**Entity 1: ADMIN\_USER**

ADMIN\_USER (AdminID, FirstName, LastName, Phone, Email)

**Functional Dependencies:** AdminID 🡪 (FirstName, LastName, Phone, Email)

**Candidate Key:** AdminID

As every determinant is candidate key, normalization is complete for entity ADMIN\_USER

**Entity 2: USER**

USER (UserID, IdentificationID, FirstName, LastName, Age, Phone, Address,

FamilyMembersCount, Email, AdoptedBefore)

**Functional Dependencies:** (UserID, IdentificationID) 🡪 (FirstName, LastName, Age, Phone,

Address, FamilyMembersCount, Email, AdoptedBefore)

**Candidate Key:** UserID, IdentificationID

As every determinant is candidate key, normalization is complete for entity USER

**Entity 3: SHELTER\_DETAILS**

SHELTER\_DETAILS (ShelterID, ShelterName, ShelterPhone, ShelterEmail, AvailibilityCount,

Rating)

**Functional Dependencies:** ShelterID 🡪 (ShelterName, ShelterPhone, ShelterEmail,

AvailibilityCount, Rating)

**Candidate Key:** ShelterID

As every determinant is candidate key, normalization is complete for entity SHELTER\_DETAILS

**Entity 4: ANIMAL\_DETAILS**

ANIMAL\_DETAILS (AnimalID, Type, Breed, HowOld, Gender, Spayed, Personality, *AdminID*,

*UserID*, *ShelterID*)

**Functional Dependencies:** AnimalID 🡪 (Type, Breed, HowOld, Gender, Spayed, Personality)

**Candidate Key:** AnimalID

**To Normalize:**

ANIMAL\_DETAILS (AnimalID, Type, Breed, HowOld, Gender, Spayed, Personality, *AdminID*,

*UserID*, *ShelterID*)

Where ANIMAL\_DETAILS.AdminID must exist in ADMIN\_USER.AdminID

Where ANIMAL\_DETAILS.UserID must exist in USER.UserID

Where ANIMAL\_DETAILS.ShelterID must exist in SHELTER\_DETAILS.ShelterID

As every determinant is candidate key, normalization is complete for entity ANIMAL\_DETAILS

**Entity 5: MEDICAL\_RECORD**

MEDICAL\_RECORD (MedicalID, TreatmentDesc, TreatmentPrice, TreatmentDate, *AnimalID*,

Vetlicense, VetName, VetClinic, VetFees)

**Functional Dependencies:** MedicalID 🡪 (TreatmentDesc, TreatmentPrice, TreatmentDate,

*AnimalID*)

Vetlicense 🡪 (VetName, VetClinic, VetFees)

**Candidate Key:** MedicalID

As all the determinants are not candidate key, we will normalize it further.

**To\_normalize:**

VET\_DETAILS (VetName, VetClinic, VetFees)

MEDICAL\_RECORD (MedicalID, TreatmentDesc, TreatmentPrice, TreatmentDate, *AnimalID*,

*Vetlicense*)

Where MEDICAL\_RECORD.Vetlicense MUST EXSIT IN VET\_DETAILS.Vetlicense

Where MEDICAL\_RECORD.AnimalID MUST EXSIT IN ANIMAL\_DETAILS.AnimalID

Again, checking functional dependencies for both relations and now they are both in BCNF, the normalization is completed.

**Entity 6: OTHER\_FACILITIES**

OTHER\_FACILITIES (FacilityID, FacilityDesc, FacilityProvider, Expenses, Address, *AnimalID*)

**Functional Dependencies:** FacilityID 🡪 (FacilityDesc, FacilityProvider, Expenses, Address)

**Candidate Key:** FacilityID

**To\_normalize:**

OTHER\_FACILITIES (FacilityID, FacilityDesc, FacilityProvider, Expenses, Address, *AnimalID*)

Where OTHER\_FACILITIES.AnimalID MUST EXSIT IN ANIMAL\_DETAILS.AnimalID

As every determinant is candidate key, normalization is complete for entity OTHER\_FACILITIES

**Entity 7: REQUEST**

REQUEST (RequestID, RequestorName, RequestDesc, CreatedBy, AnimalDesc, RequestStatus,

*UserID*, *AdminID*, *AnimalID*, *ShelterID*)

**Functional Dependencies:** RequestID 🡪 (RequestorName, RequestDesc, CreatedBy, AnimalDesc,

RequestStatus)

**Candidate Key:** RequestID

**To Normalize:**

REQUEST (RequestID, RequestorName, RequestDesc, CreatedBy, AnimalDesc, RequestStatus,

*UserID, AdminID*, *AnimalID*, *ShelterID*)

Where REQUEST.AdminID must exist in ADMIN\_USER.AdminID

Where REQUEST.UserID must exist in USER.UserID

Where REQUEST.ShelterID must exist in SHELTER\_DETAILS.ShelterID

Where REQUEST.AnimalID must exist in ANIMAL\_DETAILS.AnimalID

As every determinant is candidate key, normalization is complete for entity REQUEST.

**Entity 8: HISTORY**

HISTORY (HistoryID, RequestDate, AdoptionDate, Status, Comments, *RequestID*)

**Functional Dependencies:** HistoryID 🡪 (RequestDate, AdoptionDate, Status, Comments)

**Candidate Key:** HistoryID

**To Normalize:**

HISTORY (HistoryID, RequestDate, AdoptionDate, Status, Comments, *RequestID*)

Where HISTORY.RequestID must exist in REQUEST.RequestID

As every determinant is candidate key, normalization is complete for entity HISTORY