Complaint

Complaint(<u>CID</u>, Complaint_text, Complaint_status, Filed-date-time, UID)
Keys: CID
Primary Key: CID
FDs: CID->Text, status, Filed-date-time, UID
The relation is in 3NF

Complaints-On-Shop(<u>CID</u>, SID)
Keys: CID
Primary Key: CID
FDs: CID->SID
The relation is in 3NF

Complaints-On-Restaurant(<u>CID</u>, OID)
Keys: CID
Primary Key: CID
FDs: CID->OID
The relation is in 3NF

User-Account

User-Account(<u>UID</u>, Name, Gender, DOB)
Keys: UID
Primary Key: UID
FDs:UID -> Name, Gender, DOB
The relation is in 3NF

Related

Related(<u>UID1</u>, <u>UID2</u>, Related_type)
Keys: UID1UID2 (composite key)
Primary Key: UID1UID2
FDs: UID1UID2 -> Type
The relation is in 3NF

Shop_transaction

Shop(<u>UID</u>, <u>SID</u>, Amount-spent, Date-time-in, Date-time-out)
Keys: UIDSID (composite key)
Primary Key: UIDSID
FDs: UIDSID -> Amount-spent, Date-time-in, Date-time-out
The relation is in 3NF
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Dine

Dine(<u>UID</u>, <u>OID</u>, Amount-spent, Date-time-in, Date-time-out)
Keys: UIDOID (composite key)
Primary Key: UIDOID
FDs: UIDOID -> Amount-spent, Date-time-in, Date-time-out
The relation is in 3NF

Shop(Noun)

Shop(<u>SID</u>,Type, MID)
Keys: SID
Primary Key: SID
FDs: SID->Type, MID
The relation is in 3NF

Voucher

Voucher(<u>VID</u>, Description, Date-issued, Expiry-date, Status)
Keys: VID
Primary Key: VID
FDs: VID -> Description, Date-issued, Expiry-date, Status
The relation is in 3NF

Using ER approach for subclasses:

Purchase-Voucher

Purchase-Voucher(<u>VID</u>, Purchase-discount, UID, Date-time)
Keys: VID

Primary Key: VID
FDs: VID -> Purchase-discount, UID, Date-time
The relation is in 3NF

Dine-Voucher

Dine-Voucher(VID, Cash-discount, UID, Date-time)
Keys: VID
Primary Key: VID
FDs: VID -> Cash-discount, UID, Date-time
The relation is in 3NF

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Group-Voucher

Group-Voucher(VID, Group-size, Group-discount, UID, Date-time)
Keys: VID
Primary Key: VID
FDs: VID -> Group-size, Group-discount, UID, Date-time
The relation is in 3NF

Package-Voucher

Package-Voucher(VID, Package-discount)
Keys: VID
Primary Key: VID
FDs: VID -> Package-discount
The relation is in 3NF

Recommendation

Recommendation(NID,MID,OID,DID,VID,Valid-period,Date-Issued)
Keys: NID
Primary Key: NID
FDs: NID ->MID,OID,DID,VID,Valid-period,Date-Issued
The relation is in 3NF

UserAccount-Use-Recommendation(UID, NID)
Keys: UIDNID (composite key)
Primary Key: UIDNID
FDs: Only trivial FDs
The relation is in 3NF

Mall

Mall(MID,CID,Address,NumShops)
Keys: MID
Primary Key: MID
FDs: MID->CID, Address,NumShops
The relation is in 3NF

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Mall-Has-DayPackage(DID, MID)
Keys: DIDMID (composite key)
Primary Key: DIDMID
FDs: Only trivial FDs
The relation is in 3NF

Day Package

Day-Package(DID,UID,VID,Description)
Keys: DID
Primary Key: DID
FDs: DID->UID,VID,Description
The relation is in 3NF

DayPackage-Has-RestaurantOutlet(OID, DID)
Keys: DIDOID
Primary Key: DIDOID
FDs: Only trivial FDs
The relation is in 3NF

Mall-Mgmt-Company

Mall-Mgmt-Company(CID, Address)
Keys: CID
Primary Key: CID
FDs: CID → Address
The relation is in 3NF.

Restaurant Chain

Restaurant-Chain(RID, Address)
Keys: RID
Primary Key: RID
FDs: RID → Address

The relation is in 3NF.

Restaurant Outlet

Restaurant-Outlet(<u>OID</u>, RID, MID);
Keys: OID
Primary Key: OID
FDs: OID → RID, MID
The relation is in 3NF.