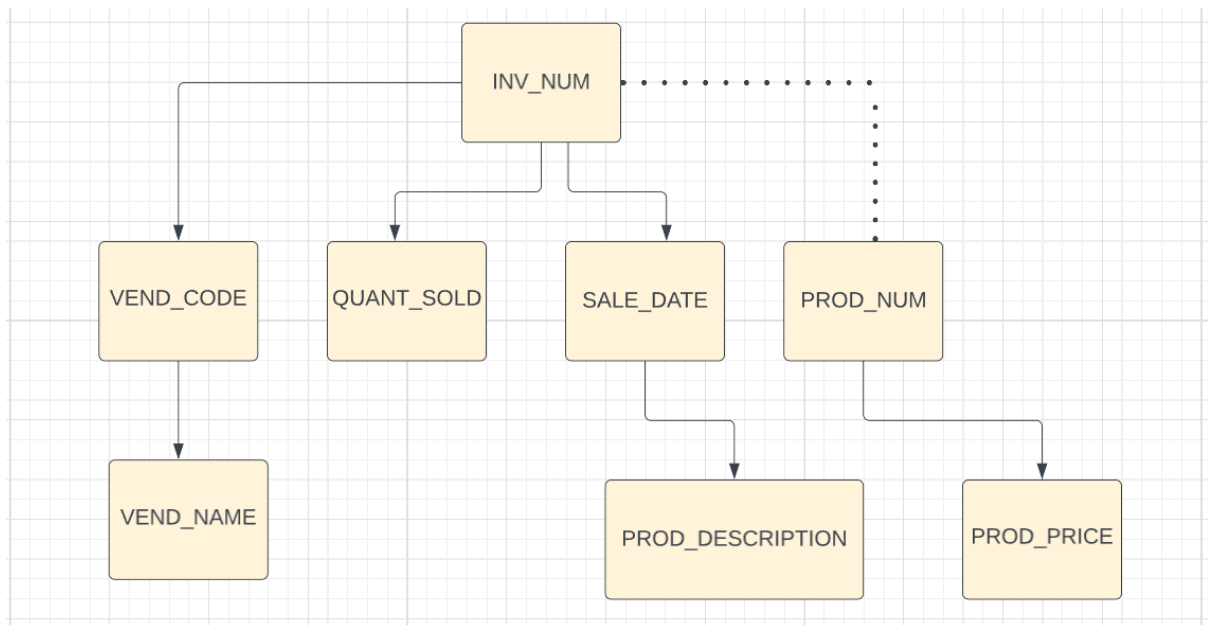4.1P

Name: Patrick Valera

1) Below is the dependency diagram. As show the primary key for the table can also be the composite key occurring by combining INV_NUM and PROD_NUM as it uniquely identifies each record.

2) In order to remove all partial dependencies, you would need to crate three separate tables.
   - VENDOR: (VEND_CODE, VEND_NAME)
   - PRODUCT: (PROD_NUM, PROD_DESCRIPTION, PROD_PRICE)
   - INVOICE: (INV_NUM, SALE_DATE, PROD_NUM, VEND_CODE, QUANT_SOLD)
   Below is a dependency diagram of each table.
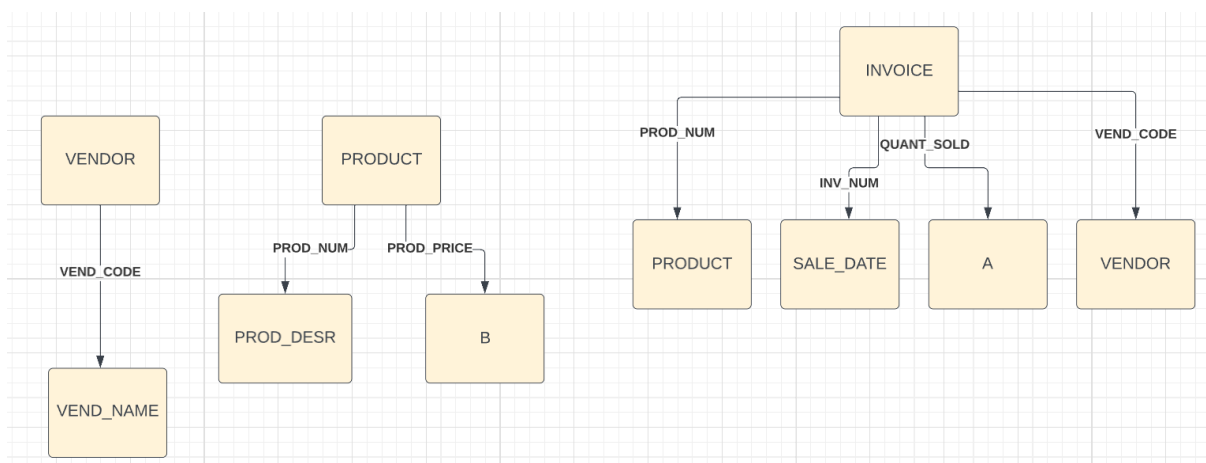
3) In the table structure in table 2 there are no transitive dependencies in any of the tables because neither of the attributes determine the value of other attributes.

4) All three tables are 3NF because:
   - INVOICE: There are no transitive dependencies because all the attributes are fully functionally dependant on the primary key (INV_NUM, PROD_NUM)
   - VENDOR: There are no transitive dependencies as all the attributes are fully functionally dependant on their primary key (VEND_CODE)
   - PRODUCT: There are no transitive dependencies as all the attributes are fully functional depending on their primary key (PROD_NUM)

5)