软件工程学院数据库系统及其应用作业

实验课程：数据库系统及其应用　　**年级**：2023 级　　**姓名**：顾翌炜

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6.1

Construct an E-R diagram for a car insurance company whose customers own one or more cars each. Each car has associated with it zero to any number of recorded accidents. Each insurance policy covers one or more cars and has one or more premium payments associated with it. Each payment is for a particular period of time, and has an associated due date, and the date when the payment was received.

6.1 解答

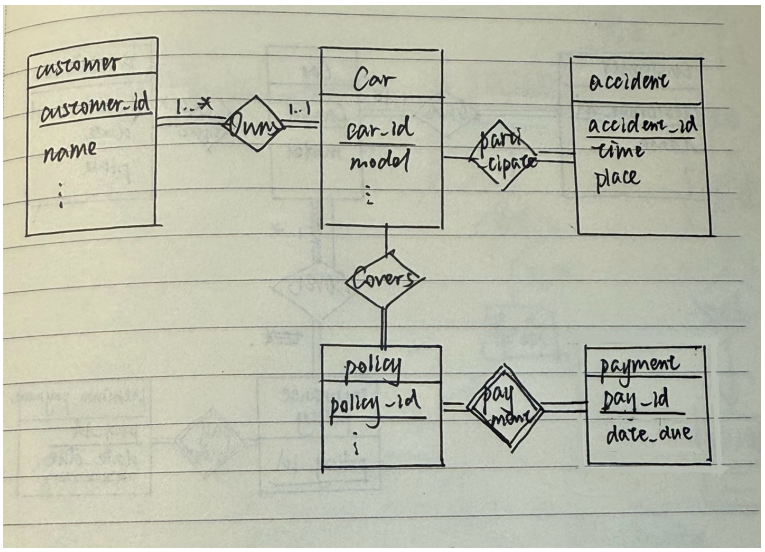


图 1: 6.1 解答

6.3

Design an E-R diagram for keeping track of the scoring statistics of your favorite sports team. You should store the matches played, the scores in each match, the players in each match, and individual player scoring statistics for each match.

6.3 解答

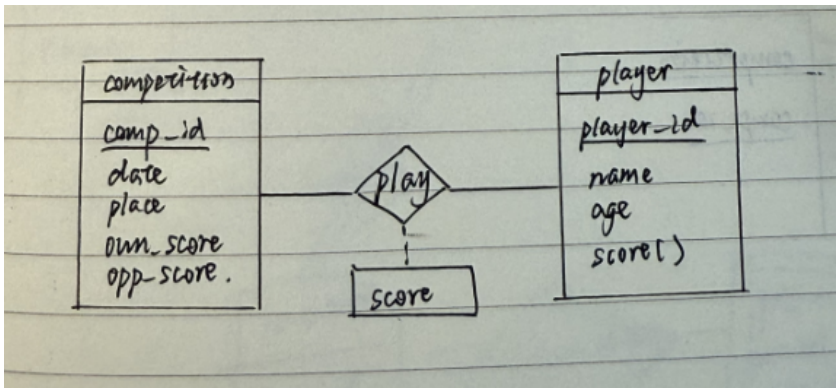


图 2: 6.3 解答

6.6

Consider the representation of the ternary relationship of Figure 6.29a using the binary relationships illustrated in Figure 6.29b (attributes not shown).

1. Show a simple instance of E, A, B, C, R_A, R_B, and R_C that cannot correspond to any instance of A, B, C, and R.

2. Modify the E-R diagram of Figure 6.29b to introduce constraints that will guarantee that any instance of E, A, B, C, R_A, R_B, and R_C that satisfies the constraints will correspond to an instance of A, B, C, and R.

3. Modify the preceding translation to handle total participation constraints on the ternary relationship.

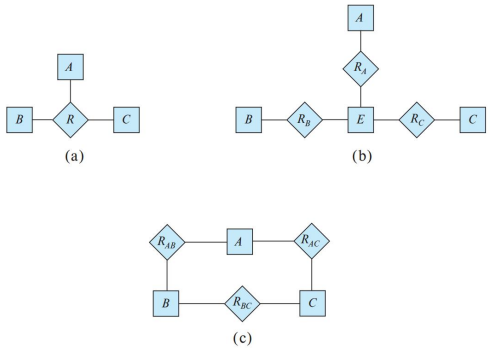


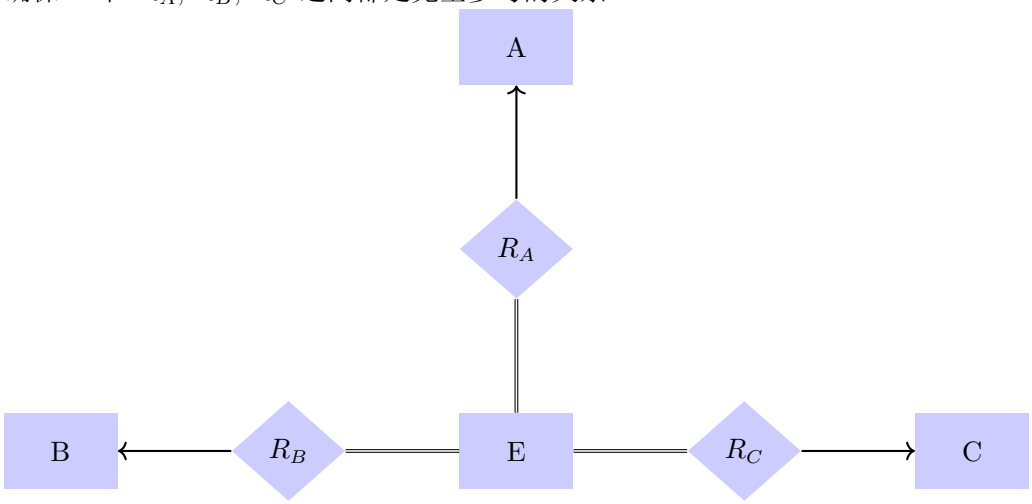
Figure 6.29 Representation of a ternary relationship using binary relationships.

图 3: Figure 6.29

6.6 解答

1) 假设 $E = \{e_1, e_2\}$，$A = \{a_1, a_2\}$，$B = \{b_1\}$，$C = \{c_1\}$，$R_A = \{(e_1, a_1), (e_2, a_2)\}$，$R_B = \{(e_1, b_1)\}$，$R_C = \{(e_1, c_1)\}$。我们看到，由于元组 (e_2, a_2)，不存在任何 A，B，C 和 R 的实例对应于 E，R_A，R_B 和 R_C。

2) 确保 E 和 R_A, R_B, R_C 之间都是完全参与的关系



3) 确保 R_A, R_B, R_C 和 A, B, C 之间都是完全参与的关系