Database Systems 3

- Assessed Exercise 1 -

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## Create statements

* CREATE TABLE bands: bid is PRIMARY KEY, which is a unique band identifier;
* CREATE TABLE releases: rid is PRIMARY KEY, which is a unique release identifier, while bid is a FOREIGN KEY referencing the primary key from bands table (as a release is bound to a band);
* CREATE TABLE songs: rid and title form a composite PRIMARY KEY (because either rid or title would not provide a unique PRIMARY KEY in the table, as rid is used before as a PK for releases table) and rid is a FOREIGN KEY to releases’ table rid;
* CREATE TABLE members: mid is the PK for this table (unique identifier for each member);
* CREATE TABLE memberof: this is a relationship table created especially for binding the bands and members tables; it has no PK as it does not need one, because it references the 2 FKs (bid and mid) to the corresponding columns in the bands and members tables (PKs);

## Select statements

* Query 1: I have chosen only the members table as we need only the name of the members called “Tim”;
* Query 2: firstly we need bands table to get Iron Maiden’s bid, then we need memberof table to link the members and bands tables through their PKs (mid and bid);
* Query 3: members table is needed to get all names, and then those that match any name from the bands table are selected (thus needing the bands table);
* Query 4: we need only the memberof table as we can count the total number of bass players using the instrument column;
* Query 5: at first, we need to join members, releases and memberof tables because we need to get all drummers’ releases – we take name column from members, title and year from releases, and then check if the release was “launched” during the drummer’s time with the band;
* Query 6: we join bands with releases and songs because we need to have bands with bid as the releases’ bid, songs’ rid with releases’ rid, and then check that it’s a cdbonus with rating either null or greater or equal than 5;
* Query 7: we need bands’ names, thus we require bands table, and get all of them that have at least one release “launched” after 1999 (NOT including 1999);
* Query 8: we need bands’ names, requiring bands table, and get all of them which have no release before 2011 (all their releases should have been “launched” after 2011, INCLUDING 2011);