1. BANK ACCOUNTS table rewritten to first normal form

Accounts

|  |  |  |  |
| --- | --- | --- | --- |
| **AccountID** | **AccountHolderID** | **AccountType** | **CurrentBalance** |
| A1 | C1 | Checking | $10,000.00 |
| A1 | C2 | Checking | $10,000.00 |
| A2 | C3 | Checking | $5,500.00 |
| A3 | C4 | Money Market | $25,000.00 |
| A3 | C5 | Money Market | $25,000.00 |
| A3 | C6 | Money Market | $25,000.00 |
| A4 | C1 | Savings | $60,000.00 |
| A4 | C2 | Savings | $60,000.00 |

AccountHolder

|  |  |
| --- | --- |
| **AccountHolderID** | **AccounthHolderName** |
| C1 | Donald Smith |
| C2 | Melania Smith |
| C3 | Mary Hernandez |
| C4 | Amy Clark |
| C5 | Steve Clark |
| C6 | Jamie Clark |

1. Given the following relation named LANGUAGE CENTER MIX with sample data:
   1. a. (10 pts) Give an example of an insertion anomaly
      1. If you were to add a new student to any pre-existing class, you would be repeating the class data for every student.
   2. (10 pts) Give an example of a deletion anomaly
      1. If you were to delete courseID 3, there would no longer be any records of client C6.
   3. (10 pts) Give an example of a modification anomaly
      1. If you were to modify the first row to change the CourseLevel entity, you would also need to update row 4 as that is the same course, but with a different client.
   4. (30 pts) List all the full, partial, and transitive functional dependencies and mark them. Do NOT include trivial, augmented, and equivalent functional dependencies
      1. CourseID -> CourseLanguage, CourseLevel
         1. Partial dependency, only uses CourseID component of the primary key
      2. ClientID -> ClientName
         1. Partial dependency, only uses ClientID component of the primary key
      3. CourseID, ClientID -> Attendance, FinalScore
         1. Full Key dependency