Normalisation

(i) Training course attendance details:

Training Course **Run By**

Course ID 256 Vet ID 45

Title Heart UltraSound Imaging Name Graham Sharp

Duration 2.5 Hrs

When 22nd August 2023 10 AM

Where Clinic ID: 12 Name: Clayton Small Animal Clinic

Participants

Vet ID	Home Clinic ID	Given Name	Family Name	Completed	Expiry (if Applicable)
12	12	Vivianna	Drayton	Y	22 August 2024
23	12	Paulie	Furst	Y	22 August 2024
34	12	Booth	Darnell	Y	22 August 2024
56	12		Willshire	N	
57	10	Drayton	Horning	Y	22 August 2024
62	10	Ruthanne	Middleton	Y	22 August 2024

... not all rows necessarily shown ...

Training Course **Run By**

Course ID 257 Vet ID 13

Title Heartworm Treatment/Prevention Name Marian Wu

Duration 1 hr

When 22nd August 2023 10 AM

Where Clinic ID: 12 Name: Clayton Small Animal Clinic

Participants

Vet ID	Home Clinic ID	Given Name	Family Name	Completed	Expiry (if Applicable)
14	12	Carree	Najera	Y	
15	12	Kelly	Cresar	Y	
16	12	Brittani	Sellwood	Y	
17	12	Cory	Esome	Y	

... not all rows necessarily shown ...

UNF:

TRAINING (train_id, train_name, train_duration, train_date_time, clinic_id, clinic_name, train_vet_id, train_vet_givname, train_vet_famname (partici_vet_id, partici_vet_clinic_id, partici_vet_givname, partici_vet_famname, partici_train_complt, partici_train_expiry))

1NF

TRAINING (train_id, train_name, train_duration, train_date_time, clinic_id, clinic_name, train_vet_id, train_vet_givname, train_vet_famname)

CK:

- train_id

PARTICIPANT (<u>train_id, partici_vet_id</u>, partici_vet_clinic_id, partici_vet_givname, partici_vet_famname, partici_train_complt, partici_train_expiry)

Candidate Key:

- train_id, partici_vet_id

Partial dependencies:

partici_vet_id -> partici_vet_clinic_id, partici_vet_givname, partici_vet_famname

2NF

TRAINING (<u>train_id</u>, train_name, train_duration, train_date_time, clinic_id, clinic_name, train_vet_id, train_vet_givname, train_vet_famname)

PARTICIPANT (<u>train_id, partici_vet_id</u>, partici_train_complt, partici_train_expiry)

PARTICI_VET (<u>partici_vet_id</u>, partici_vet_clinic_id, partici_vet_givname, partici_vet_famname)

Transitive dependencies:

clinic_id --> clinic_name

train_vet_id --> train_vet_givname, train_vet_famname

3NF

TRAINING (<u>train_id</u>, train_name, train_duration, train_date_time, clinic_id, train_vet_id)

CLINIC (<u>clinic_id</u>, clinic_name)

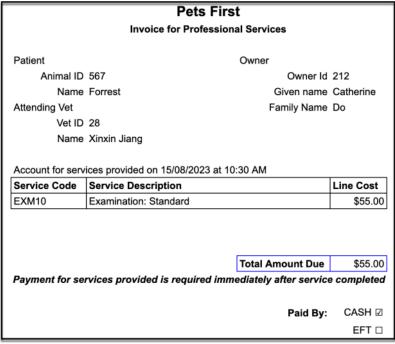**TRANING_VET** (<u>train_vet_id</u>, train_vet_givname, train_vet_famname)

PARTICIPANT (<u>train_id, partici_vet_id</u>, partici_train_complt, partici_train_expiry)

PARTICI_VET (<u>partici_vet_id</u>, partici_vet_clinic_id, partici_vet_givname, partici_vet_famname)

Full Dependencies:

train_id -> train_name, train_duration, train_date_time, clinic_id, train_vet_id

clinic_id -> clinic_name

train_vet_id -> train_vet_givname, train_vet_famname

train_id, partici_vet_id -> partici_train_complt, partici_train_expiry

partici_vet_id -> partici_vet_clinic_id, partici_vet_givname, partici_vet_famname

(ii) Clinic visit invoice:

Pets First
Invoice for Professional Services

Patient   Owner
 Animal ID 567   Owner Id 212
  Name Forrest   Given name Catherine
Attending Vet   Family Name Do
  Vet ID 28
  Name Xinxin Jiang

Account for services provided on 15/08/2023 at 10:30 AM

Service Code	Service Description	Line Cost
EXM10	Examination: Standard	$55.00

	Total Amount Due	$55.00

Payment for services provided is required immediately after service completed

Paid By: CASH ☑
    EFT ☐

Pets First
Invoice for Professional Services

Patient   Owner
 Animal ID 567   Owner Id 212
  Name Forrest   Given name Catherine
Attending Vet   Family Name Do
  Vet ID 28
  Name Xinxin Jiang

Account for services provided on 17/08/2023 at 10:30 AM

Service Code	Service Description	Line Cost
EXM10	Examination: Standard	$60.00

	Total Amount Due	$60.00

Payment for services provided is required immediately after service completed

Paid By: CASH ☐
    EFT ☑

Pets First
Invoice for Professional Services

Patient   Owner
 Animal ID 567   Owner Id 212
  Name Forrest   Given name Catherine
Attending Vet   Family Name Do
  Vet ID 45
  Name Graham Sharp

Account for services provided on 19/08/2023 at 9:30 AM

Service Code	Service Description	Line Cost
EXM11	Examination: Detailed Assessment	$85.00
LAB12	Laboratory: Urinalysis Dipstick, Specific Gravity	$45.90
INJ01	Injection: Clinic administered injection	$10.00

Drug ID	Drug Name	Qty Supplied	Line Cost
567	Convenia Injection	1	$25.00
253	Bactrim Tablets	10	$40.00

	Total Amount Due	$205.90

Payment for services provided is required immediately after service completed

Paid By: CASH ☐
    EFT ☑

UNF

VISIT (pet_id, pet_name, attending_vet_id, attending_vet_givname, attending_vet_famname, owner_id, owner_givname, owner_famname, visit_date_time, visit_total_cost, visit_paidby (service_code, service_description, service_acc_linecost) (drug_id, drug_name, pres_drug_qtysupplied, pres_drug_linecost))

1NF

VISIT (<u>attending_vet_id</u>, <u>visit_date_time</u>, pet_id, pet_name, attending_vet_givname, attending_vet_famname, owner_id, owner_givname, owner_famname, visit_total_cost, visit_paidby)

CKs:

- pet_id, visit_date_time

- attending_vet_id, visit_date_time

SERVICE_ACC (<u>attending_vet_id</u>, <u>visit_date_time</u>, <u>service_code</u>, service_description, service_acc_linecost)

CK:

- attending_vet_id, visit_date_time, service_code

PRESCRIBE (<u>attending_vet_id</u>, <u>visit_date_time</u>, <u>drug_id</u>, drug_name, pres_drug_qtysupplied, pres_drug_linecost)

CK:

- attending_vet_id, visit_date_time, drug_id

Partial dependencies:

attending_vet_id --> attending_vet_givname, attending_vet_famname

service_code -> service_description

drug_id --> drug_name

2NF

VISIT (<u>attending_vet_id</u>, <u>visit_date_time</u>, pet_id, pet_name, owner_id, owner_givname, owner_famname, visit_total_cost, visit_paidby)

ATTENDING_VET(<u>attending_vet_id</u> attending_vet_givname, attending_vet_famname)

SERVICE_ACC (<u>attending_vet_id</u>, <u>visit_date_time</u>, <u>service_code</u>, service_acc_linecost)

SERVICE (<u>service_code</u>, service_description)

PRESCRIBE (<u>attending_vet_id</u>, <u>visit_date_time</u>, <u>drug_id</u>, pres_drug_qtysupplied, pres_drug_linecost)

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

Transitive dependencies:

pet_id -> pet_name

owner_id -> owner_givname, owner_famname

3NF

VISIT (<u>attending_vet_id</u>, <u>visit_date_time</u>, pet_id, owner_id, visit_total_cost, visit_paidby)

OWNER(<u>owner_id</u> , owner_givname, owner_famname)

PET (<u>pet_id,</u> pet_name)

ATTENDING_VET(<u>attending_vet_id</u> attending_vet_givname, attending_vet_famname)

SERVICE_ACC (<u>attending_vet_id</u>, <u>visit_date_time</u>, <u>service_code</u>, service_acc_linecost)

SERVICE (<u>service_code</u>, service_description)

PRESCRIBE (<u>attending_vet_id</u>, <u>visit_date_time</u>, <u>drug_id</u>, pres_drug_qtysupplied, pres_drug_linecost)

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

Full Dependencies:

visit_date_time ,attending_vet_id -> owner_id, , pet_id, visit_total_cost, visit_paidby

owner_id ->owner_givname, owner_famname

pet_id ->_pet_name

attending_vet_id ->attending_vet_givname, attending_vet_famname

attending_vet_id, visit_date_time, service_code -> service_acc_linecost

service_code -> service_description

attending_vet_id, visit_date_time, drug_id -> pres_drug_qtysupplied, pres_drug_linecost

COLLECTED 3NF RELATIONS:

1. **TRAINING** (train_id, train_name, train_duration, train_date_time, clinic_id, train_vet_id)

2. **CLINIC** (clinic_id, clinic_name)

3. **TRANING_VET** (train_vet_id, train_vet_givname, train_vet_famname)

4. **PARTICIPANT** (train_id, partici_vet_id, partici_train_complt, partici_train_expiry)

5. **PARTICI_VET** (partici_vet_id, partici_vet_clinic_id, partici_vet_givname, partici_vet_famname)

6. **VISIT** (attending_vet_id, visit_date_time, pet_id, owner_id, visit_total_cost, visit_paidby)

7. **OWNER** (owner_id , owner_givname, owner_famname)

8. **PET** (pet_id, pet_name)

9. **ATTENDING_VET** (attending_vet_id attending_vet_givname, attending_vet_famname)

10. **SERVICE_ACC** (attending_vet_id, visit_date_time, service_code, service_acc_linecost)

11. **SERVICE** (service_code, service_description)

12. **PRESCRIBE** (attending_vet_id, visit_date_time, drug_id, pres_drug_qtysupplied, pres_drug_linecost)

13. **DRUG** (drug_id, drug_name)

ATTRIBUTE SYNTHESIS:

3.&5.&9.

VET (<u>vet_id</u>, clinic_id, vet_givname, vet_famname)

FINAL 3NF RELATIONS:

TRAINING (<u>train_id</u>, train_name, train_duration, train_date_time, clinic_id, vet_id)

CLINIC (<u>clinic_id</u>, clinic_name)

PARTICIPANT (<u>train_id, partici_vet_id,</u> partici_train_complt, partici_train_expiry)

VISIT (<u>vet_id, visit_date_time,</u> pet_id, owner_id, visit_total_cost, visit_paidby)

OWNER (<u>owner_id</u> , owner_givname, owner_famname)

PET (<u>pet_id,</u> pet_name)

VET(<u>vet_id,</u> clinic_id, vet_givname, vet_famname)

SERVICE_ACC (<u>vet_id, visit_date_time, service_code,</u> service_acc_linecost)

SERVICE (<u>service_code</u>, service_description)

PRESICRIBE (<u>vet_id, visit_date_time, drug_id,</u> pres_drug_qtysupplied, pres_drug_linecost)

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