📘 Project Documentation

# 📌 Project Title: Online Examination System (Java Console Application)

# 📄 Objective

The purpose of this project is to create a console-based Java application that simulates an online examination system. It allows users to register, log in, update profile information, take multiple-choice exams, and view scores — all within a timed session.

# 🧩 Key Features

|  |  |
| --- | --- |
| Feature | Description |
| ✅ User Registration | User provides a username and password at the start. |
| ✅ Login Authentication | User must log in with the correct credentials to access the exam or profile. |
| ✅ Update Profile & Password | User can update their username and password after login. |
| ✅ MCQ Exam | 10 multiple-choice questions with 2 options each. |
| ✅ Timer & Auto-Submission | Timer set to 10 minutes; if not submitted, auto-submission is triggered. |
| ✅ Score Calculation | Automatically evaluates answers and gives a score. |
| ✅ Session Logout | Logs out user automatically after exam submission or manually from the menu. |

# 🛠 System Requirements

|  |  |
| --- | --- |
| Requirement | Details |
| Programming Language | Java 8+ |
| IDE (Optional) | Eclipse, IntelliJ, VS Code, or any text editor |
| Runtime | Java Development Kit (JDK) installed |
| Input/Output | Console-based I/O |

# ⚙ How to Compile and Run

🔹 Step 1: Save the File  
Save the Java code in a file named: OnlineExamSystem.java

🔹 Step 2: Open Terminal or Command Prompt  
Navigate to the directory where the file is saved:

cd path/to/your/file

🔹 Step 3: Compile the Code  
javac OnlineExamSystem.java

🔹 Step 4: Run the Program  
java OnlineExamSystem

# 🧪 Sample Run (User Interaction)

Welcome to the Online Examination System  
Enter a username to register: alice  
Enter a password to register: 12345  
Successfully registered! :)  
  
Log in to take the exam:  
Username: alice  
Password: 12345  
Login successful. Best of luck!  
  
--- MENU ---  
1. Update Profile  
2. Start Exam  
3. Logout  
Enter your choice: 2  
  
You have 10 minutes to complete the exam.  
  
Question 1:  
1. Option 1  
2. Option 2  
Your answer (1 or 2): 1  
  
... (continues for 10 questions)  
  
Would you like to submit?  
1: Yes  
2: No (Auto-submit after time runs out)  
1  
  
Your score is 7 out of 10.  
Thanks for taking the exam. Best of luck! :)  
Logout successful.

# 🔧 Code Structure Overview

|  |  |  |
| --- | --- | --- |
| Component | Method | Purpose |
| Main Class | OnlineExamSystem | Main program logic |
| Registration | Constructor | User registers on program start |
| Login | login(Scanner) | Authenticates the user |
| Update Profile | updateProfile(Scanner) | Allows changing username and password |
| Start Exam | startExam(Scanner) | Presents 10 questions and records answers |
| Timer | Thread.sleep() | Waits for time limit if not manually submitted |
| Submit Exam | submitExam() | Calculates and shows result |
| Logout | logout() | Ends the session |

# 📝 Future Improvements

* ✅ Add a database or file system for persistent user data.
* ✅ Load real MCQ questions from a file or database.
* ✅ Add support for multiple users and admin panel.
* ✅ Use real countdown timers or threads for real-time behavior.
* ✅ Convert to GUI using Java Swing or JavaFX.

# 📌 Summary

This Java console application is a simple and complete simulation of an Online Examination System that:  
\* Uses core Java features (classes, arrays, conditionals, loops)  
\* Implements basic user account handling  
\* Offers an MCQ-based timed exam  
\* Is easy to compile, run, and extend