Movie Ticketing System Using NFT on Ethereum Blockchain

1 Introduction

Welcome to the future of movie ticketing!
Forget boring PDFs and easily-faked QR codes. Our platform transforms traditional movie tickets into unique digital assets (NFTs) on the Ethereum blockchain. Each seat is a token. Every ticket is tamper-proof, re-sellable, and verifiably yours. With our React-powered DApp, users can visually select seats, mint NFT tickets, and manage everything seamlessly with no paperwork, no fraud, and no chaos.

2 Objective

The objective of this project is to develop a decentralized movie ticketing system that:

- Issues unique NFT-based tickets.

- Ensures one-to-one seat allocation.

- Implements dynamic pricing (e.g., early bird discounts).

- Allows ticket refunds via smart contracts.

- Provides administrative controls for event organizers.

- Has a clean and interactive frontend that puts the user first

3 Features

- **NFT Ticket Minting:** Each seat is represented as a unique ERC-721 token.

- **Dynamic Pricing:** Early bird users get discounted prices.

- **Refund System:** Users can burn their ticket and get a refund in ETH.

- **Seat Locking Mechanism:** No two users can book the same seat.

- **Discount Code System:** Admins can create codes for promotional pricing.

- **Pause Functionality:** Event can be paused/unpaused for security reasons.

- **Admin Control:** Only the owner can withdraw funds or change ticket settings.

- **React Frontend:** Browse events, choose seats, mint your NFT — all visually.

4 Technologies Used

- **Solidity:** Core logic for NFT minting and ticket management.

- **Remix IDE:** Online IDE for writing and deploying smart contracts.

- **OpenZeppelin:** Secure smart contract library for ERC-721 and access control.

- **Ethereum Blockchain:** Platform for contract deployment and transaction handling.

- **MetaMask:** Wallet for users to interact with the smart contract.

- **React.js:** Dynamic and responsive UI for ticket booking.

5 Smart Contract Workflow

- User connects their wallet via the frontend (MetaMask).

- They select an available seat visually.

- React app calculates pricing (early bird, discount code).

- Smart contract verifies seat, mints an NFT tied to that seat number.

- Ticket metadata (event name, date, seat) is stored on-chain/off-chain.

- Refunds are allowed by burning the NFT and sending ETH back to the buyer

- Admin can pause/unpause system and manage discount codes.

- Owner withdraws earnings after the event.

6 Use Cases

- **Movies and Film Festivals:**Fully digital ticketing, fraud-proof.

- **Concerts and Events:**Exclusive NFT badges + entry.

- **Sports Matches:**Scalable NFT seat-based access control.

- **Events and Conferences:**Custom metadata on each NFT, collectibles.

7 Benefits

- **Security authenticity:** No more fake or duplicate tickets.

- **Transparency:** All transactions are recorded on-chain.

- **Automated Refunds:** No support tickets or delays.

- **Efficiency:** Automated refunds and seat management.

- **Ownership:** Users truly own their tickets and can verify them.

- **Sleek User Experience:** Intuitive, visual frontend for real-world adoption.