ISTE-230 Introduction to Database & Data Modeling

Homework # 6 – Transposing

DUE:
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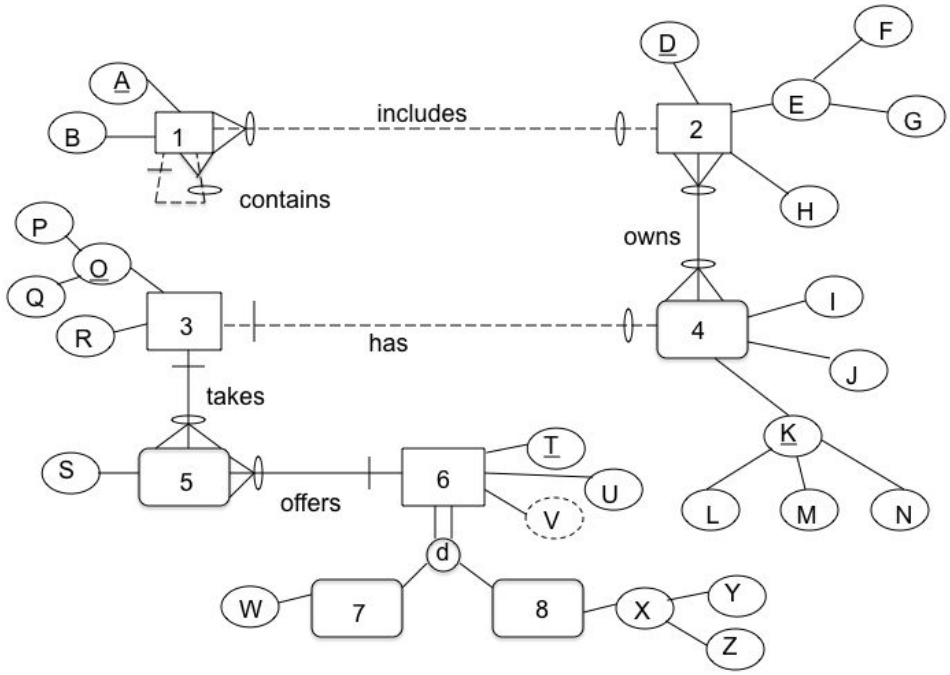
Submit this document edited to include your answers, for the two parts, to the HW#6 Dropbox by the stated deadline.

(It may be helpful to right-click on the icon and select Hide Spelling Errors and Hide Grammatical Errors.)

Part #1 – 50 points

1. (45 points) Transpose the E-R diagram above into relations, implementing all relationships. Denote primary keys and foreign keys appropriately. Use proper relation notation. You need to provide reference statements.



YOUR TRANSPOSED RELATIONS:

1(A, B, *D, contains_A*)
1(D) mei 2(D)
1(contains_A) mei 1(A)
2(D, F, G, H)

2_4(*D, L, M, N*)
    2_4(D) mei 2(D)
    2_4(L, M, N) mei 4(L, M, N)

3(P, Q, R)

4(L, M, N, I, J, *3_has_P_Q*)
    4(3_has_P_Q) mei 3(P, Q)

5(*T, O*, S)
    5(T) mei 6(T)
    5(O) mei 3(O)

6(T, U)

7(*T*, W)
    7(T) mei 6(T)

8(*T*, X, Y, Z)
    8(T) mei 6(T)

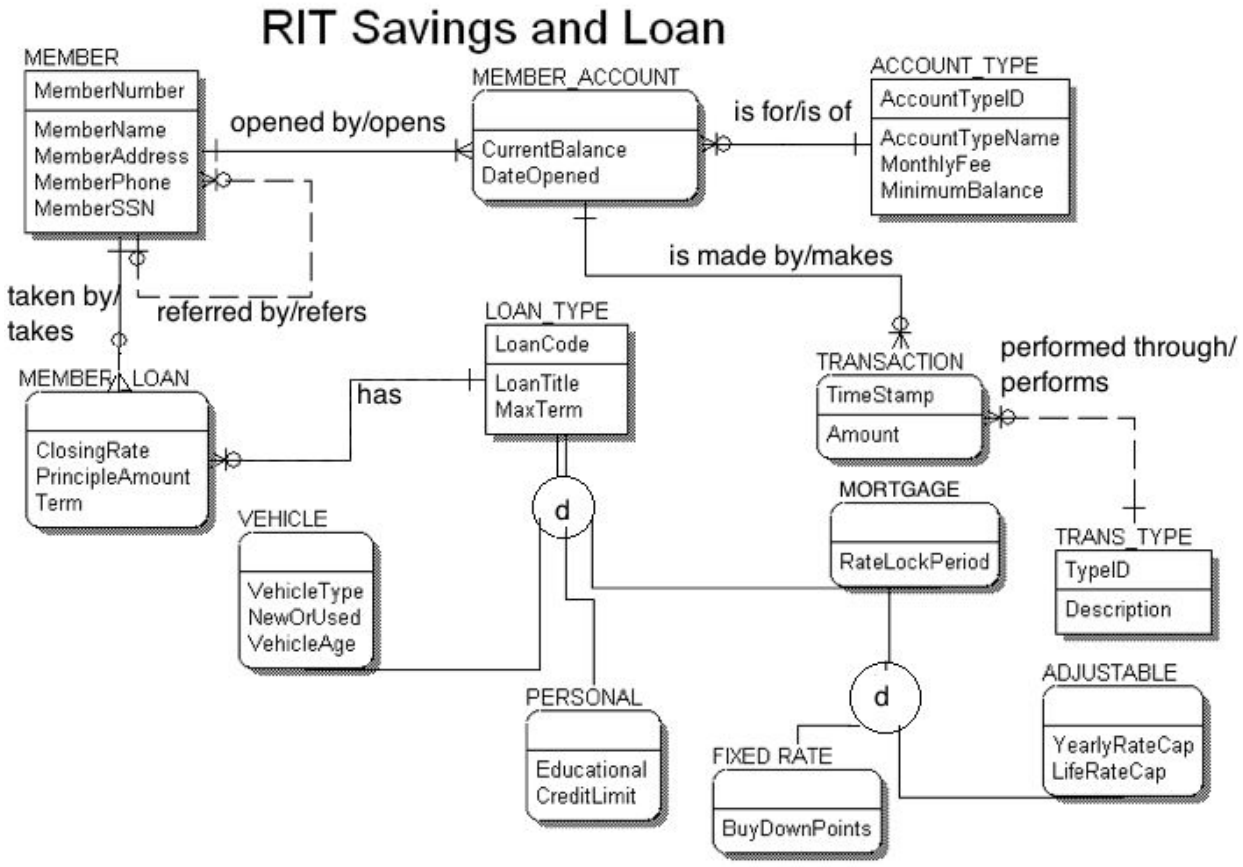
2. (2 points) Using the E-R diagram above, please explain why entity 7 is weak and what the specific term for that type of entity is.
REASON: it relies on another entity (6) to support it
TERM: ID-Dependent entity

3. (2 points) Using the E-R diagram above, please explain why entity 5 is weak and what the specific term for that type of entity is.
REASON: it relies on another entity (6) to support it
TERM: ID-Dependent entity

4. (1 point) Using the E-R diagram above, please explain what relationship makes entity 4 weak and what about that relationship causes it to be weak.
EXPLANATION: 4 has a 'has-a' relationship with 3, relies on 3 to exist

Part 2 – RIT Savings and Loan (50 points)

1. (50 points) Transpose the E-R diagram above into relations, implementing all relationships. Denote primary keys and foreign keys appropriately. Use proper relation notation. You need to provide reference statements.



YOUR TRANSPOSED RELATIONS:

MEMBER(MemberNumber, MemberName, MemberAddress, MemberPhone, MemberSSN, *Refer_MemberNumber*)
MEMBER(Refer_MemberNumber) mei MEMBER(MemberNumber)

MEMBER_LOAN(*MemberNumber, LoanCode*, ClosingRate, PrincipleAmount)
MEMBER_LOAN(MemberNumber) mei MEMBER(MemberNumber)
MEMBER_LOAN(LoanCode) mei LOAN_TYPE(LoanCode)

MEMBER_ACCOUNT(*MemberNumber, AccountTypeID*, CurrentBalance, DateOpened)
MEMBER_ACCOUNT(MemberNumber) mei MEMBER(MemberNumber)
MEMBER_ACCOUNT(AccountTypeID) mei ACCOUNT_TYPE(AccountTypeID)

ACCOUNT_TYPE(AccountTypeID, AccountTypeName, MonthlyFee, MinimumBalance)

LOAN_TYPE(LoanCode, LoanTitle, MaxTerm)

TRANSACTION(TimeStamp, *MemberNumber, AccountTypeID, TypeID*, Amount)
TRANSACTION(MemberNumber, AccountTypeID) mei
MEMBER_ACCOUNT(MemberNumber, AccountTypeID)
TRANSCTION(TypeID) mei TRANS_TYPE(TypeID)

TRANS_TYPE(TypeID, Description)

VEHICLE(*LoanCode*, VehicleType, NewOrUsed, VehicleAge)
VEHICLE(LoanCode) mei LOAN_TYPE(LoanCode)

PERSONAL(*LoanCode*, Educational, CreditLimit)
PERSONAL(LoanCode) mei LOAN_TYPE(LoanCode)

MORTGAGE(*LoanCode*, RateLockPeriod)
MORTGAGE(LoanCode) mei LOAN_TYPE(LoanCode)

FIXED_RATE(*LoanCode*, BuyDownPoints)
FIXED_RATE(LoanCode) mei LOAN_TYPE(LoanCode)

ADJUSTABLE(*LoanCode*, YearlyRateCap, LifeRateCap)
ADJUSTABLE(LoanCode) mei LOAN_TYPE(LoanCode)