



COMP3350 Assignment 1

# LEISUREAUSTRALASIA DATABASE DESIGN

Lena Dahlin c3391146  
Jessica McEwan c3393168

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## Section 1: Assumptions

For our database design for LeisureAustralasia's hotels, we have made the following assumptions.

### **Hotel**

All resorts and hotels are considered a hotel. Each hotel will have a unique hotel ID, name, address, country, phone number, and description. Hotels will have facilities.

### **Facility**

Each hotel can have many facilities. Facilities will have a unique facility ID, hotel ID, name, description, status, and facility type ID. Facilities are categorized to a facility type.

### **Facility Type**

Each facility has a facility type. Facility types will have a unique ID, name, description, and capacity. Some facility type examples include standard room, conference hall, and swimming pool.

### **Service Category**

Each hotel has many service categories. Service categories will include a unique service category ID, name, description, and type of service. Service categories can include accommodation, event venues, gym, laundry, entertainment, site-seeing tours, taxis, and more.

### **Service Item**

Each service item belongs to a service category. Each service item has a unique service ID, categoryID, name, description, restrictions, notes, comments, open time, close time, base cost, base currency, capacity, and an optional facility ID. Base currency will be the currency of the country that the hotel is located in. Service items can be offered as individual services or as part of a package.

We assume capacity is how many concurrent bookings can be made for a service item.

Because of this, we are assuming that the capacity referred to in the Make Reservation stored procedure uses the capacity from service item.

### **Package**

Packages are made by the hotel and advertised or created as needed for guests. Each package has a unique package ID, name, description, one or more service items, a start and end date for when the package is offered, advertised price,

advertised currency, inclusions, exclusions, status, grace period, and employee authorizing the package. Service items may be added to a package.

We are assuming that advertised service items must be allocated to a package to be used, even if it is only one service item.

## **Customer**

Each customer will have a unique customer ID, name, address, contact number, and email. Customers have reservations.

## **Reservation**

Customers can make a reservation for advertised services/packages via online, phone, or in person. A reservation has a unique reservation ID, customer, booked services/packages, guests, and payment information. A 25% deposit is charged at time of reservation to the customer's credit or debit card.

## **Booking**

Reservations have bookings for packages. A booking will have a unique reservation and package ID, quantity booked, facility ID, start date/time, and end date/time.

## **Discount**

A discount can be applied to a reservation. A discount will have a discount percentage, employee providing the discount, and an authorization status if the discount is greater than 25%.

## **Payment**

Each payment made for a reservation needs to be tracked. Payment will have a payment ID, amount, payment method, and date paid. A payment of 25% of the total price from Reservation is made when a Reservation is made.

## **Business Rules**

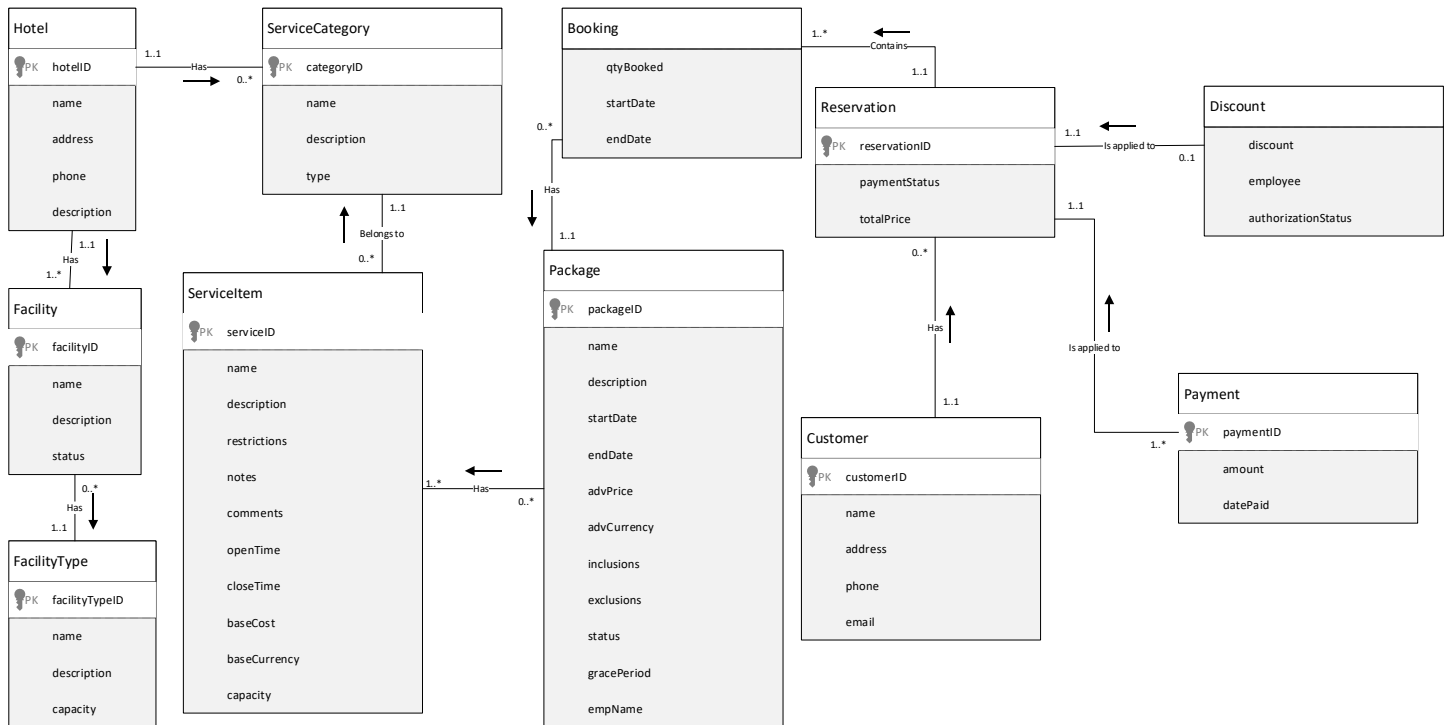
- **Packages**
  - The marketing department of the group or front-office manager of the hotel can create customized promotions or holiday packages.
- **Reservations and Bookings**
  - Customers can make a reservation for services/packages advertised by the hotel via online, phone, or in person.
  - Guests can use other services once checked in and charge them under booking.
  - The booking needs to keep track of all charges made under it.
  - Additional services that are not included in the package are billed at the advertised rate for the period.
- **Payment**
  - A 25% deposit is charged at time of reservation to the customers' credit or debit card.
  - The customer will pay the rest of the bill when they check out.
  - The manager and authorized personnel can provide a discount on the final bill.
  - When a discount is provided, the discount amount and employee authorizing the discount is recorded.
  - A discount of more than 25% needs the authorization from head office.
  - The final bill for a reservation needs to include all charges under each booking, deposit information, and all customer payments.
- **Cancellation**

- When a reservation or booking is cancelled after the grace period, 25% of the amount due is charged and all bookings for the reservation are removed.

- **Data to be maintained**

- *Customer and guest information:*
  - Name
  - Address
  - Contact number
  - Email
- *Reservation:*
  - Payment information
- *Service Items*

## Section 2: ERD



### Section 3: Normalized Database Schema in DBDL format

**Hotel** (hotelID, name, phone, description)

**Primary Key** hotelID

**HotelAddress** (hotelID, streetNo, streetName, city, postcode, country)

**Primary Key** hotelID

**Foreign Key** hotelID **references** Hotel(hotelID)

**ON UPDATE CASCADE, ON DELETE NO ACTION**

**FacilityType** (facilityTypeID, name, description, capacity)

**Primary Key** facilityTypeID

**Facility** (facilityID, hotelID, name, description, status, facilityTypeID)

**Primary Key** facilityID

**Foreign Key** facilityTypeID **references** FacilityType(facilityTypeID)

**ON UPDATE NO ACTION, ON DELETE NO ACTION**

**Foreign Key** hotelID **references** Hotel(hotelID)

**ON UPDATE NO ACTION, ON DELETE NO ACTION**

**ServiceCategory** (categoryID, name, description, type)

**Primary Key** categoryID

**ServiceItem** (serviceID, categoryID, name, description, restrictions, notes, comments, openTime, closeTime, baseCost, baseCurrency, capacity, facilityID)

**Primary Key** serviceID

**Foreign Key** categoryID **references** ServiceCategory(categoryID)

**ON UPDATE CASCADE, ON DELETE NO ACTION**

**Foreign Key** facilityID **references** Facility(facilityID)

**ON UPDATE CASCADE, ON DELETE NO ACTION**

**Package** (packageID, name, description, startDate, endDate, advPrice, advCurrency, inclusions, exclusions, status, gracePeriod, empName)

**Primary Key** packageID

**PackageServiceItem** (packageID, serviced, quantity)

**Primary Key** packageID, serviced

**Foreign Key** packageID **references** Package(packageID)

**ON UPDATE NO ACTION, ON DELETE NO ACTION**

**Foreign Key** serviced **references** ServiceItem(serviced)

**ON UPDATE NO ACTION, ON DELETE NO ACTION**

**Customer** (customerID, name, phone, email)

**Primary Key** customerID

**CustomerAddress** (customerID, streetNo, streetName, city, postcode, country)

**Primary Key** customerID

**Foreign Key** customerID **references** Customer(customerID)

**ON UPDATE CASCADE, ON DELETE NO ACTION**

**Reservation** (reservationID, customerID, totalPrice, paymentStatus)

**Primary Key** reservationID

**Foreign Key** customerID **references** Customer(customerID)

**ON UPDATE CASCADE, ON DELETE NO ACTION**

**ReservationGuest** (reservationID, guestID, name, phone, email, streetNo, streetName, city, postcode, country)

**Primary Key** reservationID, guestID

**Foreign Key** reservationID **references** Reservation(reservationID)

**ON UPDATE CASCADE, ON DELETE CASCADE**

**Booking** (reservationID, packageID, qtyBooked, startDate, endDate)



**Primary Key** reservationID, packageID

**Foreign Key** reservationID **references** Reservation(reservationID)

**ON UPDATE CASCADE, ON DELETE NO ACTION**

**Foreign Key** packageID **references** Package(packageID)

**ON UPDATE NO ACTION, ON DELETE NO ACTION**

**Discount** (reservationID, discount, employee, authorizationStatus)

**Primary Key** reservationID

**Foreign Key** reservationID **references** Reservation(reservationID)

**ON UPDATE CASCADE, ON DELETE CASCADE**

**Payment** (paymentID, reservationID, amount, datePaid)

**Primary Key** paymentID

**Foreign Key** reservationID **references** Reservation(reservationID)

**ON UPDATE NO ACTION, ON DELETE NO ACTION**