Module 10

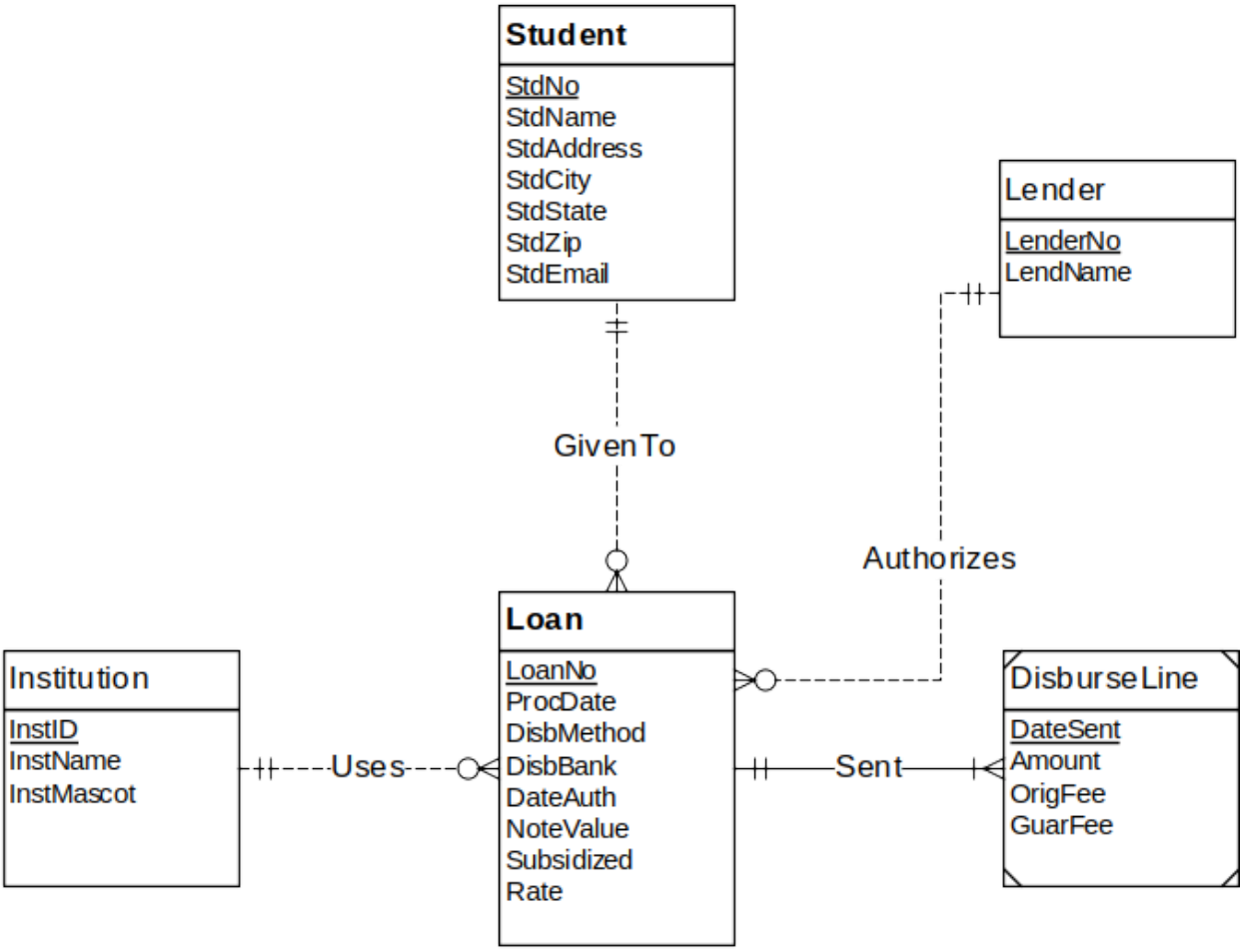

FIGURE - 1

I. For the ERD in Figure 1, you should indicate the applications of the entity type rule. For each entity type rule application, you should identify the table name, primary key, and other columns. You do not need to write CREATE TABLE statements.

NOTE - Red font indicates primary key of the table

NOTE - Blue font indicates foreign key of the table

Ans)

Student(StdNo, StdName, StdAddress, StdCity, StdState, StdZip, StdEmail)

Institution(InstID, InstName, InstMascot)

Lender (LenderNo, LendName)

Loan(LoanNo, ProcDate, DisbMethod, DisbBank, DateAuth, NoteValue, Subsidized, Rate)

DisburseLine(DataSent, Amount, OrigFee, GuarFee)

Conversion rules

1. Use the entity type rule to convert each entity type.

II. For the ERD in Figure 1, you should indicate applications of the 1-M relationship rule. For each 1-M relationship rule application, you should indicate the changes to the tables you listed in problem 1 including foreign key columns and NOT NULL constraints for foreign keys if necessary.

Ans)

Student(StdNo, StdName, StdAddress, StdCity, StdState, StdZip, StdEmail)

Institution(InstID, InstName, InstMascot)

Lender (LenderNo, LendName)

Loan(LoanNo, StdNo, InstID, LenderNo, ProcDate, DisbMethod, DisbBank, DateAuth, NoteValue, Subsidized, Rate)

FOREIGN KEY(StdNo) REFERENCES Student(StdNo)

FOREIGN KEY(InstID) REFERENCES Institution(InstId)

FOREIGN KEY(LenderNo) REFERENCES Lender(LenderNo)

StdNo NOT NULL , InstID NOT NULL , LenderNo NOT NULL

DisburseLine(DataSent, LoanNo, Amount, OrigFee, GuarFee)

FOREIGN KEY(LoanNo) REFERENCES Loan(LoanNo)

Conversion rules

1. Use the entity type rule to convert each entity type.
2. Use the 1-M relationship rule for all relationships

III. For the ERD in Figure 1, you should indicate applications of the M-N relationship rule. For each M-N relationship rule application, you should list the table name, primary key, and other columns.

Conversion rules

1. Use the entity type rule to convert each entity type.
2. Use the 1-M relationship rule for all relationships
3. M-N rule NOT APPLICABLE (there are no M-N relationships in the given ERD)

IV. For the ERD in Figure 1, you should indicate applications of the identifying relationship rule. For each identifying relationship rule application, you should indicate the changes to the tables you listed in problem 2.

Conversion rules

1. Use the entity type rule to convert each entity type.

2. Use the 1-M relationship rule for all relationships

3. M-N rule NOT APPLICABLE (there are no M-N relationships in the given ERD)

4. By using the identification dependency rule , we make LoanNo a component of the PK of **DisburseLine**. The PK of the **DisburseLine** table is a combination of LoanNo and DataSent. A not null constraint is not needed for **DisburseLine** LoanNo because this column is part of the primary key of **DisburseLine**.

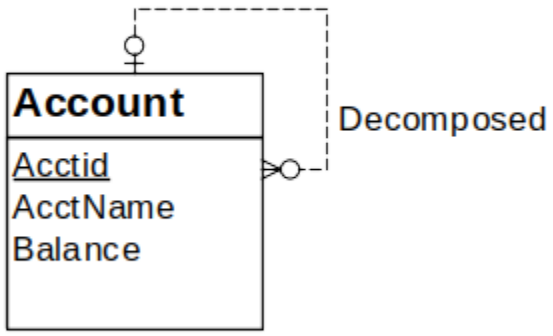

FIGURE - 2

V. Convert the ERD shown in Figure 2 into tables. List the conversion rules used and table design. For each table, you should list the primary key, foreign keys, other columns, and NOT NULL constraints for foreign keys if necessary. You do not need to write CREATE TABLE statements.

Account(Acctid, decomposedAccNo, AcctName, Balance)

FOREIGN KEY(decomposedAccNo) REFERENCES **Account**

Conversion rules:

1. Use the entity type rule to convert the entity type.

2. Use the 1-M relationship rule for the decomposed relationship.

FIGURE - 3

VI. Convert the ERD shown in Figure 3 into tables. List the conversion rules used and table design. For each table, you should list the primary key, foreign keys, other columns, and NOT NULL constraints for foreign keys if necessary. You do not need to write CREATE TABLE statements.

Ans)

Owner (OwnId, OwnName, OwnPhone)

Property(PropId, BldgName, UnitNo, Bdrms)

Relationship:

Shares(OwnId, PropId, StartWeek, EndWeek)

FOREIGN KEY(OwnId) REFERENCES **Owner**

FOREIGN KEY(PropId) REFERENCES **Property**

Conversion rules:

1. Use the entity type rule to convert the entity type.
2. Use the M-N rule to convert the **Shares** relationship.
