

5.3: Multiple Forms Normalisation -- Part 2

Form 1:

UNF: (Repeating Groups give an entity)

MAINTENANCEREPORT(prop_no, prop_address, owner_no, owner_title, owner_gname, owner_fname, owner_address, (date_time, description, cost))

1NF: (Partial Dependencies give an entity)

MAINTENANCEREPORT (prop_no, prop_address, owner_no, owner_title, owner_gname, owner_fname, owner_address)

RECORD(prop_no, date_time, description, cost)

Partial Dependency:

No Partial Dependency

2NF: (Transitive dependencies give an entity)

MAINTENANCEREPORT (prop_no, prop_address, owner_no, owner_title, owner_gname, owner_fname, owner_address)

RECORD(prop_no, date_time, description, cost)

Transitive dependencies:

Owner_no → owner_title, owner_gname, owner_fname, owner_address

3NF

MAINTENANCEREPORT (prop_no, prop_address, owner_no)

RECORD(prop_no, date_time, description, cost)

OWNER(owner_no, owner_title, owner_gname, owner_fname, owner_address)

Full Dependency:

prop_no → prop_address, owner_no

prop_no, date_time → description, cost

owner_no → owner_title, owner_gname, owner_fname, owner_address

Form 2:

UNF

RENT(**prop_no, lease_start_date**, prop_addr, weekly_rental_rate, bond, tenant_no, tenant_title, tenant_gname, tenant_fname, (payment_no, payment_date, payment_type, payment_amount, payment_paid_by))

1NF

RENT(**prop_no, lease_start_date**, prop_addr, weekly_rental_rate, bond, tenant_no, tenant_title, tenant_gname, tenant_fname)

PAYMENT(**payment_no**, payment_date, payment_type, payment_amount, payment_paid_by, **prop_no, lease_start_date**)

Partial Dependency:

prop_no → prop_addr

2NF

RENT(**prop_no, lease_start_date**, weekly_rental_rate, bond, tenant_no, tenant_title, tenant_gname, tenant_fname)

PAYMENT(**payment_no**, payment_date, payment_type, payment_amount, payment_paid_by, **prop_no, lease_start_date**)

PROPERTY(**prop_no**, prop_addr)

Transitive Dependency:

tenant_no → tenant_title, tenant_gname, tenant_fname

3NF

RENT(**prop_no, lease_start_date**, weekly_rental_rate, bond, tenant_no)

PAYMENT(**payment_no**, payment_date, payment_type, payment_amount, payment_paid_by, **prop_no, lease_start_date**)

PROPERTY(**prop_no**, prop_addr)

TENANT(**tenant_no**, tenant_title, tenant_gname, tenant_fname)

Full Dependency:

prop_no, lease_start_date → weekly_rental_rate, bond, tenant_no

payment_no → payment_date, payment_type, payment_amount, payment_paid_by,

prop_no, lease_start_date

prop_no → prop_addr

tenant_no → tenant_title, tenant_gname, tenant_fname

Collected 3NF Relations

MAINTENANCEREPORT (prop_no, prop_address, owner_no)
RECORD(prop_no, date time, description, cost)
OWNER(owner_no, owner_title, owner_gname, owner_fname, owner_address)

RENT(prop_no, lease start date, weekly_rental_rate, bond, tenant_no)
PAYMENT(payment_no, payment_date, payment_type, payment_amount,
payment_paid_by, prop_no, lease start date)
PROPERTY(prop_no, prop_addr)
TENANT(tenant_no, tenant_title, tenant_gname, tenant_fname)

After attribute synthesis

OWNER(owner_no, owner_title, owner_gname, owner_fname, owner_address)
TENANT (tenant_no, tenant_title, tenant_gname, tenant_fname)

RENT(prop_no, rent lease start date, rent_weekly_rental_rate, rent_bond,
rent_tenant_no)
PAYMENT(payment No, payment_date, payment_type, payment_amount,
payment_paid_by, prop_no, rent_lease_start_date)

PROPERTY(prop_no, prop_address, owner_no)
RECORD(prop_no, record date time, record_description, record_cost)