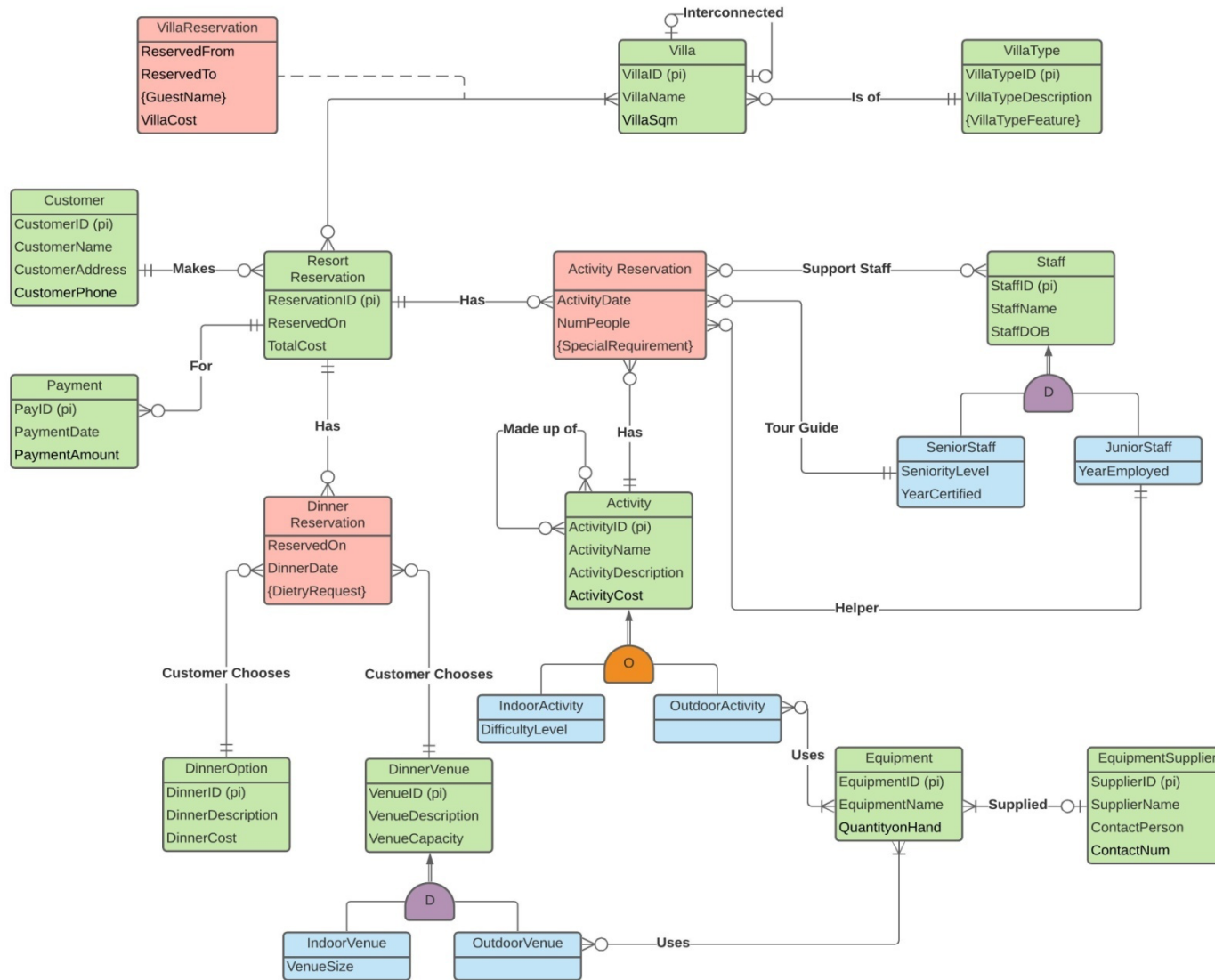


COMP13502020- ASSIGNMENT ONE

Task 1:EER Diagram



Assumptions, if any:

- Over time, one villa could belong to many reservations.
- Some Villa Types may not have had a Villa made for it yet.
- Additional staff could be either Senior or Junior.
- If there is an Equipment Supplier, they must have at least one piece of equipment.
- There may be a recorded piece of equipment that does not have a supplier yet.

Task2: Logical Transformation

Step 1 – Strong Entities

Resort Reservation

- ReservationID (PK)
- ReservedOn
- TotalCost

Dinner Option

- DinnerID (PK)
- DinnerDescription
- DinnerCost

Dinner Venue

- VenueID (PK)
- VenueDescription
- VenueCapacity

Equipment

- EquipmentID (PK)
- EquipmentName
- QuantityonHand

Equipment Supplier

- SupplierID (PK)
- SupplierName
- ContactPerson
- ContactNum

Step 2: Weak Entities

There are no Weak Entities.

Step 3: One to One Relationships

There are no One to One relationships.

Step 4: One to Many Relationships**Equipment**

- EquipmentID (PK)
- SupplierID (FK)
- EquipmentName
- QuantityonHand

Step 5: Many to Many Relationships

There are no Many to Many relationships.

Reasoning: Since the Associative Entity 'Dinner Reservation' has a multi-valued attribute but no PK, we are unable to transform it just yet. In this case, Step 6 and Step 7 are interchanged.

Step 7: Ternary Relationships

Dinner Reservation

- ReservationID (PK, FK)
- DinnerID (PK, FK)
- VenueID (PK,FK)
- ReservedOn
- DinnerDate (PK)

DinnerDate was made into a PK to account for the fact that a customer with a certain ReservationID may want to pick the same Dinner Option and Venue Option but on another date.

Step 6: Multi-Valued Attributes

Dietary Request

- Reservation (PK, FK)
- DinnerID (PK, FK)
- VenueID (PK, FK)
- DinnerDate (PK, FK)
- DietaryRequirement (PK)

Step 8A: Children Inherit Parent's PK

Indoor Venue

- IndoorVenueID (PK, FK)
- VenueSize

Outdoor Venue

- OutdoorVenueID (PK, FK)

Repeat steps 2-7 for the inheritance

Weak Entities

There are no Weak Entities.

One to One Relationships

There are no One to One relationships.

One to Many Relationships

There are no One to Many relationships.

Many to Many Relationships

Equipment Use

- OutdoorVenueID (PK, FK)
- EquipmentID (PK, FK)

Multi-Valued Attributes

There are no multi-valued attributes.

Tenary Relationships

There are no Ternary relationships.

Final Tables

Equipment Use

- OutdoorVenueID (PK, FK)
- EquipmentID (PK, FK)

Indoor Venue

- IndoorVenueID (PK, FK)
- VenueSize

Outdoor Venue

- OutdoorVenueID (PK, FK)

Dietary Request

- ReservationID (PK, FK)
- DinnerID (PK, FK)
- VenueID (PK, FK)
- DietaryRequirement (PK)

Dinner Reservation

- ReservationID (PK, FK)
- DinnerID (PK, FK)
- VenueID (PK, FK)
- ReservedOn
- DinnerDate(PK)

Equipment

- EquipmentID (PK)
- SupplierID (FK)
- EquipmentName
- QuantityonHand

Resort Reservation

- ReservationID (PK)
- ReservedOn
- TotalCost

Dinner Option

- DinnerID (PK)
- DinnerDescription
- DinnerCost

Dinner Venue

- VenueID (PK)
- VenueDescription
- VenueCapacity

Equipment Supplier

- SupplierID (PK)
- SupplierName
- ContactPerson
- ContactNum

Task 2 Part 2

Step 8B: Applies for Total Only; Disjointed or Overlap
Parent disintegrated, children inherit all attributes

Indoor Venue

- IndoorVenueID(PK)
- VenueDescription
- VenueCapacity
- VenueSize

Outdoor Venue

- OutdoorVenueID(PK)
- VenueDescription
- VenueCapacity

Step 8C: Applies for Total or Partial; Only Disjointed

Children Disintegrated, parents take all attributes, added attribute to distinguish between types

Dinner Venue

- VenueID(PK)
- VenueDescription
- VenueCapacity
- VenueSize
- VenueType

Step 8D: Applies for Total or Partial; Only Overlap

This step is inapplicable as 'IndoorVenue' and 'OutdoorVenue' are disjointed.

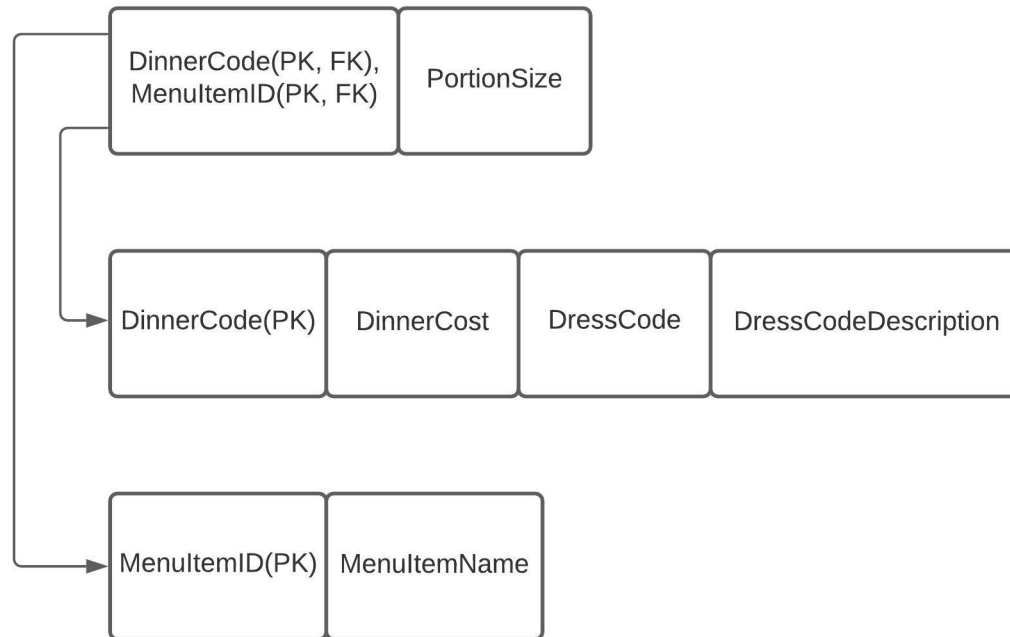
Task3: Normalisation

DinnerCode	MenuItemID	MenuItemName	DinnerCost	PortionSize	DressCode	DressCodeDescription
DIN1	ENTR1	Spring Roll	125	1	D1	Formal Attire
DIN1	MAINS1	Pumpkin Quinoa Salad	125	2	D1	Formal Attire
DIN1	DESS1	Banoffee Pie	125	2	D1	Formal Attire
DIN2	ENTR1	Spring Roll	75	1	D2	Smart Casual
DIN2	MAINS1	Pumpkin Quinoa Salad	75	1	D2	Smart Casual
DIN2	DESS1	Banoffee Pie	75	1	D2	Smart Casual

This table is in the 1NF as there are no multi-valued attributes.

2NF – Partial Dependency Removed

In 1NF: DinnerCost, DressCode and DressCodeDescription were partially dependant on DinnerCode. MenuItemName was partially dependant on MenuItemID. Two new tables with DinnerCode and MenuItemID as their respective PK's, were created to remove partial dependency.



3NF – Transitive Dependency Removed

In 2NF: There was a transitive dependency between DressCode and DressCodeDescription. A new table was created with DressCode as the PK to remove this transitive dependency

