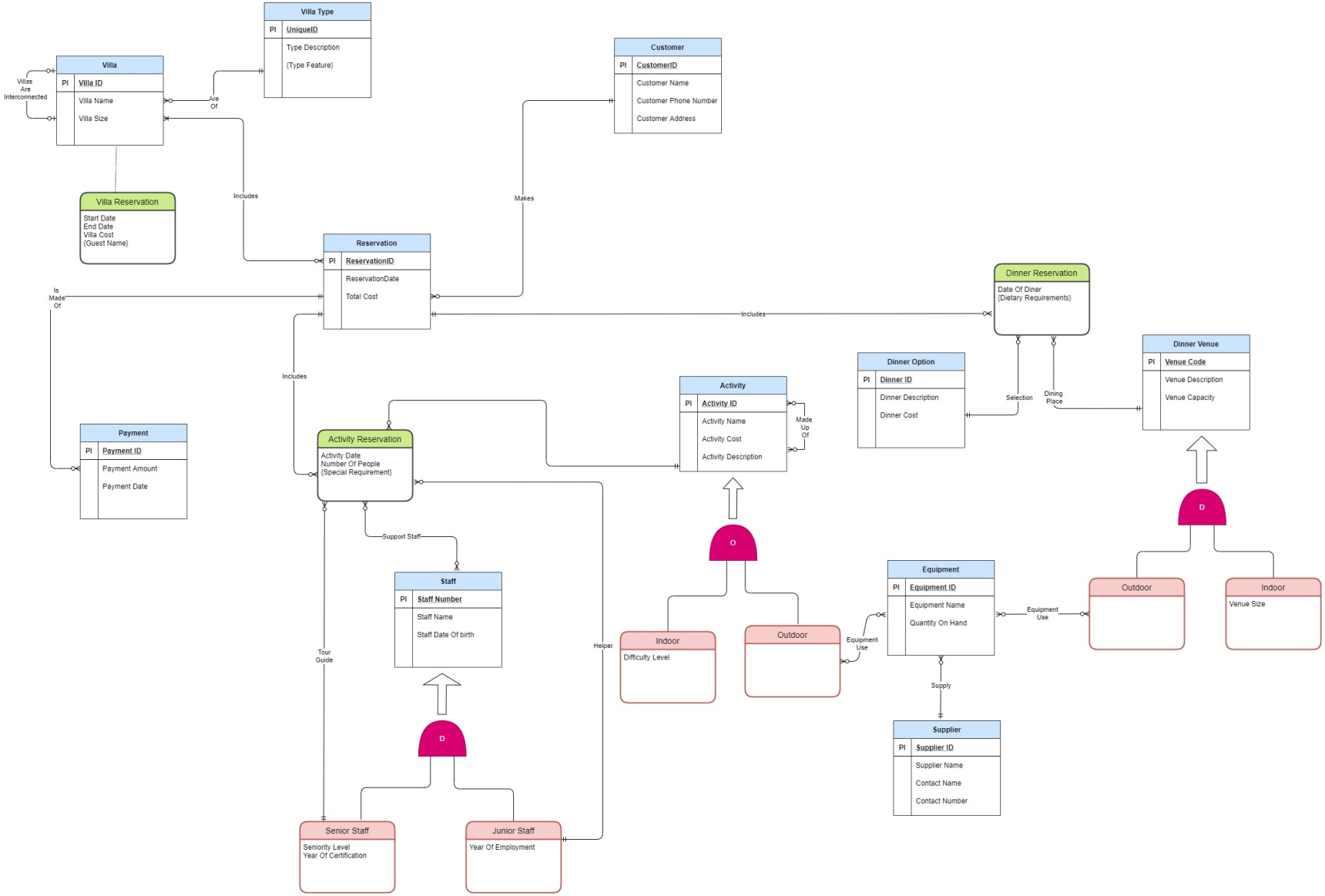
COMP1350 2020 – ASSIGNMENT ONE

Task 1: EER Diagram

Please Scroll down


Villa Type
PI UniqueID
Type Description
{Type Feature}
Villa
PI Villa ID
Villa Name
Villa Size
Villas Are Interconnected
Are Of
Customer
PI CustomerID
Customer Name
Customer Phone Number
Customer Address
Villa Reservation
Start Date
End Date
Villa Cost
{Guest Name}
Includes
Makes
Reservation
PI ReservationID
ReservationDate
Total Cost
Is Made Of
Includes
Dinner Reservation
Date Of Diner
{Dietary Requirements}
Includes
Dinner Venue
PI Venue Code
Venue Description
Venue Capacity
Dinner Option
PI Dinner ID
Dinner Description
Dinner Cost
Selection
Dining Place
Activity
PI Activity ID
Activity Name
Activity Cost
Activity Description
Made Up Of
Payment
PI Payment ID
Payment Amount
Payment Date
Activity Reservation
Activity Date
Number Of People
{Special Requirement}
Includes
Support Staff
O
D
Staff
PI Staff Number
Staff Name
Staff Date Of birth
Tour Guide
Helper
Indoor
Difficulty Level
Outdoor
Equipment Use
Equipment
PI Equipment ID
Equipment Name
Quantity On Hand
Equipment Use
Outdoor
Indoor
Venue Size
Supply
Supplier
PI Supplier ID
Supplier Name
Contact Name
Contact Number
D
Senior Staff
Seniority Level
Year Of Certification
Junior Staff
Year Of Employment

Assumptions, if any:

- At Least one Villa should be reserved by a customer.
- There could be some Reservations that do not require any pre-payments. In that case some reservations may not have any payments made.
- Payment can be made for only one reservation.
- Some Activities can be indoor or outdoor at the same time.
- A supplier may supply multiple types of equipment.
- There is a chance that Indoor/Outdoor activity may not use any equipment.
- Since Support staff is not specified, it could either be Junior staff or Senior staff.

Task 2: Logical Transformation

STEP 1 : STRONG ENTITIES

Customer (Customer ID (PK), Customer Name, Customer Phone Number, Customer Address)
Dinner Option (Dinner ID (PK), Dinner Description, Dinner Cost)
Dinner Venue (Venue Code (PK), Venue Description, Venue Capacity)
Reservation (Reservation ID (PK), Reservation Date)
Equipment (Equipment ID (PK), Equipment Name, Quantity On hand)
Supplier (Supplier ID(PK), Supplier Name, Contact Name, Contact Number)

STEP 2 : WEAK ENTITIES

N/A

STEP 3 : ONE - ONE RELATIONSHIP

N/A

STEP 4 : ONE - MANY RELATIONSHIP

Reservation (Reservation ID(PK), Reservation Date, Customer ID (FK))
Equipment (Equipment ID (PK), Equipment Name, Quantity On hand, Supplier ID(FK))

STEP 5 : MANY - MANY RELATIONSHIP

N/A

STEP 6 : MULTI-VALUED ATTRIBUTE

Dietary Requirements (Venue Code (PK, FK), Dinner ID (PK, FK), Reservation ID (PK,FK), Dietary Name(PK))

STEP 7 : TERNARY RELATIONSHIP/ASSOCIATIVE ENTITY

Dinner Reservation (Reservation ID (PK, FK), Dinner ID (PK, FK), Venue Code (PK, FK), Date of Dinner)

STEP 8 a: Total/Partial; Overlap/Disjoint

Outdoor (Venue Code (PK, FK))
Indoor (Venue Code (PK, FK), Venue Size)

Repeating Steps 2-7

Step 2: Weak Entity

N/A

Step 3: One - One Relationship

N/A

Step 4: One - Many Relationship

N/A

Step 5: Many - Many Relationship

Equipment Use (Equipment ID (PK, FK), Venue Code (PK, FK))

Step 6: Multi – valued Relationship

N/A

Step 7: Ternary Relationship

N/A

FINAL TABLES

Equipment Use (Equipment ID (PK, FK), Venue Code (PK, FK))
Outdoor (Venue Code (PK, FK))
Indoor (Venue Code (PK, FK), Venue Size)
Dinner Reservation (Reservation ID (PK, FK), Dinner ID (PK, FK), Venue Code (PK, FK), Date of Dinner)
Dietary Requirements (Venue Code (PK, FK), Dinner ID (PK, FK), Reservation ID (PK, FK), Dietary Name (PK))
Equipment (Equipment ID (PK), Equipment Name, Quantity On hand, Supplier ID(FK))

Reservation (Reservation ID(PK), Reservation Date, Customer ID (FK))
Supplier (Supplier ID(PK), Supplier Name, Contact Name, Contact Number)
Dinner Venue (Venue Code (PK), Venue Description, Venue Capacity)
Dinner Option (Dinner ID (PK), Dinner Description, Dinner Cost)
Customer (Customer ID (PK), Customer Name, Customer Phone Number, Customer Address)

STEP 8 b: Total (Supertype is Disintegrated)

Outdoor (Venue Code (PK), Venue Description, Venue Capacity)
Indoor (Venue Code (PK), Venue Description, Venue Capacity, Venue Size)

STEP 8 c: Disjoint (Subtype is Disintegrated)

Dinner Venue (Venue Code (PK), Venue Description, Venue Capacity, Venue Size, Venue Type)

STEP 8 d: Overlap

N/A

Task 3: Normalisation

DinnerCode	MenuItemID	MenuItemName	DinnerCost	PortionSize	DressCode	DressCode Description
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

(DinnerCode(PK,FK) , MenuItemID(PK,FK)) -> ~~MenuItemName, DinnerCost~~, PortionSize, ~~DressCode, DressCodeDescription~~

(DinnerCode(PK)) -> DinnerCost, DressCode, DressCodeDescription

DinnerCode(PK)	DinnerCost	**DressCode(FK)**	~~DressCodeDescripton~~

(MenuItemID(PK)) -> MenuItemName

MenuItemID(PK)	MenuItemName

DinnerCode (PK,FK)	**MenuItemID (PK,FK)**	PortionSize

DressCode (PK) -> DressCodeDescription

DressCode(PK)	DressCodeDescription

THIS IS HOW THE FINAL TABLE SHOULD LOOK

RESERVATION

DinnerCode (PK,FK)	**MenuItemID (PK,FK)**	PortionSize

DINNER

DinnerCode(PK)	DinnerCost	**DressCode(FK)**

MENU

MenuItemID(PK)	MenuItemName

ATTIRE

DressCode(PK)	DressCodeDescription