# SIT-103 DATBASE FUNDAMENTALS

# TASK 4.1P DATABSE NORMALISATION

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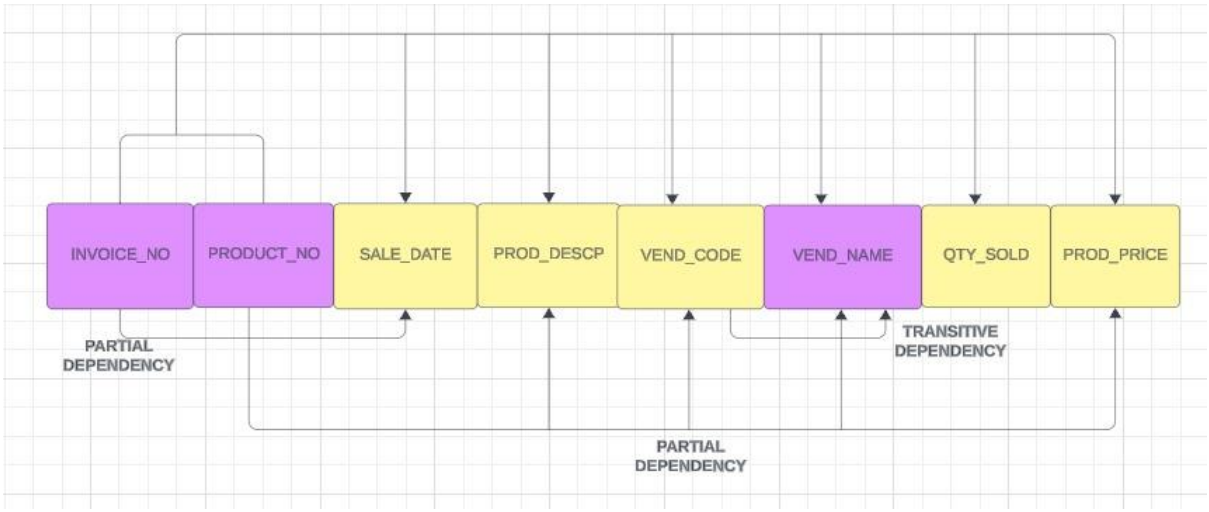
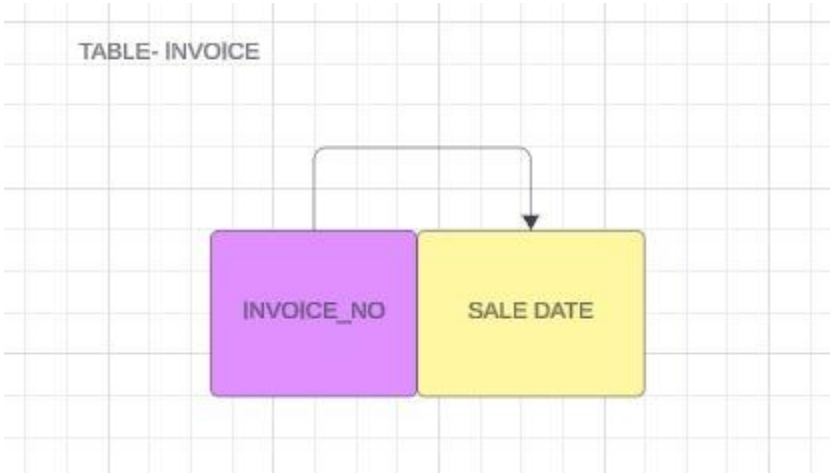
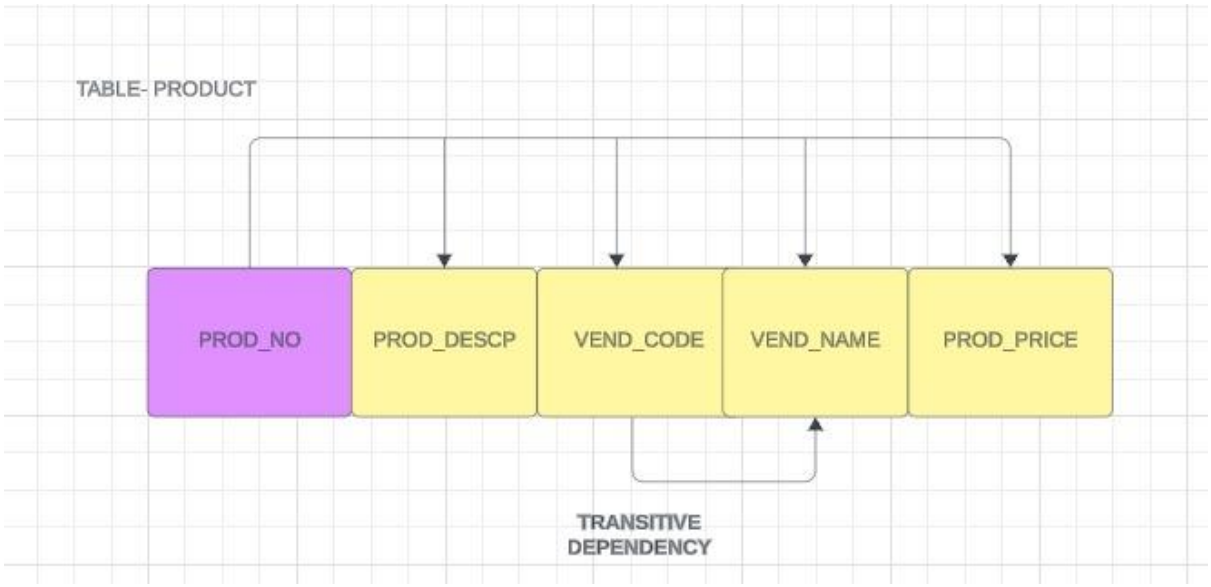
## 1. DEPENDENCY DIAGRAM

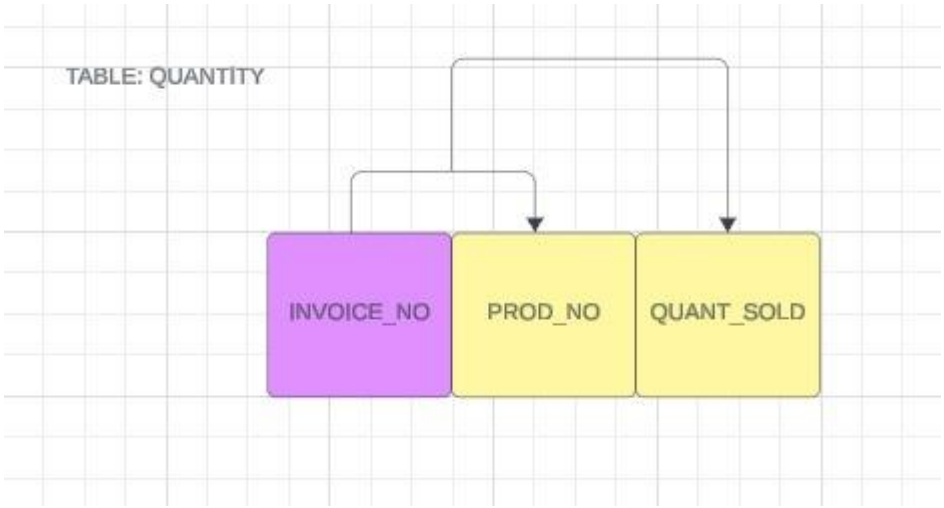



The relation is in 1NF as there is no repeating groups and each record is different and dependant on PK.

## 2. REMOVING PARTIAL DEPENDENCIES






This table meets the criteria for Second Normal Form (2NF) as it also fulfills the requirements for First Normal Form (1NF) and 2NF. It adheres to 1NF because it lacks repeating groups and each record is uniquely identifiable. Furthermore, it satisfies 2NF because there are no partial dependencies; every non-key attribute depends entirely on the full primary key. Although the table has been denormalized for performance optimization, it still complies with 2NF standards.

## 3. REMOVING TRANSITIVE DEPENDENCIES IN ALL TABLES:

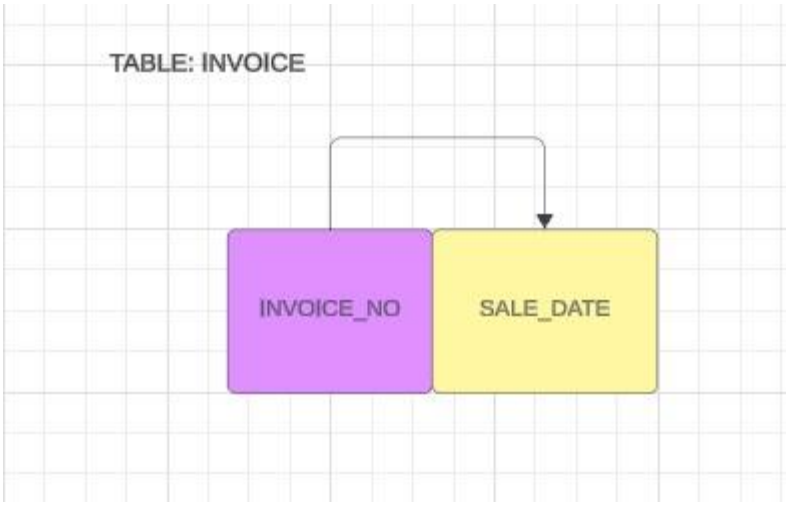


TABLE: INVOICE
INVOICE_NO
SALE_DATE

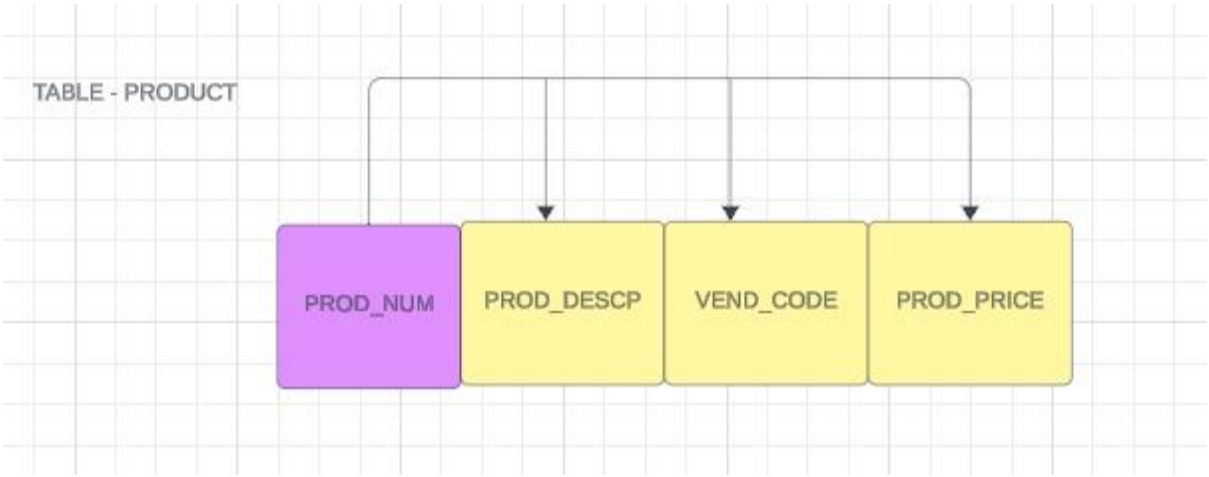


TABLE - PRODUCT
PROD_NUM
PROD_DESCP
VEND_CODE
PROD_PRICE

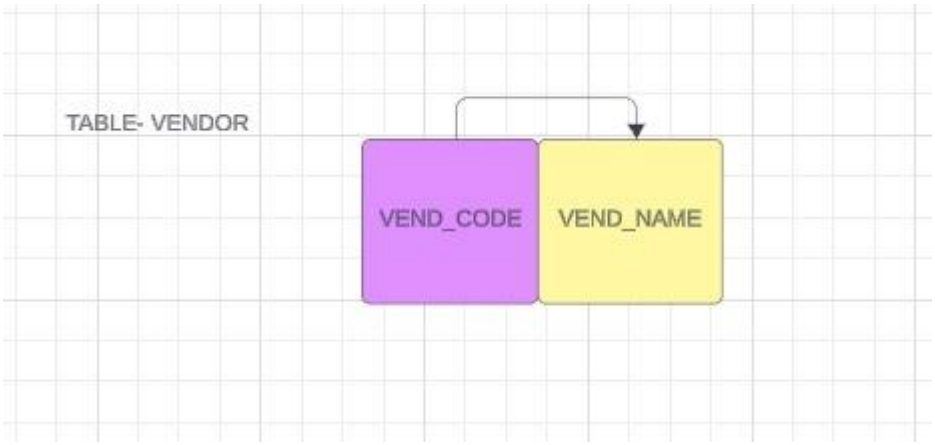
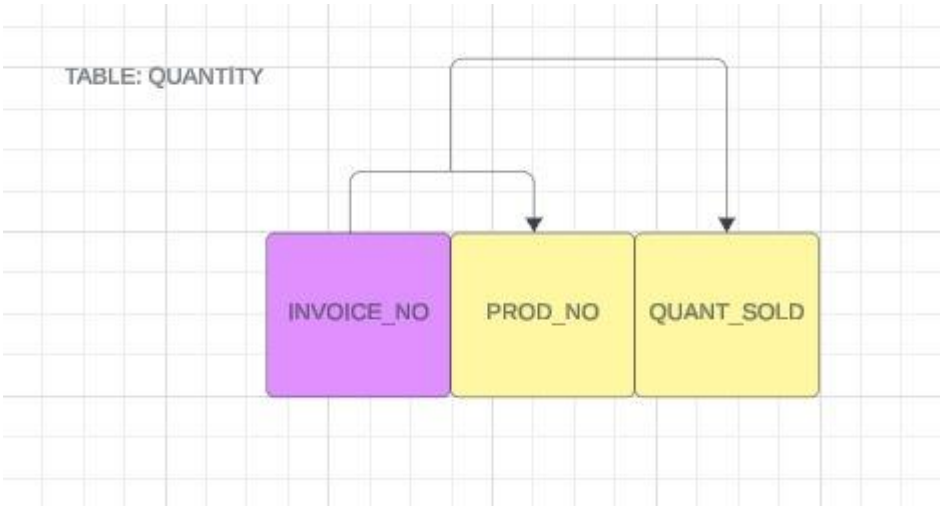


TABLE- VENDOR
VEND_CODE
VEND_NAME




*Each table in the dependency diagram has been denormalized to Third Normal Form (3NF) as follows: Firstly, the tables are already in Second Normal Form (2NF). Secondly, they have no transitive or partial dependencies, meaning all non-key attributes are completely dependent on the primary key and do not depend on other non-key attributes. This guarantees that the tables satisfy the 3NF requirements, even though they are in a denormalized state.*

## 4. ER DIAGRAM