

SMART INDIA HACKATHON 2024



- **Problem Statement ID – 1589**
- **Problem Statement Title- Student Innovation**
- **Theme- Blockchain & Cybersecurity**
- **PS Category- Software**
- **Team ID-**
- **Team Name- Tetris**



Proposed Solution

- **Blockchain-Based Platform:** A decentralized booking platform built on blockchain technology.
- **Transparent and Secure:** Ensures transparency and security for both customers and service providers.
- **Streamlined Booking Process:** Simplifies the booking process for services like accommodations, transportation, and activities.
- **Eliminates Middlemen:** Reduces costs by removing intermediaries in the booking process.
- **Smart Contracts:** Uses smart contracts to automate payments and service agreements, ensuring smooth transactions.
- **Immutable Reviews:** Stores verified reviews on the blockchain, preventing fraud and manipulation.

Problem Resolution

- **Eliminates Middleman Fees:** Removes intermediaries, lowering booking costs for companies and customers.
- **Prevents Fraud:** Verifies company listings using blockchain, preventing fake listings and manipulation.
- **Improves Transparency and Security:** Direct company-customer connections ensure secure bookings and protect user data.

Unique Value Propositions

- **Smart Payment Method:** Utilizes smart contracts to manage payments securely, releasing funds to service providers only after order confirmation.
- **Decentralized Review System:** Ensures review authenticity and prevents tampering by storing verified reviews on the blockchain.
- **Cryptocurrency Payments:** Allows transactions using cryptocurrency or tokens, streamlining payments and reducing fees.

Technologies to be Used:

1. Blockchain & Smart Contracts:

- **Ethereum or Binance Smart Chain (BSC)** for decentralized smart contract development.
- **Solidity** for writing smart contracts, and **Web3.js** for blockchain interaction.

2. Backend Development:

- **Node.js** with **Express.js** for server-side logic and API handling.
- **IPFS** for decentralized storage of reviews and other content.

3. Frontend Development:

- **React.js** or **Vue.js** for building the user interface.
- Core web technologies: HTML5, CSS3, JavaScript (ES6+).

4. Payment & Identity:

- **MetaMask** wallet integration for cryptocurrency payments.
- Self-Sovereign Identity (SSI) frameworks for decentralized identity verification.

Implementation Flow:



Customer Visits



Search and
Browsing listings



Proceeds with Booking
(Smart Contract Created)



Payment made
via MetaMask

Identity Verification
(Interacts with
SSI System)



Leave review
(Verification-
Optional)

Service confirmed
by Customer
(Smart Contract
releases payment)

Feasibility Overview:

- **Technical Viability:**
 - **Blockchain Utilization:** Effective use of **Ethereum** or **Binance Smart Chain** for **smart contracts** and decentralized apps.
 - **Smart Contracts:** Feasible development and deployment with **Solidity** and **Web3.js**.
- **Financial Feasibility:**
 - **Cost Efficiency:** Reduction of middleman fees benefits both customers and service providers.
 - **Revenue Opportunities:** Potential revenue streams include transaction fees, premium listings, and value-added services, which can sustain the platform financially.
- **Market Potential:**
 - **Growing Demand:** Increasing interest in decentralized solutions within the tourism industry.
- **Operational Practicality:**
 - **Scalability:** Blockchain systems can scale with attention to performance and costs.
 - **Integration Feasibility:** Practical integration with existing systems like payment gateways and wallets.
 - **User Experience:** The platform's secure, streamlined process will encourage users to adopt and frequently use the service.

Potential Risks and Solutions:

1. **Technical Risk:**
 - **Risk: Smart Contract Vulnerabilities** — Security flaws or bugs in smart contracts that can be exploited.
 - **Solution:** Conduct thorough code audits, use formal verification tools, and follow best practices in smart contract development.
2. **Financial Risk:**
 - **Risk: Cryptocurrency Volatility** — Fluctuations in cryptocurrency values impacting transaction stability.
 - **Solution:** Use stablecoins for transactions and implement hedging strategies to manage price fluctuations.
3. **Market Risk:**
 - **Risk: Adoption Challenges** — Difficulty in attracting users and service providers to the new platform.
 - **Solution:** Launch targeted marketing campaigns and offer platform tokens as incentives to drive adoption.
4. **Operational Risk:**
 - **Risk: User Education** — Difficulty in educating users about blockchain technology and its benefits.
 - **Solution:** Provide comprehensive educational resources and support to help users understand and adopt the technology.

Potential Impact on the Target Audience:

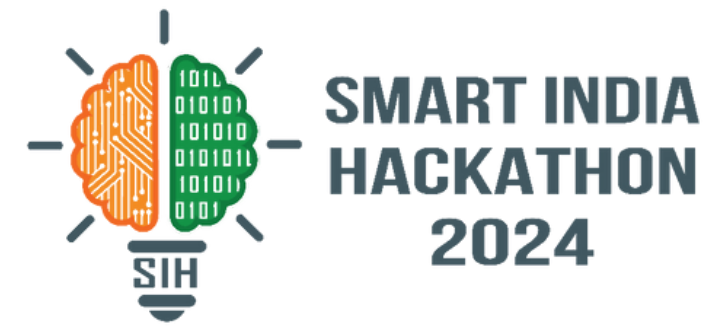
- **Cost Savings:** By eliminating middleman fees, both customers and companies benefit from lower booking costs.
- **Enhanced Trust:** Verified company listings and immutable reviews build trust and credibility in the booking process.
- **Increased Security:** Direct interactions between customers and service providers protect personal data and reduce fraud.
- **Efficient Transactions:** Cryptocurrency payments and smart contracts streamline transactions and reduce processing delays.
- **Improved Experience:** A transparent, decentralized system offers a smoother, more reliable booking experience.

Benefits of the Solution:

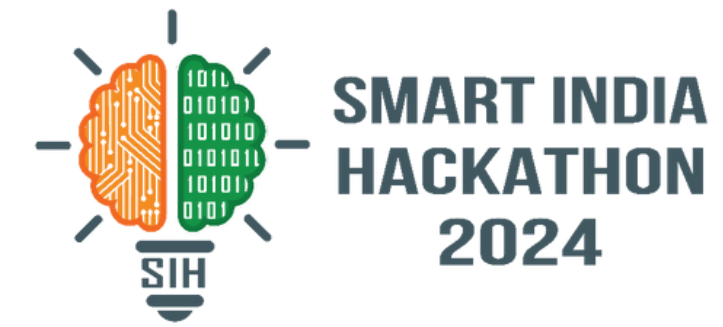
- **Social:**
 - **Increased Trust:** Immutable reviews and verified listings foster greater trust between customers and service providers.
 - **Enhanced Transparency:** A decentralized system provides a clear and honest view of service offerings and user feedback.
- **Economic:**
 - **Cost Reduction:** Eliminates middleman fees, lowering costs for both companies and customers.
 - **Streamlined Transactions:** Cryptocurrency payments and smart contracts speed up and simplify financial transactions, reducing transaction fees.
- **Operational:**
 - **Fraud Prevention:** Blockchain technology prevents fraudulent listings and tampering with reviews, ensuring reliable service.
 - **Automated Processes:** Smart contracts automate payment and booking processes, reducing administrative overhead and human error.

TETRIS

RESEARCH AND REFERENCES



IMPORTANT INSTRUCTIONS



Please ensure below pointers are met while submitting the Idea PPT:

1. Kindly keep the maximum slides limit up to six **(6)**. (Including the title slide)
2. Try to avoid paragraphs and post your idea in points /diagrams / Infographics /pictures
3. Keep your explanation precise and easy to understand
4. Idea should be unique and novel.
5. You can only use provided template for making the PPT without changing the idea details pointers (mentioned in previous slides).
6. You need to save the file in PDF and upload the same on portal. No PPT, Word Doc or any other format will be supported.

Note - You can delete this slide (Important Pointers) when you upload the details of your idea on SIH portal.