

1. Pet Ownership Details

UNF

PET_OWNER (owner_id, owner_fname, owner_lname, add_street, add_town, add_postcode, vet_id, vet_name, (animal_id, animal_gender, animal_name, animal_type, animal_birhtdate, animal_deceased))

1NF

PET_OWNER (owner_id, owner_fname, owner_lname, add_street, add_town, add_postcode, vet_id, vet_name)

PET (owner_id, animal_id, animal_gender, animal_name, animal_type, animal_birhtdate, animal_deceased)

Partial dependencies:

No partial dependencies present.

2NF

PET_OWNER (owner_id, owner_fname, owner_lname, add_street, add_town, add_postcode, vet_id, vet_name)

PET (owner_id, animal_id, animal_gender, animal_name, animal_type, animal_birhtdate, animal_deceased)

Transitive dependencies

vet_id → vet_name

3NF

PET_OWNER (owner_id, owner_fname, owner_lname, add_street, add_town, add_postcode, vet_id)

PET (owner_id, animal_id, animal_gender, animal_type, animal_birhtdate, animal_deceased)

VET (vet_id, vet_name)

Full dependencies

owner_id → owner_fname, owner_lname, add_street, add_town, add_postcode, vet_id

animal_id → owner_id, animal_gender, animal_type, animal_birhtdate, animal_deceased

vet_id → vet_name

2. Visit Invoice

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VISIT (animal_id, animal_name, vet_id, vet_name, visit_datetime, payment_method, (service_code, service_desc, service_cost), (drug_id, drug_name, qty_supplied, drug_cost))

1NF

VISIT (animal_id, animal_name, vet_id, vet_name, visit_datetime, visit_payment_method, visit_payment_total)

SERVICE (animal_id, visit_datetime, service_code, service_desc, service_cost)

PRESCRIPTION (animal_id, visit_datetime, drug_id, drug_name, qty_supplied, drug_cost)

Partial dependencies

animal_id → animal_name

drug_id → drug_name, drug_cost

2NF

VISIT (animal_id, vet_id, vet_name, visit_datetime, visit_payment_method, visit_payment_total)

SERVICE (animal_id, visit_datetime, service_code, service_desc, service_cost)

PRESCRIPTION (animal_id, visit_datetime, drug_id, qty_supplied)

PET (animal_id, animal_name)

DRUG (drug_id, drug_name, drug_cost)

Transitive dependencies

vet_id → vet_name

3NF

VISIT (animal_id, vet_id, visit_datetime, visit_payment_method, visit_payment_total)

SERVICE (animal_id, visit_datetime, service_code, service_desc, service_cost)

PRESCRIPTION (animal_id, visit_datetime, drug_id, qty_supplied)

PET (animal_id, animal_name)

DRUG (drug_id, drug_name, drug_cost)

VET (vet_id, vet_name)

Full dependencies

animal_id, visit_datetime → vet_id, visit_payment_method, visit_payment_total

service_code → animal_id, visit_datetime, service_desc, service_cost

animal_id, visit_datetime, drug_id → qty_supplied

animal_id → animal_name

drug_id → drug_name, drug_cost

vet_id → vet_name

Collected 3NF relations:

1. PET_OWNER (owner_id, owner_fname, owner_lname, add_street, add_town, add_postcode, vet_id)
2. PET (owner_id, animal_id, animal_gender, animal_type, animal_birhtdate, animal_deceased)
3. VET (vet_id, vet_name)
4. VISIT (animal_id, vet_id, visit_datetime, visit_payment_method, visit_payment_total)
5. SERVICE (animal_id, visit_datetime, service_code, service_desc, service_cost)
6. PRESCRIPTION (animal_id, visit_datetime, drug_id, qty_supplied)
7. DRUG (drug_id, drug_name, drug_cost)
8. PET (animal_id, animal_name)
9. VET (vet_id, vet_name)

Attribute Synthesis:

1. PET_OWNER (owner_id, owner_fname, owner_lname, add_street, add_town, add_postcode, vet_id)
2. & 8. PET (owner_id, animal_id, animal_gender, animal_type, animal_birhtdate, animal_deceased)
3. & 9. VET (vet_id, vet_name)
4. VISIT (animal_id, vet_id, visit_datetime, visit_payment_method, visit_payment_total)
5. SERVICE (animal_id, visit_datetime, service_code, service_desc, service_cost, animal_id, drug_id)
6. PRESCRIPTION (animal_id, visit_datetime, drug_id, qty_supplied)

7. DRUG (drug_id, drug_name, drug_cost)