Project ideas

Project Name	Description	Key Features
1. ATM Simulator	Simulate an ATM system where multiple ATMs handle transactions like deposits and withdrawals, check balance simultaneously.	Threads for each ATM, synchronization to avoid overdrawing, and transaction logging for shared accounts.
2. File Search Tool	Create a tool that searches for a keyword across multiple text files in parallel.	Assign threads to process different files concurrently, merge results into a summary, and display progress in a simple UI.
3. Movie Ticket Booking	Simulate a system where multiple users can book movie tickets at the same time.	Threads for user booking actions, prevent double-booking with synchronization, and dynamically update seat availability.
4. Multithreaded Timer	Build a timer app that allows multiple timers to run independently and notify users when time is up.	Each timer operates in its own thread, with options to pause, reset, or add new timers dynamically.
5. Task Reminder App	Develop a reminder app that handles multiple reminders running concurrently.	Threads for individual reminders, notifications when reminders are triggered, and options to edit or remove reminders.
6. Document Processor	Process large text documents by splitting them into chunks and handling them in parallel.	Threads process sections of the document independently (e.g., counting words), then merge results into a final output.
7. Weather Data Aggregator	Simulate a system that collects weather data for different locations simultaneously.	Threads fetch and process data for various locations, consolidate the results, and refresh periodically with thread scheduling.
8. Online Quiz Platform	Create a simple quiz app where multiple users take quizzes at the same time.	Threads for handling user sessions, synchronized access to shared resources like the question bank, and real-time score updates.
9. File Downloader	Build an app that downloads multiple files concurrently.	Threads handle file downloads in parallel, track progress for each download, and consolidate all files into a specified folder.

10. Social Media Fetcher	Design a tool that fetches posts or content from different social media platforms simultaneously.	Threads fetch data from different sources, consolidate results into a feed, and refresh content periodically.

Evaluation Criteria

Criteria	Marks	Explanation
Multithreading	**5**	• Did the project make effective use of threads? • Were issues like race conditions and deadlocks avoided?
System Complexity	**4**	• Does the project reflect a realistic and challenging problem? • Is it modeled after real-life systems?
Performance Improvement	**3**	• How much faster or more efficient is the system with multithreading compared to a single-threaded version?
Functionality	**3**	• Does the system achieve its goals? • Are all main features implemented and working as intended?
Code Quality	**2**	• Is the code well-written, easy to understand, and modular? • Does it follow good programming practices?
Creativity/Innovation	**2**	• Did the team come up with creative solutions or add any unique features to enhance the project?
Documentation	**1**	• Is the project well-documented? • Are the implementation details and usage instructions clear?
Presentation/Demo	**1**	• Was the project presented clearly?

		• Did the team effectively demonstrate how their system works?

Notes:

- All Projects Must have GUI.
- GUI Must Have a Separate thread to avoid UI Hanging.
- All projects must handle thread safety.
- Avoid Deadlocks and starvation.