

FIT3171 Assignment 1B

ANIMAL DOCTORS PET OWNERSHIP DETAILS

UNF

OWNER (owner_id, owner_givname, owner_famname, owner_addstreet, owner_addtown, owner_addpostcode, vet_id, vet_name, (pet_id, pet_gender, pet_name, pet_type, pet_bdate, pet_deceased))

** replacement of preferred vet details with vet details (a preferred vet is a vet) to prevent synonyms*

1NF

OWNER (owner_id, owner_givname, owner_famname, owner_addstreet, owner_addtown, owner_addpostcode, vet_id, vet_name)

PET (owner_id, pet_id, pet_gender, pet_name, pet_type, pet_bdate, pet_deceased)

Partial dependencies:

No partial dependencies present

2NF

OWNER (owner_id, owner_givname, owner_famname, owner_addstreet, owner_addtown, owner_addpostcode, vet_id, vet_name)

PET (owner_id, pet_id, pet_gender, pet_name, pet_type, pet_bdate, pet_deceased)

Transitive dependencies:

vet_id → vet_name

3NF

OWNER (owner_id, owner_givname, owner_famname, owner_addstreet, owner_addtown, owner_addpostcode, vet_id)

VET (vet_id, vet_name)

PET (owner_id, pet_id, pet_gender, pet_name, pet_type, pet_bdate, pet_deceased)

Name: Marcus Lim Tau Whang
Student ID: 30734819

Full dependencies:

owner_id → owner_givname, owner_famname, owner_addstreet, owner_addtown,
owner_addpostcode, vet_id

vet_id → vet_name

pet_id → owner_id, pet_gender, pet_name, pet_type, pet_bdate, pet_deceased

ANIMAL DOCTORS INVOICE FOR PROFESSIONAL SERVICES

UNF

VISIT (pet_id, pet_name, vet_id, vet_name, visit_datetime, (service_code, service_desc,
service_cost), (drug_id, drug_name, drug_qty, drug_cost), visit_totalcost, visit_paidby)

** replacement of servicing vet details with vet details (a servicing vet is a vet), & patient
details with pet details (a patient is a pet), to prevent synonyms*

1NF

VISIT (pet_id, pet_name, vet_id, vet_name, visit_datetime, visit_totalcost, visit_paidby)

VISIT_SERVICE (pet_id, visit_datetime, service_code, service_desc, service_cost)

PRESCRIPTION (pet_id, visit_datetime, drug_id, drug_name, drug_qty, drug_cost)

Partial dependencies:

pet_id → pet_name

service_code → service_desc

drug_id → drug_name

2NF

VISIT (pet_id, vet_id, vet_name, visit_datetime, visit_totalcost, visit_paidby)

PET (pet_id, pet_name)

VISIT_SERVICE (pet_id, visit_datetime, service_code, service_cost)

SERVICE (service_code, service_desc)

PRESCRIPTION (pet_id, visit_datetime, drug_id, drug_qty, drug_cost)

DRUG (drug_id, drug_name)

Transitive dependencies:

vet_id \rightarrow vet_name

3NF

VISIT (pet_id, vet_id, visit_datetime, visit_totalcost, visit_paidby)

VET (vet_id, vet_name)

PET (pet_id, pet_name)

VISIT_SERVICE (pet_id, visit_datetime, service_code, service_cost)

SERVICE (service_code, service_desc)

PRESCRIPTION (pet_id, visit_datetime, drug_id, drug_qty, drug_cost)

DRUG (drug_id, drug_name)

Full dependencies:

pet_id, visit_datetime \rightarrow vet_id, visit_totalcost, visit_paidby

vet_id \rightarrow vet_name

pet_id \rightarrow pet_name

pet_id, visit_datetime, service_code \rightarrow service_cost

service_code \rightarrow service_desc

pet_id, visit_datetime, drug_id \rightarrow drug_qty, drug_cost

drug_id \rightarrow drug_name

COLLECTED 3NF RELATIONS:

1. OWNER (owner_id, owner_givname, owner_famname, owner_addstreet, owner_addtown, owner_addpostcode, vet_id)
2. VET (vet_id, vet_name)
3. PET (owner_id, pet_id, pet_gender, pet_name, pet_type, pet_bdate, pet_deceased)
4. VISIT (pet_id, vet_id, visit_datetime, visit_totalcost, visit_paidby)
5. VET (vet_id, vet_name)
6. PET (pet_id, pet_name)
7. VISIT_SERVICE (pet_id, visit_datetime, service_code, service_cost)
8. SERVICE (service_code, service_desc)

Name: Marcus Lim Tau Whang
Student ID: 30734819

- 9. PRESCRIPTION (pet_id, visit_datetime, drug_id, drug_qty, drug_cost)
- 10. DRUG (drug_id, drug_name)

ATTRIBUTE SYNTHESIS:

1

OWNER (owner_id, owner_givname, owner_famname, owner_addstreet, owner_addtown, owner_addpostcode, vet_id)

2 & 5 - merge

VET (vet_id, vet_name)

3 & 6 - merge

PET (owner_id, pet_id, pet_gender, pet_name, pet_type, pet_bdate, pet_deceased)

4

VISIT (pet_id, vet_id, visit_datetime, visit_totalcost, visit_paidby)

7

VISIT_SERVICE (pet_id, visit_datetime, service_code, service_cost)

After adding prefixes:

VISIT_SERVICE (pet_id, visit_datetime, service_code, visit_service_cost)

8

SERVICE (service_code, service_desc)

9

PRESCRIPTION (pet_id, visit_datetime, drug_id, drug_qty, drug_cost)

After adding prefixes:

PRESCRIPTION (pet_id, visit_datetime, drug_id, pres_drug_qty, pres_drug_cost)

10

DRUG (drug_id, drug_name)