

G186

Assumption: the LGA related information is provided by Google and set to 5 characters in length.
(Information we looked up in Google)

Assumption: the amount of the transaction is retained to two decimal places of accuracy.

Assumption: users may not pay fines on time, so the system should be able to record late fines.

Assumptions: Users can borrow up to 10 books at a time and cannot continue to borrow books beyond this limit.

Assumption: The maximum period of each book borrowing is six months (6 months), after which the book has to be returned or renewed.

Assumption: Users must pay all fines before they can continue borrowing books, and the system should enforce this rule.

Assumption: two report documents in the library cannot be borrowed at the same time

Why add loan_id as a proxy key (SK).

Reason for adding the Surrogate Key (loan_id): Complex composite key: Since the LOAN entity has a composite key with several attributes, adding a surrogate key like loan_id simplifies the entity. This is beneficial because: It reduces complexity in queries, especially in joins between tables.

It improves performance when indexing the table.

It ensures each loan transaction can be uniquely identified by a simple key rather than multiple attributes.

Expected large data volume in LOAN entity: The LOAN entity is likely to hold a significant amount of data (many records), so using a simple surrogate key like loan_id can help streamline database operations and improve scalability.

Why add fine_id as a proxy key (SK).

Independence of Fines and Loans: While there is a correlation between Fines (FINE) and Loans (LOAN), they are different business logic. By adding fine_id as a proxy key for the FINE entity, you can ensure that each fine record has a separate, unique identifier that does not conflict with the loan_id in the LOAN entity.