

1. NF und 2. NF

A table (relation) is in *1NF* if:

- There are no duplicated rows in the table.
- Each cell is single-valued (no repeating groups or arrays).
- Entries in a column (field) are of the same kind.

A table (relation) is in *2NF* if:

- If the table is in 1st normal form
- All the non-key columns are dependent on the table's primary key

EER Entity Table	Relational Model Mapping
Login	Login (loginID, accountID, email, password) Primary Key loginID
Account	Account (accountID, userName, firstName, lastName, birthDate, phoneNo, address) Primary Key accountID Alternative Key userName Foreign Key loginID References Login
Administrator	Administrator (accountID, businessName, isAdmin) Primary Key accountID Foreign Key accountID References Account On Update Cascade On Delete No Action
Customer	Customer (accountID, birthDate, accountStatus) Primary Key accountID Foreign Key accountID References Account On Update Cascade On Delete No Action
ProductAdministration	Administration (accountID, productID, updateDate) Primary Key (accountID, productID) Foreign Key accountID References Account On Update Cascade On Delete No Action Foreign Key productID References Product On Update Cascade On Delete No Action
ProductShopping	Administration (accountID, productID, orderDate) Primary Key (accountID, productID) Foreign Key accountID References Account On Update Cascade On Delete No Action

	Foreign Key productID References Product On Update Cascade On Delete No Action
Product	Administrator (productID, accountID, invoiceID, shippingID, productName, productCategory, productType, producer, brand, unitSize, unitPrice, productInformation, imagePath, isInStock, productStatus) Primary Key productID Foreign Key invoiceID References Invoice Foreign Key accountID References Account Foreign Key shippingID References Shipping
Shipping	Shipping (shippingID, shippingType, arrivalDate, postageDate, shippingCost, shippingCompany) Primary Key shippingID
Invoice	Invoice (invoiceID, quantity, shippingCost, totalAmount, orderDate, paymentStatus) Primary Key invoiceID
Payment	Payment (paymentID, invoiceID, customerID, amount, paymentDate) Primary Key paymentID Foreign Key customerID References Customer
Card	Card (paymentID, owner, cardNo, securityNo, bankName, expiration) Primary Key paymentID Foreign Key paymentID References Payment On Update Cascade On Delete No Action
PayPal	PayPal (paymentID, userName, password) Primary Key paymentID Foreign Key paymentID References Payment On Update Cascade On Delete No Action

3. NF

A table (relation) is in *3NF* if:

- No transitive dependencies between key attribute and other attributes within the table.

EER Entity Table	Relational Model Mapping
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Login	Login (loginID, accountID, email, password) Primary Key loginID
Account	Account (accountID, loginID , userName, firstName, lastName, birthDate, phoneNo) Alternative Key userName Primary Key accountID Foreign Key loginID References Login
Administrator	Administrator (accountID, businessName, isAdmin) Primary Key accountID Foreign Key accountID References Account On Update Cascade On Delete No Action
Customer	Customer (accountID, birthDate, accountStatus) Primary Key accountID Foreign Key accountID References Account On Update Cascade On Delete No Action
ProductAdministration	Administration (accountID, productID, updateDate) Primary Key (accountID, productid) Foreign Key accountID References Account On Update Cascade On Delete No Action Foreign Key productID References Product On Update Cascade On Delete No Action
ProductShopping	Administration (accountID, productID, orderDate) Primary Key (accountID, productid) Foreign Key accountID References Account On Update Cascade On Delete No Action Foreign Key productID References Product On Update Cascade On Delete No Action
Product	Administrator (productID, accountID, invoiceID, shippingID, productName, productCategory, productType, producer, brand, unitSize, unitPrice, productInformation, imagePath, isInStock, productStatus) Primary Key productID Foreign Key invoiceID References Invoice Foreign Key accountID References Account Foreign Key shippingID References Shipping
Shipping	Shipping (shippingID, shippingType, arrivalDate, postageDate, shippingCost, shippingCompany) Primary Key shippingID
Invoice	Invoice (invoiceID, quantity, shippingCost, totalAmount, orderDate, parmentStatus)

	Primary Key invoiceID
Payment	Payment (paymentID, customerID , invoiceID, customerID, amount, paymentDate) Primary Key paymentID Foreign Key customerID References Customer
Card	Card (paymentID, owner, cardNo, securityNo, bankName, expiration) Primary Key paymentID Foreign Key paymentID References Payment On Update Cascade On Delete No Action
PayPal	PayPal (paymentID, userName, password) Primary Key paymentID Foreign Key paymentID References Payment On Update Cascade On Delete No Action
AccountAddress	Administration (accountID, addressID) Primary Key accountID Foreign Key accountID References Account On Update Cascade On Delete No Action Foreign Key addressID References Address On Update Cascade On Delete No Action
Postaddress	Postaddress (addressID, cityID, streetName, streetNo, country, addressType) Primary Key addressID
City	City (cityID, zipCode, cityName) Primary Key cityID