transactions and Portfolio tables, allowing user transactions and holdings to be efficiently tracked and managed.

7. FRONTEND DESIGN:

User Interface:

- **Home Page**: Shows live gold prices and an option for users to log in or register.
- **Dashboard**: Allows logged-in users to access their portfolio, recent transactions, and buying/selling options.
- **Transaction Page**: Manages buy/sell processes and displays real-time calculations based on the latest gold prices.
- **Portfolio Page**: Allows users to view their holdings and the overall value based on current prices.

Technologies Used:

- **HTML/CSS**: Used for page structure and design.
- **JavaScript**: Ensures interactivity, such as displaying live prices and updating values.
- **AJAX**: For seamless data refresh without page reloads.

8. TESTING AND IMPLEMENTATION:

Testing Strategy:

- **Unit Testing**: Each module (e.g., user login, transaction processing) tested independently.
- **Integration Testing**: Verified that modules work together, e.g., login, transaction, and portfolio views.
- **User Acceptance Testing (UAT)**: Ensured the system meets user expectations and requirements.

Sample Test Cases:

1. **Price Display Test**: Ensure gold prices update accurately and in real time.
2. **Transaction Processing Test**: Verify that transactions occur correctly and confirmation details are accurate.
3. **Security Test**: Check encryption, SSL, and 2FA functionality.

Implementation Details:

The system was implemented in a controlled environment with test users, confirming the system's reliability. It was then deployed on a web server for actual usage, integrating real-time gold prices and secure transaction handling.

9. SECURITY MEASURES:

To ensure the safety and security of user data, the following measures are implemented:

- **Data Encryption**: All sensitive information, including user passwords and transaction details, is encrypted.
- **Two-Factor Authentication (2FA)**: Option for users to enable 2FA for additional login security.
- **SSL Encryption**: All transactions occur over a secure SSL connection.

- **API Security**: Secure access to the gold price API with an API key, ensuring limited access to authorized users only.

10. Conclusion and Future Scope

The Gold Selling Website successfully implements a secure and reliable platform for users to buy and sell gold online. The project achieves its goals of providing real-time pricing, secure transactions, and user-friendly interfaces, making the buying and selling process straightforward and efficient.

Future Scope:

Potential enhancements include:

- **Mobile Application**: A mobile app version to reach a broader user base.
- **Multi-Currency Support**: Enable support for multiple currencies for international users.
- **Advanced Portfolio Analytics**: Add features that show users detailed analytics on their gold holdings.

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