Data Normalisation

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Reading through the task statement, there is substantial redundancy of data handling between the individual cookery books, and for example the current rights management system. This calls for a strategy to optimise and normalise the database tables and the relationship between them.

Database normalisation is the process of organising the fields and tables of a relational database to minimise redundancy and dependency. Normalisation usually involves dividing large tables into smaller (and less redundant) tables and defining relationships between them. The objective is to isolate data so that additions, deletions, and modifications of a field can be made in just one table and then propagated through the rest of the database via the defined relationships.

The logical design of the database, including the tables and the relationships between them, is the core of an optimised relational database. A good logical database design can lay the foundation for optimal database and application performance. A poor logical database design can hinder the performance of the whole system.

Benefits of Normalisation include:

* Reasonable normalisation frequently improves performance. When useful indexes are available, the DB Server query optimiser is efficient at selecting rapid, efficient joins between tables.
* Faster sorting and index creation.
* Narrower and more compact indexes.
* Fewer indexes per table. This improves the performance of the INSERT, UPDATE, and DELETE statements.
* Fewer null values and less opportunity for inconsistency. This increases database compactness.

Note as normalisation increases, the number and complexity of joins required to retrieve data also increases. Too many complex relational joins between too many tables can hinder performance. Reasonable normalisation frequently includes few regularly executed queries that use joins involving more than four tables

We can optimise and normalise the data by creating foreign keys in the rights management system, and removing the corresponding images from the rights system. The foreign keys from the rights management system will be used to index the images in the cookery books.