1. You should determine if the *Student*, *Lender*, and *Institution* tables are in BCNF. In the *Lender* table, *LenderName* is unique. In the *Institution* table, *InstName* is unique. In the *Student* table, *StdEmail* is unique. The primary key of each table is underlined. The primary key of each table is underlined. You should explain your decision and modify the table design by splitting tables or adding constraints if necessary.

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

Lender(LenderNo, LenderName)

Institution(InstNo, InstName, InstMascot)

* The Student table is not in BCNF because StdAddress, StdCity, StdState → StdZip; or if StdZip is a 9-digit zip code, then StdZip → Std City, StdState. It will be better to move forward with a 9-digit zip code design, and split the Student table into two with StdZip as the primary key of the new table.
* The Institution table is not in BCNF because InstMascot is not a unique value (e.g., there are many institutions with a “Tiger” as their mascot). It will be better to split the Institution table into two and create MascotID as the primary key of the new table.

The final modified tables would be as follows:

Student (StdNo, StdName, StdEmail, StdAddress, StdZip9)

UNIQUE (StdEmail)

FOREIGN KEY StdZip9 REFERENCES Zipcode

Zipcode (StdZip9, StdCity, StdState)

Lender (LenderNo, LenderName)

UNIQUE (LenderName)

Institution (InstNo, InstName, MascotID)

UNIQUE (InstName)

FOREIGN KEY MascotID REFERENCES Mascot

Mascot (MascotID, MascotName)