FIT3171 Assignment 1B
Task 1 Normalisation

Nadeem Emadeldin Hamed Hamed Abdelkader
30146224

Animal Doctors Pet Ownership Details

UNF

OWNER (owner_id, owner_given_name, owner_family_name, owner_street, owner_town, owner_postcode, pref_vet_id, pref_vet_name, (animal_id, animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased))

1NF

OWNER (<u>owner_id</u>, owner_given_name, owner_family_name, owner_street, owner_town, owner_postcode, pref_vet_id, pref_vet_name)

OWNERSHIP_REC (<u>owner_id</u>, <u>animal_id</u>, animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased)

Partial Dependencies:
animal_id —> animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased

2NF

OWNER (<u>owner_id</u>, owner_given_name, owner_family_name, owner_street, owner_town, owner_postcode, pref_vet_id, pref_vet_name)

OWNERSHIP_REC (<u>owner_id</u>, <u>animal_id</u>)

ANIMAL (<u>animal_id</u>, animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased)

Transitive Dependencies:
pref_vet_id —> pref_vet_name

3NF

OWNER (<u>owner_id</u>, owner_given_name, owner_family_name, owner_street, owner_town, owner_postcode, pref_vet_id)

VET (<u>pref_vet_id</u>, pref_vet_name)

OWNERSHIP_REC (<u>owner_id</u>, <u>animal_id</u>)

ANIMAL (<u>animal_id</u>, animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased)

Full Dependencies:
owner_id —> owner_given_name, owner_family_name, owner_street, owner_town, owner_postcode, pref_vet_id

pref_vet_id —> pref_vet_name
animal_id —> animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased

Animal Doctors Invoice for Professional Services

UNF

INVOICE (animal_id, animal_name, serv_vet_id, serv_vet_name, serv_date, serv_time, (serv_code, serv_desc, serv_cost), (drug_id, drug_name, drug_qty_supplied, drug_cost), serv_total_due, serv_pay_method)

1NF

INVOICE (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, animal_name, serv_vet_id, serv_vet_name, serv_total_due, serv_pay_method)

SERVICE_REC (<u>animal_id</u>, <u>serv_date</u>, <u>serv_time</u>, <u>serv_code</u>, serv_desc, serv_cost)

DRUG_REC (<u>animal_id</u>, <u>serv_date</u>, <u>serv_time</u>, <u>drug_id</u>, drug_name, drug_qty_supplied, drug_cost)

Partial Dependencies:
animal_id —> animal_name
serv_code —> serv_desc, serv_cost
drug_id —> drug_name, drug_cost

2NF

INVOICE (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, serv_vet_id, serv_vet_name, serv_total_due, serv_pay_method)

ANIMAL (<u>animal_id</u>, animal_name)

SERVICE_REC (<u>animal_id</u>, <u>serv_date</u>, <u>serv_time</u>, <u>serv_code</u>)

SERVICE (<u>serv_code</u>, serv_desc, serv_cost)

DRUG_REC (<u>animal_id</u>, <u>serv_date</u>, <u>serv_time</u>, <u>drug_id</u>, drug_qty_supplied)

DRUG (<u>drug_id</u>, drug_name, drug_cost)

Transitive Dependencies:
serv_vet_id —> serv_vet_name

3NF

INVOICE (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, serv_vet_id, serv_total_due, serv_pay_method)

VET (<u>serv_vet_id</u>, serv_vet_name)

ANIMAL (<u>animal_id</u>, animal_name)

SERVICE_REC (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, <u>serv_code</u>)

SERVICE (<u>serv_code</u>, serv_desc, serv_cost)

DRUG_REC (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, <u>drug_id</u>, drug_qty_supplied)

DRUG (<u>drug_id</u>, drug_name, drug_cost)

Full Dependencies:
animal_id, invoice_date, invoice_time —> serv_vet_id, serv_total_due, serv_pay_method)
serv_vet_id —> serv_vet_name
animal_id —> animal_name
serv_code —> serv_desc, serv_cost
animal_id, invoice_date, invoice_time, drug_id —> drug_qty_supplied
drug_id —> drug_name, drug_cost

Collected 3NF Relations

1. OWNER (<u>owner_id</u>, owner_given_name, owner_family_name, owner_street, owner_town, owner_postcode, pref_vet_id)

2. VET (<u>pref_vet_id</u>, pref_vet_name)

3. OWNERSHIP_REC (<u>owner_id</u>, <u>animal_id</u>)

4. ANIMAL (<u>animal_id</u>, animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased)

5. INVOICE (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, serv_vet_id, serv_total_due, serv_pay_method)

6. VET (<u>serv_vet_id</u>, serv_vet_name)

7. ANIMAL (<u>animal_id</u>, animal_name)

8. SERVICE_REC (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, <u>serv_code</u>)

9. SERVICE (<u>serv_code</u>, serv_desc, serv_cost)

10. DRUG_REC (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, <u>drug_id</u>, drug_qty_supplied)

11. DRUG (<u>drug_id</u>, drug_name, drug_cost)

Attribute Synthesis

1. OWNER (<u>owner_id</u>, owner_given_name, owner_family_name, owner_street, owner_town, owner_postcode, pref_vet_id)

2. & 6. VET (<u>vet_id</u>, vet_name)

3. OWNERSHIP_REC (<u>owner_id</u>, <u>animal_id</u>)

4. & 7. ANIMAL (<u>animal_id</u>, animal_gender, animal_name, animal_type, animal_birthdate, animal_deceased)

5. INVOICE (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, serv_vet_id, serv_total_due, serv_pay_method)

6. SERVICE_REC (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, <u>serv_code</u>)

7. SERVICE (<u>serv_code</u>, serv_desc, serv_cost)

8. DRUG_REC (<u>animal_id</u>, <u>invoice_date</u>, <u>invoice_time</u>, <u>drug_id</u>, drug_qty_supplied)

9. DRUG (drug_id, drug_name, drug_cost)