



Hack Genesis '25 Project Presentation

TEAM NAME - **Tech_recons**

PROBLEM DOMAIN- The Connectivity Challenges

PROJECT TITLE - Unified Guest Identity & Service Management
in Hospitality

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OneTapStay

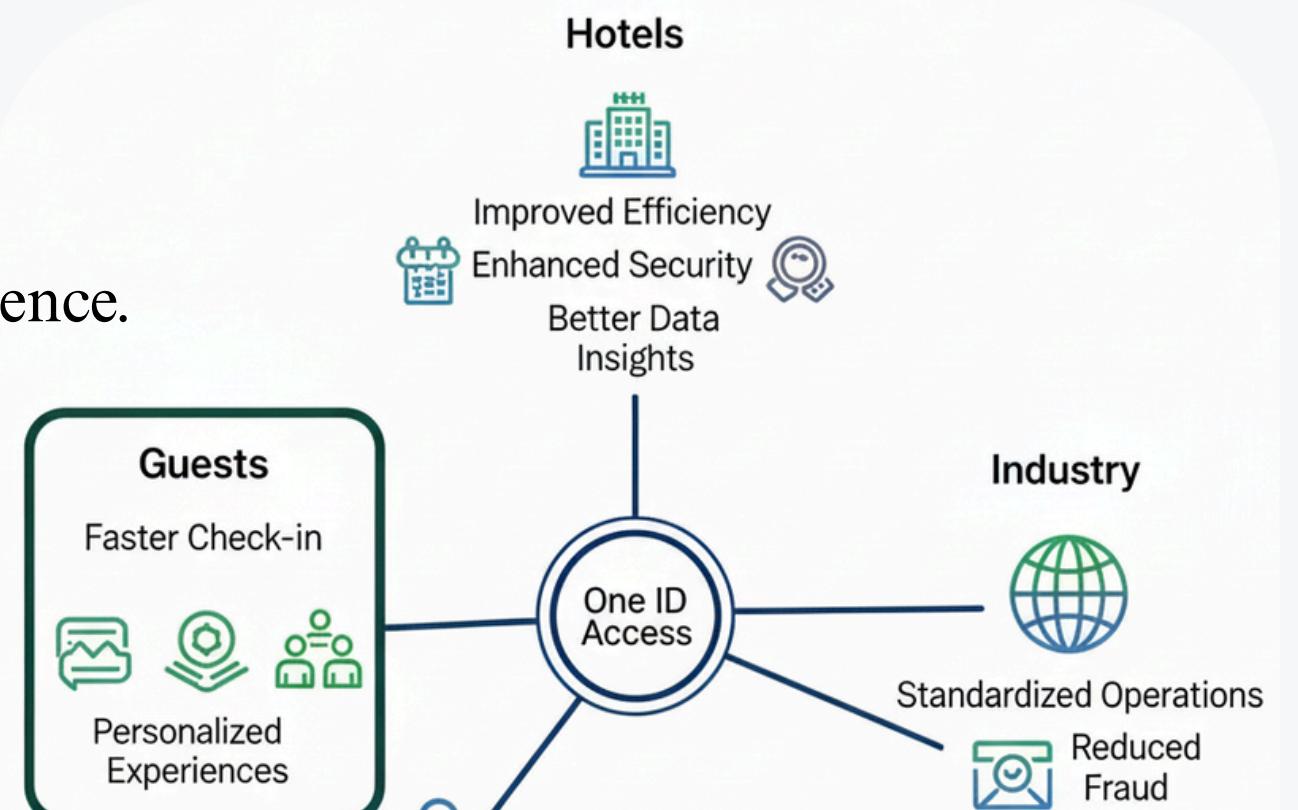
“~From check-in to check-out
– everything, everywhere, all in one ID.”

What we are Solving?

- Guest journey is fragmented – separate logins for room, Wi-Fi, dining, spa, billing, and loyalty.
- Guests must repeat details at every service point → poor experience.
- Hotels lack a unified view of guest behavior & preferences.

Why does it matters?

- Guests → Seamless “one ID” access, faster, personalized, stress-free stay.
- Hotels → Better efficiency, stronger loyalty, more revenue.
- Industry → Moves towards smart, connected hospitality.



Solution Overview

A unified digital guest identity that seamlessly connects all services—room, dining, spa, billing, and loyalty—into one smooth hospitality experience.

Key Features-

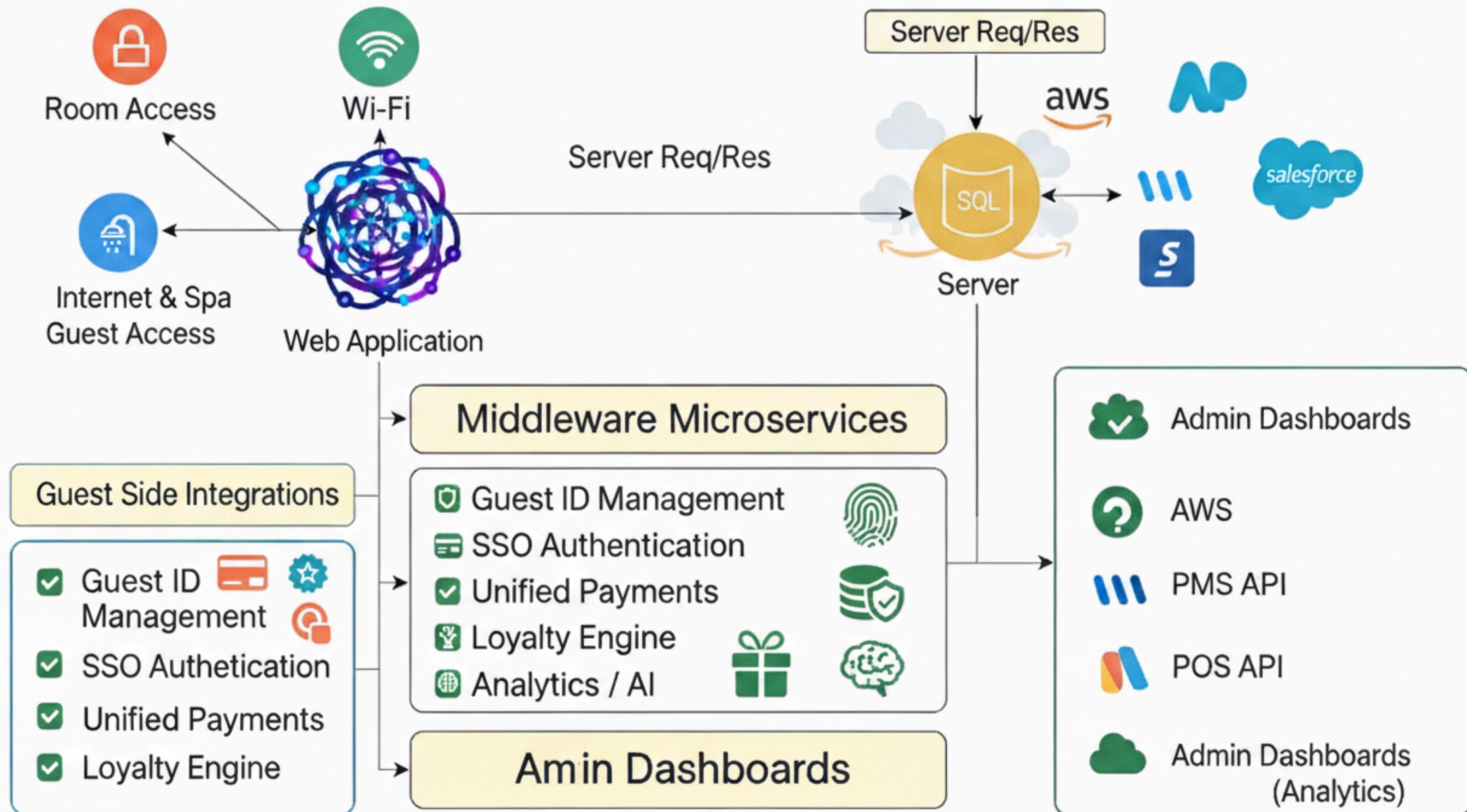
- Smart Guest Dashboard (Single ID Hub)
- QR / NFC Based Access
- AI-Powered Personalization
- Integrated Digital Wallet
- Real-Time Loyalty Tracking
- Guest Journey Timeline
- Feedback Loop Integration
- Cross-Property Identity Recognition
- 360° Analytics for Admins



Technical Implementation



Unified Guest Identity & Service Management



- **Frontend:** React.js, Next.js, Tailwind
- **Backend:** Node.js (Express/NestJS) or Python (FastAPI)
- **Database:** PostgreSQL, MongoDB, Redis
- **Network Infrastructure:** TP-Link Omada SDN, TP-Link switches.
- **Authentication:** Keycloak/Auth0, RADIUS for Wi-Fi
- **Integrations:** PMS, POS, CRM APIs
- **Infrastructure:** AWS/GCP, Docker/Kubernetes
- **Analytics:** Power BI / Google Data Studio
- **Security:** TLS, MFA, VPN, GDPR compliance

Impact

- Guests / Users: Effortless, personalized experience; control everything from their phone.
- Hotel Staff / Management: Easy service management, fewer errors, faster response.
- Hospitality Industry: Higher efficiency, better guest experience, data-driven decisions.
- Community / Environment: Less paper use, optimized resource consumption.



~One Key to Every Experience.

Innovation

- All-in-One Platform: Check-in, room access, dining, spa, and billing—everything in one app.
- Smart AI Bot Assistance: Guests can ask the bot anything—services, local info, recommendations—24/7.
- QR Code Integration: Quick access to rooms, menus, and services without physical cards or reception wait.
- Smart Personalization: AI recommends services and experiences based on guest preferences.
- Real-Time Integration: Instant syncing across PMS, POS, Wi-Fi, and loyalty programs.
- Data-Driven Insights: Dashboard for hotels to optimize occupancy, services, and satisfaction.
- Contactless & Modern: Fully digital experience—payments, bookings, and room access for safety and convenience.

Impact Metrics

- **Time Saved:**

Guests spend less time at check-in/out thanks to QR code and unified platform.
Staff can process requests faster with AI bot support and real-time integration.

- **Cost Reduced:**

Less paper usage and reduced staffing load due to automation.
Efficient resource management (energy, inventory, services) lowers operational costs.

- **Reach & Adoption:**

High adoption rate by guests preferring contactless and tech-driven services.
Can be scaled across multiple hotels, resorts, and clubs.

- **Guest Satisfaction / Engagement:**

Positive feedback from personalized AI recommendations and smooth experience.
Loyalty program engagement increases as guests interact with the app.

- **Operational Efficiency:**

Fewer errors and delays in billing, room access, and service delivery.
Data-driven decisions help hotels optimize staffing and services.



Future Scaling

- **Multi-Hotel & Resort Networks:** Unified experience across chains and franchises.
- **Advanced AI Bot:** Multi-language, predictive recommendations, and 24/7 support.
- **IoT Smart Rooms:** Control lights, AC, curtains, and entertainment via app.
- **Predictive Analytics:** Optimize guest services, occupancy, and resource planning.
- **Optional Stretch:** AR-based room navigation and interactive facility guides.

Reference

Competitor References

1. Hoteza

<https://hoteza.com/>

Focused on in-room entertainment, guest engagement, ordering, and TV/mobile apps.

2. OpenKey

<https://www.openkey.co/>

Specializes in mobile keyless entry solutions for hotels.

3. HouseKey

<https://housekeyrealty.in/>

Focused on residential and short-stay smart lock solutions, not full hospitality.

Research Papers-

- [1] M. Ivanov and J. Webster, “The Role of Property Management Systems in Enhancing Hotel Operational Efficiency,” International Journal of Hospitality Management, vol. 87, pp. 102–115, 2025.
- [2] S. Gupta and R. Kohli, “Customer Relationship Management (CRM) in the Hospitality Sector: Enhancing Guest Experience and Loyalty,” Journal of Hospitality and Tourism Technology, vol. 12, no. 4, pp. 589–605, 2024.

Feature	Hoteza	OpenKey	HouseKey	OneTapStay
One ID Across All Services	✗	✗	Limited	✓
360° Guest Profile & Data Insights	Limited	✗	✗	✓
Integration with PMS + POS + Wi-Fi + Loyalty	Limited	Limited	✗	✓
Cross-Service Personalization	Limited	✗	✗	✓
Billing Consolidation	✗	✗	✗	✓
Cloud + API Middleware	✗	✗	✗	✓
Guest Experience Focus	Limited	Limited	Limited	✓

Thank You