
SAFPRO TECHNOLOGY SOLUTIONS

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Wedding Hall Booking Project

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Wedding Hall Booking Business Logic, designed for India-specific wedding workflows and scalable for single mahal or multi-branch chains.

1. Core Actors

- **Customer (Bride/Groom/Family)**
- **Mahal Owner / Manager**
- **Admin**
- **System**

2. Mahal Setup (Owner/Admin)

Mahal Profile

- Mahal name
- Location
- Capacity (min & max guests)
- Parking capacity
- AC / Non-AC
- Dining hall capacity
- Rooms (count & pricing)
- Power backup
- Decoration allowed (Yes / No)
- Vendor restrictions (Catering, Decoration)

Pricing Configuration

- Base hall rent (per session/day)

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- Security deposit
 - Extra hours charges
 - Peak season pricing
 - Weekend pricing
 - Electricity / generator charges

Time Slot Configuration (Critical)

Common Indian wedding slots:

- **Morning Session** (e.g., 6 AM – 2 PM)
- **Evening Session** (e.g., 4 PM – 11 PM)
- **Full Day**

Each slot has:

- Start & end time
- Base price
- Cleaning buffer time

3. Booking Discovery (Customer)

Customer searches by:

- Location
- Date
- Capacity
- Budget
- AC / Non-AC
- Parking
- Dining hall availability

System shows:

- Available dates
- Session availability
- Pricing
- Photos & rules

4. Availability & Conflict Logic

Slot Availability Rules

- A mahal **cannot be double-booked** for overlapping slots
- Buffer time between sessions enforced
- Full-day booking blocks all sessions
- Partial booking blocks overlapping hours

Example

- Morning session booked → Evening may be allowed (if buffer allows)
- Full day booked → Entire day blocked

5. Booking Flow

Step 1: Date & Session Selection

Customer selects:

- Event date
- Session (Morning / Evening / Full day)
- Event type (Nikah, Reception, Walima, Engagement)

Step 2: Cost Calculation

System calculates:

- Base hall rent
- Extra hours (if requested)
- Rooms (optional)
- Decoration / catering charges (if in-house)
- GST (if applicable)
- Total payable

Step 3: Advance Payment Logic

- Booking confirmed only after **advance payment**
- Payment modes:
 - Online
 - Cash (admin approval)
- Remaining balance payable before event date

6. Booking Status Lifecycle

Status	Description
ENQUIRY	Date blocked temporarily
HOLD	Soft lock (24–48 hrs)
ADVANCE_PAID	Booking confirmed
PARTIALLY_PAID	Balance pending
FULLY_PAID	All dues cleared
CANCELLED_CUSTOMER	Cancelled by customer
CANCELLED_OWNER	Cancelled by mahal
COMPLETED	Event finished

7. Cancellation & Refund Logic

Customer Cancellation

- Before X days → Partial refund
- After X days → No refund
- Advance may be non-refundable

Owner Cancellation

- Full refund
- Optional compensation logic

8. Extra Services Management

Add-Ons

- Catering (veg / non-veg)
- Decoration
- Sound system
- Lighting
- Generator

-
- Rooms

Each add-on:

- Fixed price or per-unit pricing
- Can be booked initially or later

9. Contract & Agreement Logic

- Auto-generated booking agreement
- Includes:
 - Usage rules
 - Damage policy
 - Overtime charges
- Digital acceptance by customer

10. Event Day Operations

Staff Checklist

- Hall handover time
- Decoration setup time
- Cleaning schedule
- Power backup readiness

Damage Assessment

- Post-event inspection
- Damage cost deducted from deposit

11. Notifications

Triggered for:

- Booking confirmation
- Payment reminders
- Event day reminder
- Balance payment due
- Cancellation/refund

Channels:

- SMS

-
- WhatsApp
 - Email

12. Owner Dashboard

- Calendar view (very important)
- Upcoming events
- Payment tracking
- Service add-ons
- Customer contact details

13. Admin Controls

- Mahal onboarding & approval
- Pricing overrides
- Conflict resolution
- Refund management
- Reports (monthly revenue, occupancy)

14. Edge Case Handling

- Power failure extension
- Event time overrun
- Multiple events same day (different sessions)
- Government restriction days
- Peak season blackout dates

15. India-Specific Considerations

- Islamic calendar (Hijri dates)
- Auspicious time (Muhurat – optional)
- Loudspeaker cutoff rules
- Local tax compliance

16. Future Enhancements

- Live availability calendar
- Dynamic pricing (AI)
- Vendor marketplace
- QR-based event entry
- Multi-mahal chain management

Datamodel Design

1. Users

users

id (PK)

role ENUM('CUSTOMER','OWNER','ADMIN')

full_name

phone

email

password_hash

is_active

created_at

updated_at

2. Mahal (Wedding Hall)

Mahals

id (PK)

owner_id (FK → users.id)

name

description

address

```
city
state
capacity
dining_capacity
parking_capacity
ac_type ENUM('AC','NON_AC','BOTH')
rooms_count
power_backup BOOLEAN
is_active
created_at
updated_at
```

3. Mahal Images

```
mahal_images
-----
id (PK)
mahal_id (FK → mahals.id)
image_url
is_primary
created_at
```

4. Mahal Sessions (Time Slots)

```
mahal_sessions
```

id (PK)

mahal_id (FK → mahals.id)

session_name ENUM('MORNING','EVENING','FULL_DAY')

start_time

end_time

buffer_minutes

base_price

is_active

5. Mahal Pricing Rules

mahal_pricing_rules

id (PK)

mahal_id (FK)

rule_type ENUM('WEEKEND','PEAK_SEASON','CUSTOM_DATE')

start_date

end_date

price_modifier_type ENUM('FIXED','PERCENTAGE')

price_modifier_value

created_at

6. Mahal Unavailable Dates (Blackout)

mahal_blackout_dates

id (PK)

mahal_id (FK)

blocked_date

reason

created_at

7. Booking (Core Table)

bookings

id (PK)

booking_code (UNIQUE)

mahal_id (FK → mahals.id)

customer_id (FK → users.id)

event_date

session_id (FK → mahal_sessions.id)

event_type ENUM('NIKAH','RECEPTION','WALIMA','ENGAGEMENT','OTHER')

guests_expected

status ENUM(

'ENQUIRY',

'HOLD',

'ADVANCE_PAID',

```
'PARTIALLY_PAID',
'FULLY_PAID',
'CANCELLED_CUSTOMER',
'CANCELLED_OWNER',
'COMPLETED'
```

```
)
```

```
total_amount
```

```
advance_amount
```

```
balance_amount
```

```
created_at
```

```
updated_at
```

8. Booking Add-Ons / Services

```
booking_services
```

```
-----
```

```
id (PK)
```

```
booking_id (FK → bookings.id)
```

```
service_name
```

```
service_type ENUM('CATERING','DECORATION','SOUND','LIGHTING','GENERATOR','ROOM')
```

```
price
```

```
quantity
```

```
total_price
```

9. Payments

payments

id (PK)

booking_id (FK → bookings.id)

amount

payment_type ENUM('ADVANCE','BALANCE','EXTRA')

payment_method ENUM('ONLINE','CASH','UPI','BANK_TRANSFER')

transaction_reference

status ENUM('PENDING','SUCCESS','FAILED','REFUNDED')

paid_at

10. Refunds

refunds

id (PK)

payment_id (FK → payments.id)

refund_amount

refund_reason

status ENUM('INITIATED','COMPLETED','FAILED')

created_at

11. Security Deposit & Damage

security_deposits

id (PK)

booking_id (FK)

deposit_amount

deduction_amount

refund_amount

remarks

settled_at

12. Event Agreement / Contract

booking_agreements

id (PK)

booking_id (FK)

agreement_text

accepted_by_customer BOOLEAN

accepted_at

13. Staff Checklist / Operations

event_operations

id (PK)

booking_id (FK)

handover_time

cleaning_start_time

cleaning_end_time

power_backup_used BOOLEAN

remarks

14. Notifications Log

notifications

id (PK)

user_id (FK)

booking_id (FK)

channel ENUM('SMS','EMAIL','WHATSAPP')

message

sent_at

15. Activity / Audit Logs

activity_logs

id (PK)

user_id (FK)

action

entity

entity_id

created_at

16. Reviews & Ratings (Optional)

mahal_reviews

id (PK)

mahal_id (FK)

customer_id (FK)

rating (1–5)

review

created_at

Critical Indexes (Performance)

```
CREATE INDEX idx_bookings_mahal_date
```

```
ON bookings (mahal_id, event_date);
```

```
CREATE INDEX idx_bookings_status
```

```
ON bookings (status);
```

```
CREATE INDEX idx_payments_booking
```

```
ON payments (booking_id);
```

Conflict Prevention Logic (Key Rule)

- Unique Constraint (Optional)

-- Prevent double booking of same mahal + date + session

```
CREATE UNIQUE INDEX uniq_mahal_date_session
```

```
ON bookings (mahal_id, event_date, session_id)
```

```
WHERE status NOT IN ('CANCELLED_CUSTOMER','CANCELLED_OWNER');
```

Scalability Notes

- Supports:
 - Multiple sessions per day
 - Partial/full-day bookings
 - Add-ons & services
 - Advance + balance payments
- Calendar-friendly design for owner dashboard

AI Features

1. AI Date Availability Assistant (Most Valuable)

Problem: Customers repeatedly call for “Is this date available?”

AI Solution

- Chat/WhatsApp AI checks live calendar
- Suggests:
 - Alternate dates
 - Alternate sessions (Morning/Evening)
 - Nearby mahals if unavailable

AI Logic

- Date → Check bookings + blackout dates
- If unavailable → recommend next best dates

2. AI Dynamic Pricing (Peak Season Optimization)

Problem: Fixed pricing loses revenue during peak months.

AI Solution

- Adjusts price based on:
 - Demand
 - Season (Ramadan, wedding months)
 - Day of week
 - Booking lead time

Output

- Suggested price (owner approval required)

3. AI Demand Forecasting (Owner Planning)

- Predicts:
 - High-demand dates
 - Occupancy %
 - Expected revenue per month
- Helps owners plan staff & pricing

4. AI Lead Scoring (Sales Acceleration)

Problem: Many enquiries don't convert.

AI Solution

- Scores enquiries based on:
 - Event date proximity
 - Budget match
 - Follow-up behavior

Output

- HOT / WARM / COLD lead tags

5. AI Cancellation Risk Prediction

- Predicts likelihood of cancellation
- Factors:
 - Advance amount
 - Time gap
 - Customer history
- Enables controlled overbooking or stricter policy

6. AI WhatsApp Booking Assistant

Critical for India 

Capabilities

- Date availability check

-
- Price quote
 - Booking hold
 - Payment link sharing
 - Reminder follow-ups

7. AI Auto-Generated Booking Agreement

- Converts booking data into:
 - Legal agreement
 - Rules & penalties
- Multilingual (English / Hindi / Tamil / Malayalam / Urdu)

8. AI Damage Risk Detection (Post-Event)

- Predicts potential damage based on:
 - Guest count
 - Event type
 - Past patterns
- Suggests higher security deposit if needed

9. AI Review & Feedback Analysis

- Analyzes reviews
- Highlights:
 - Service issues
 - Staff behavior complaints
 - Cleanliness trends
- Owner action insights

10. AI Upsell Engine (Revenue Booster)

- Recommends:
 - Decoration packages
 - Extra rooms
 - Generator backup
- Based on event type & guest count

11. AI Multi-Language Voice Assistant (Optional)

- Voice booking in:
 - Hindi / English / Tamil / Malayalam

-
- Converts calls → booking entries

12. AI Compliance & Safety Layer

- AI reminders:
 - Noise cutoff time
 - Fire safety checks
 - Local authority restrictions

AI Feature Database Additions

AI Lead & Enquiry

ai_leads

id (PK)

booking_id (FK)

lead_score

lead_category ENUM('HOT','WARM','COLD')

confidence_score

created_at

AI Pricing Suggestions

ai_pricing_suggestions

id (PK)

mahal_id (FK)

event_date

session_id (FK)

suggested_price

reason

approved_by_owner BOOLEAN

created_at

AI Demand Forecast

ai_demand_forecast

id (PK)

mahal_id (FK)

forecast_month

expected_occupancy

expected_revenue

generated_at

AI Cancellation Risk

ai_cancellation_risk

id (PK)

booking_id (FK)

risk_score

risk_level ENUM('LOW','MEDIUM','HIGH')

created_at

AI Chat / WhatsApp Logs

ai_chat_sessions

id (PK)

user_phone

channel ENUM('WHATSAPP','WEB','VOICE')

intent

confidence_score

started_at

ended_at

AI Damage Risk

ai_damage_risk

id (PK)

booking_id (FK)

risk_score

suggested_deposit

created_at

AI Review Insights

ai_review_insights

id (PK)

mahal_id (FK)

issue_category

sentiment_score

created_at

Recommended AI Rollout (Startup-Friendly)

Phase 1 (MVP – Revenue Impact)

- ✓ Availability chatbot
- ✓ Lead scoring
- ✓ Upsell suggestions

Phase 2 (Growth)

- ✓ Dynamic pricing
- ✓ Demand forecasting
- ✓ Cancellation prediction

Phase 3 (Enterprise)

- ✓ Voice assistant
- ✓ Multi-mahal optimization
- ✓ Fraud & damage prediction

AI Architecture (Simple & Cost-Effective)

- **LLM** → Chatbot, agreement generation
- **ML Models** → Pricing, demand, risk
- **Rules Engine** → Compliance, penalties
- **Human Approval Loop** → Pricing & cancellations