

# Recruitment Task 2 - BlockBloom Project

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## Project Overview

The BlockBloom project is a movie ticket booking system that allows both managers and customers to interact with the system. The manager can add movies and view collected funds, while customers can book/cancel tickets and manage their accounts.

## System Features

- Manager account creation (single instance)
- Customer account creation (multiple instances)
- Movie addition with complete details
- Ticket booking and cancellation
- Balance management for both customers and manager
- Password change functionality

## Implementation Details

The system is implemented using C++ with OOP principles. Key classes include:

- `Movie` - Handles movie details and seat management
- `Customer` - Manages customer accounts and bookings
- `Manager` - Handles the single manager account
- `MovieBookingSystem` - Main system class that orchestrates all operations

## Code Implementation

Below is the complete implementation of the BlockBloom movie booking system:

```
1 // [Your entire C++ code here exactly as provided]
2 #include <iostream>
3 #include <vector>
4 #include <string>
5 using namespace std;
6
7 class Movie
8 {
9     private:
10         int id;
11         string title;
12         string startTime;
13         int movie_duration;
14         int capacity;
15         int bookedTickets;
16         double ticketPrice;
17 }
```

```

18 public:
19     Movie(int id, string title, string startTime, int movie_duration, int capacity,
double ticketPrice)
20         : id(id), title(title), startTime(startTime), movie_duration(movie_duration)
, capacity(capacity), bookedTickets(0), ticketPrice(ticketPrice) {}
21
22     int getId() const
23     {
24         return id;
25     }
26     string getTitle() const
27     {
28         return title;
29     }
30     string getStartTime() const
31     {
32         return startTime;
33     }
34     int getMovieDuration() const
35     {
36         return movie_duration;
37     }
38     int getAvailableSeats() const
39     {
40         return capacity - bookedTickets;
41     }
42     double getTicketPrice() const
43     {
44         return ticketPrice;
45     }
46
47     int bookTicket()
48     {
49         if (bookedTickets < capacity)
50         {
51             bookedTickets++;
52             return 1;
53         }
54         else
55         {
56             return 0;
57         }
58     }
59
60     int cancelTicket()
61     {
62         if (bookedTickets > 0)
63         {
64             bookedTickets--;
65             return 1;
66         }
67         else
68         {
69             return 0;
70         }
71     }
72
73     void display() const
74     {
75         cout << endl;
76         cout << "Details of the movie are :\n" << "Movie ID: " << id << "\nMovie Name
: " << title << "\nStart Time: " << startTime
77         << "\nDuration: " << movie_duration << " mins\nAvailable Seats: " <<
getAvailableSeats()
78         << "\nTicket Price: Rs" << ticketPrice << "\n\n";
79     }
80 };
81
82 [Rest of your code...]

```

Listing 1: BlockBloom Movie Booking System

## Usage Instructions

1. First create a manager account (can only be done once)
2. Login as manager to add movies
3. Create customer accounts
4. Customers can then login to book/cancel tickets
5. Manager can view total collected funds

## Assumptions

- Movie ID is an integer
- All monetary values are in Rupees
- Time is in HH:MM format
- Duration is in minutes

## Learning Outcomes

- Implementation of OOP concepts in a practical project
- Handling of user authentication and authorization
- Management of complex data relationships
- Development of a complete menu-driven system