LOCATION(LocationID, City, StateProvince, Country)

LocationID is the primary key

ROUTE(RouteID, ScheduledDeparture, ScheduledArrival, ActualDeparture, ActualArrival, Status, DelayReason, *SourceLocationID*, *DestinationLocationID*, BaseFare, *TransportationID*)

RouteID is the primary key

SourceLocationID foreign key refers to LocationID in LOCATION, NOT NULL

DestinationLocationID foreign key refers to LocationID in LOCATION, NOT NULL

TransportationID foreign key refers to TransportationID in PUBLIC_TRANSPORT, NOT NULL

Status has a CHECK contraint ('OnTime', 'Delayed', 'Cancelled')

There is a CHECK constraint(ScheduledDeparture < ScheduledArrival)

There is a CHECK constraint(ActualDeparture < ActualArrival)

TRANSPORTATION(TransportationID, Type, Capacity)

TransportationID is the primary key

Type has a CHECK constraint ('Plane', 'Ship', 'Train', 'Bus', 'Car')

Capacity has a CHECK constraint a positive integer

PUBLIC_TRANSPORT(*TransportationID*, Facility)

TransportationID is the primary key and foreign key referencing TRANSPORTATION

PLANE(*TransportationID*, PlaneModel, AirlineCode, FlightNumber)

TransportationID is the primary key and foreign key referencing PUBLIC_TRANSPORT

(AirlineCode, FlightNumber) has a UNIQUE constraint

SHIP(*TransportationID*, ShipType, DeckCount, Tonnage)

TransportationID is the primary key and foreign key referencing PUBLIC_TRANSPORT

ShipType has a CHECK constraint ('Cruise', 'Ferry', 'Yacht', 'PassengerShip')

TRAIN(*TransportationID*, TrainType, NumberOfCarriages)

TransportationID is the primary key and foreign key referencing PUBLIC_TRANSPORT

TrainType has a CHECK constraint ('High-speed', 'Ordinary')

BUS(*TransportationID*, BusType, LicensePlate)

TransportationID is the primary key and foreign key referencing PUBLIC_TRANSPORT

BusType has a CHECK constraint ('Ordinary', 'DoubleDecker', 'TouristBus')

LicensePlate has a UNIQUE constraint

CAR(*TransportationID*, Brand, Model, FuelType, TransmissionType, SeatNumber, CreateYear, LicensePlate)

TransportationID is the primary key and foreign key referencing TRANSPORTATION

FuelType has a CHECK constraint ('Gasoline', 'Diesel', 'Electric', 'Hybrid')

TransmissionType has a CHECK constraint ('Automatic', 'Manual')

SeatNumber must be a positive integer

Year must be a positive integer

LicensePlate has a UNIQUE constraint

CAR_RENTAL(RentalID, *TransportationID*, ScheduledPickup, ScheduledDropoff, ActualPickup, ActualDropoff, TotalCost, RentalStatus)

RentalID is the primary key

TransportationID foreign key refers to TransportationID in CAR, NOT NULL

DailyRate and TotalCost have CHECK constraints, non-negative decimal number

RentalStatus has a CHECK constraint ('Reserved', 'PickedUp', 'Returned', 'Cancelled')

ACCIDENT(AccidentID, *TransportationID*, OccurrenceTime, SeverityLevel, Description, Status)

AccidentID is the primary key

TransportationID foreign key refers to TransportationID in TRANSPORTATION, NOT NULL

SeverityLevel has a CHECK constraint (1, 2, 3, 4, 5)

Status has a CHECK constraint ('Reported', 'Investigating', 'Resolved', 'Archived')

TRAVEL_UNIT(*TransportationID*, UnitNumber, Type, Class, IsAvailable)

(TransportationID, UnitNumber) is the composite primary key

TransportationID foreign key refers to TransportationID in TRANSPORTATION, NOT NULL

Type has a CHECK constraint ('Seat', 'Cabin')

Class has a CHECK constraint ('Economy', 'Business', 'First')

TRIP(TripID, TotalCost, BookingTime, Status, StartDate, EndDate, InsuranceID)

TripID is the primary key

InsuranceIDforeign key refers to InsuranceID in INSURANCE, NULL ALLOWED

TotalCost has a CHECK constraint, non-negative decimal number

Status has a CHECK constraint ('Planned', 'Booked', 'Ongoing', 'Completed', 'Cancelled')

There is a CHECK constraint(StartDate < EndDate)

TRIP_ROUTE(*TripID*, *RouteID*)

(TripID, RouteID) is the composite primary key

TripID foreign key refers to TripID in TRIP, NOT NULL

RouteID foreign key refers to RouteID in ROUTE, NOT NULL

ROUTE_UNIT(*RouteID*, *TransportationID*, *UnitNumber*)

(RouteID, TransportationID, UnitNumber) is the composite primary key

RouteID foreign key refers to TripID in TRIP, NOT NULL

(TransportationID, UnitNumber) foreign key refers to (TransportationID, UnitNumber) in TRAVELUNIT, NOT NULL

INSURANCE(InsuranceID, Type, CoverageAmount, Premium, StartDate, EndDate)

InsuranceID is the primary key

CoverageAmount and Premium have CHECK constraints: non-negative decimal numbers

Type has a CHECK constraint ('Health', 'Travel', 'Accident', 'Luggage', 'Vehicle', 'Other')

There is a CHECK constraint(StartDate < EndDate)

RESTAURANT(RestaurantID, Name, AvgPricePerPerson, OpeningHours, Rating, AcceptsReservation, *LocationID*)

RestaurantID is the primary key

LocationID foreign key refers to LocationID in LOCATION, NOT NULL

AvgPricePerPerson has a CHECK constraint, non-negative decimal number

Rating has a CHECK constraint between 0.0 and 5.0

ACTIVITY(ActivityID, Name, Type, Duration, Price, ContactPhone, Rating, OpeningHours, *LocationID*)

ActivityID is the primary key

LocationID foreign key refers to LocationID in LOCATION, NOT NULL

Duration has a CHECK constraint for non-negative decimal

Price has a CHECK constraint for non-negative decimal

Rating has a CHECK constraint between 0.0 and 5.0

ACCOMMODATION(AccommodationID, Type, Facilities, ContactPhone, Rating, NumberOfRooms, *LocationID*)

AccommodationID is the primary key

LocationID foreign key refers to LocationID in LOCATION, NOT NULL

Type has a CHECK constraint ('Room_Based', 'Whole_Unit')

Rating has a CHECK constraint between 0.0 and 5.0

NumberOfRooms has a CHECK constraint for non-negative integer

HOTEL(*AccommodationID*, HasLaundryService, NumberOfRooms, ReceptionAvailable)

AccommodationID foreign key refers to AccommodationID in ACCOMMODATION, NOT NULL

BNB(*AccommodationID*, MaxOccupancy, Bathrooms, Bedrooms)

AccommodationID foreign key refers to AccommodationID in ACCOMMODATION, NOT NULL

ROOM(RoomNumber, *AccommodationID*, RoomType, BedType, BasePrice, MaxOccupancy, IsAvailable, HasPrivateBathroom, Facility)

(RoomNumber, AccommodationID) is the composite primary key

AccommodationID foreign key refers to AccommodationID in HOTEL, NOT NULL

RoomType has a CHECK constraint ('Single', 'Double', 'Suite')

BedType has a CHECK constraint ('Single', 'Double')
BasePrice has a CHECK constraint, non-negative decimal
MaxOccupancy must be a positive integer

ACC_BOOKING(BookingID, BookingTime, CheckInDate, CheckOutDate, Status, TotalCost, *AccommodationID*)
BookingID is the primary key
AccommodationID foreign key refers to AccommodationID in Accommodation, NOT NULL
Status has CHECK constraint ('Pending', 'Confirmed', 'Cancelled', 'Completed')

BOOKING_ROOM(*BookingID*, *AccommodationID*, *RoomNumber*)
(BookingID, AccommodationID, RoomNumber) is the composite primary key
BookingID foreign key refers to the BookingID in ACC_BOOKING, NOT NULL
(AccommodationID, RoomNumber) foreign key refers to the (AccommodationID, RoomNumber) in ROOM, NOT NULL

USER_LEVEL(RankName, DiscountRate, MinPoints, MaxPoints)
LevelName is the primary key
DiscountRate has a CHECK constraint: a decimal between 0 and 1
MinimumPoints has a CHECK constraint: non-negative integer

USER_ACCOUNT(UserID, FirstName, LastName, Gender, BirthDate, PhoneNumber, Email, Street, City, StateProvince, Country, ZipCode, *LevelName*, RegistrationTime, LastLogin)
UserID is the primary key
Gender has a CHECK constraint ('Male', 'Female', 'Other')
PhoneNumber has UNIQUE constraint
Email has UNIQUE constraint
LevelName foreign key refers to LevelName in USERRANK, NULL ALLOWED

CUSTOMER_SERVICE_AGENT(AgentID, FirstName, LastName, Email, PhoneNumber, AvailabilityStatus)
AgentID is the primary key
AvailabilityStatus has a CHECK constraint ('Online', 'Busy', 'Offline')
Email has a UNIQUE constraint
PhoneNumber has a UNIQUE constraint

MESSAGE(MessageID, *UserID*, *AgentID*, Status, Type, CreatedAt, ResolvedAt, MessageText, *TransactionID*)
MessageID is the primary key
UserID foreign key refers to UserID in USER, NOT NULL
AgentID foreign key refers to AgentID in CUSTOMER_SERVICE_AGENT, NULL ALLOWED
Status has a CHECK constraint ('Open', 'InProgress', 'Closed', 'Escalated')
Type has a CHECK constraint ('Inquiry', 'Complaint', 'Feedback', 'TechnicalSupport')

TransactionID foreign key refers to TransactionID in TRANSACTION, NULL ALLOWED

COUPON(CouponID, CouponName, DiscountType, DiscountValue, StartDate, EndDate, MinSpend, ApplicableServices)

CouponID is the primary key

DiscountType has a CHECK constraint ('Percentage', 'FixedAmount')

DiscountValue has CHECK constraint, a non-negative decimal number

MinSpend has CHECK constraint, a non-negative decimal number

TAX(TaxID, Name, Rate)

TaxID is the primary key

Rate has a CHECK constraint: non-negative decimal number between 0 and 1

TRANSACTION(TransactionID, TransactionType, TotalAmount, Currency, PaymentMethod, Status, CreatedAt, UpdatedAt, *CouponID,* TargetID, TargetType)

TransactionID is the primary key

CouponID foreign key refers to CouponID in COUPON, NULL ALLOWED

TotalAmount has a CHECK constraint, a non-negative decimal number

PaymentMethod has a CHECK constraint ('CreditCard', 'PayPal', 'ApplePay', 'Cash')

Status has a CHECK constraint ('Pending', 'Completed', 'Failed', 'Cancelled')

Currency has a CHECK constraint ('USD', 'CNY', 'KRW','JPY', 'INR', 'EUR')

Currency should follow ISO 4217 codes but for simplicity, I only chose the common ones.

TRANSACTION_TAX(*TransactionID*, *TaxID*)

(TransactionID, TaxID) is the composite primary key

TransactionID foreign key refers to TransactionID in TRANSACTION, NOT NULL

TaxID foreign key refers to TaxID in TAX, NOT NULL

REVIEW(ReviewID, *UserID*, *TransactionID*, Rating, Title, Content, IsAnonymous, CreatedAt, LastModified)

ReviewID is the primary key

UserID foreign key refers to UserID in USER, NOT NULL

TransactionID foreign key refers to TransactionID in TRANSACTION, NULL ALLOWED

Rating has a CHECK constraint, integer between 1 and 5