

**Course: Object Oriented Programming**

**Assignment#4:**

**Title:**

***“A product implementing java fx, file handling and Object-Oriented Programming****”*

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| Assignment number: | 4 |
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| Course instructor: | Sir Shahid Bhatti |
| Due Date: | 19-12-2024 |

Art Gallery Management System Documentation

**1. Introduction**

The **Art Gallery Management System** is an interactive JavaFX-based application designed for managing artworks efficiently. It incorporates user authentication, search functionalities, and artwork management features. The system is built using core Java principles, JavaFX for the graphical interface, and file handling for data persistence.

**2. Steps for Code Execution**

1. **Setup and Environment**:
   * Ensure you have Java Development Kit (JDK) installed on your system.
   * Configure your Integrated Development Environment (IDE) to support JavaFX libraries.
2. **Run the Application**:
   * Compile and run the main JavaFX application file.
   * Ensure all supporting files like artworks.txt are present in the working directory.
3. **Login or Register**:
   * Launch the application to display the login window.
   * Use an existing account to log in or create a new account.
   * In case of forgotten credentials, use the **Forget Password** functionality.
4. **Explore Artworks**:
   * After successful login, access the main interface displaying available artworks.
   * Each artwork is presented with details including the title, artist name, price, stock availability, and image URL.
5. **Manage Artworks**:
   * Use the options to add, delete, or edit artwork details.
   * Search for artworks by title or artist name using the search functionality.
6. **Exit Application**:
   * Exit the application using the dedicated exit button.

**3. Core Functionalities**

1. **Authentication System**:
   * **Login**: Authenticate users with existing credentials.
   * **Register**: Create new user accounts and store them securely.
   * **Forget Password**: Allow users to retrieve or reset their credentials.
2. **Artworks Management**:
   * **Display Artworks**: Present artworks in organized HBoxes, showing title, artist name, price, stock, and image URL.
   * **Add Artwork**: Insert new artwork details into the system.
   * **Edit Artwork**: Modify details of existing artworks.
   * **Delete Artwork**: Remove artworks from the system.
3. **Search Functionality**:
   * Search artworks by title or artist name to quickly locate items.
4. **Exit Button**:
   * Close the application safely.
5. **File Handling**:
   * Use files like artworks.txt to store and retrieve artwork details persistently.
   * Handle user data securely for authentication.

**4. Backend Files**

1. **user\_credentials.txt**:
   * Stores artwork details such as title, artist name, price, stock availability, and image URL.
   * Maintains user credentials for authentication.
2. **JavaFX Main Application File**:
   * Initializes the JavaFX environment and serves as the entry point.

**5. Key Features**

* **User-Friendly Interface**: Leverages JavaFX to create an intuitive and visually appealing UI.
* **Secure Authentication**: Ensures only authorized users can access the system.
* **Dynamic Artwork Management**: Provides seamless options to add, edit, and delete artworks.
* **Efficient Search**: Enables quick retrieval of artwork details using search criteria.
* **Persistent Data Storage**: Uses file handling to maintain data integrity and availability.

**6. Conclusion**

The **Art Gallery Management System** is a comprehensive solution for managing art galleries, offering features like user authentication, artwork management, and efficient search capabilities. Built with JavaFX and file handling, this system ensures a seamless and user-friendly experience for both gallery managers and users.











