

Final Core Java Console Projects

1. To-Do Task Manager

- **Concepts Used:** Collections (ArrayList, LinkedList, PriorityQueue).
- **Features:**
 - Add tasks with priority.
 - Mark task as completed.
 - Show pending/completed tasks.
 - Use PriorityQueue for deadlines.

2. Hotel Reservation System

- **Concepts Used:** OOPs, Collections (List, Map), Exception Handling.
- **Features:**
 - Add/View/Delete rooms.
 - Book rooms for customers.
 - Prevent double booking using exception handling.
 - Show customer details.

3. Railway Ticket Reservation

- **Concepts Used:** Multithreading, Collections, Exception Handling.
- **Features:**
 - Multiple users try booking seats at the same time.
 - Handle race conditions using synchronized.
 - Waiting list queue using PriorityQueue.

4. Employee Management System

- **Concepts Used:** Encapsulation, Inheritance, Collections, Packages.
- **Features:**
 - Store employee details in ArrayList.
 - Calculate salary, bonus (with polymorphism).
 - Search employee by ID/name.

5. Banking Application (Console ATM Simulation)

- **Concepts Used:** OOPs, Exception Handling, Collections.
- **Features:**
 - Deposit, Withdraw, Check Balance.
 - Throw InsufficientBalanceException.
 - Maintain transaction history in ArrayList.

6.Student Course Registration System

- **Concepts Used:** Collections (Map), OOPs, Packages.
- **Features:**
 - Students can register for multiple courses.
 - Store in `HashMap<Student, List<Course>>`.
 - Show student-wise or course-wise registrations.