

person (ID, DOB, FN, MN, CN) ID is the primary key

person-email (ID, email) Both ID & email together are the primary key
ID is the foreign key

person-phone (ID, phone) Both ID & phone are the primary key
ID is the foreign key

staff (staff ID, salary, position, password) staff ID is the primary key and atribute referencing person.

customer (customer ID) customer ID is the primary key

promotion (promotion id, discount%) promotion id is the primary key

products (product id, base price, selling price, stocking-date, No. of pieces) product id is the primary key

products-brand (product id, brand)

Both product id & brand together become the composite primary key
product id is the foreign key

products-model (product id, model)

Both product id & model together become the composite primary key and product id is the foreign key

purchase (purchase id, method of payment, cust id, staff id, date, qty)

purchase id is the primary key, cust id & staff id are the foreign keys

staff does promotion (staff id, promotion id, start-date, end-date)

Both staff id & promotion id together become the composite primary key & staff id & promotion id are the foreign keys

staff sells product (staff id, product id)

Both staff id & product id together become the composite primary key & staff id & product id are the foreign keys

customer benefits from promotion (cust id, promotion id)

Both cust id, promotion id together become the composite primary key

customer buys products (cust id, product id, date, qty)

Both cust id & product id together become the composite primary key & both are foreign keys

promotion on products (promotion id, product id)

both promotion id, product id together become the composite primary key and are also the foreign keys

For person relation:-

Candidate key:- ID

functional dependency:- $ID \rightarrow DOB, FN, MN, LN$

For person-email relation:-

Candidate key:- ID, email

No functional dependency.

For staff relation

Candidate key:- staff ID

functional dependency:- $staff\ ID \rightarrow salary, position, password$

For customer relation

Candidate key:- customer ID

functional dependency:- None.

For promotion relation

Candidate key:- promotion id

functional dependency:- $promotion\ id \rightarrow discount\ %$

For products relation

Candidate key:- product id

functional dependency:- $product\ id \rightarrow Base\ price, selling\ price, stock\ date, No. - of - pieces.$

For products-brand relation

Candidate key:- product id, Brand (No functional dependency)

For products-model relation

Candidate key:- product id, model

No functional dependency.

For purchase relation

Candidate key:- purchase id

functional dependency:- $purchase\ id \rightarrow method\ of\ payment, cust\ id, staff\ id, date, stock.$

For staff does promotion relation

Candidate key :- staffid, promotionid
functional dependency :- staffid, promotionid \rightarrow start-date, end-date.

For staff sells products :

Candidate key : staffid, productid
No functional dependency.

For customer benefits from promotion relation

Candidate key: custid, promotionid
No functional dependency

For customer buys products relation

Candidate key : custid, productid
functional dependency :- custid, productid \rightarrow date, qty

For promotion on products relation

Candidate key: promotionid, productid
No functional dependency.

BCNF Normalization

person	<u>ID</u>	DOB	FN	MN	LN
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person_email	<u>ID</u>	email
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person_phone	<u>ID</u>	phone
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staff	<u>staffid</u>	salary	position	password
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customer	<u>customer-ID</u>
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promotion	<u>promotion ID</u>	discount%
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products	<u>product ID</u>	Base price	selling Price	Starting Date	No. of pieces
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products_brand	<u>product_id</u>	Brand
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products_model	<u>product-id</u>	model
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purchase	<u>purchase ID</u>	method of payment	cust ID	staff ID	date	rating
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staff does promotion	<u>staff ID</u>	<u>promotion ID</u>	start_date	end_date
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staff sells products	<u>staff ID</u>	<u>product ID</u>
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customer benefits from promotion	<u>cust ID</u>	<u>promotion ID</u>
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customer buys products	<u>cust ID</u>	<u>product ID</u>	date	qty
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promotion on products	<u>promotion id</u>	<u>product id</u>
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