

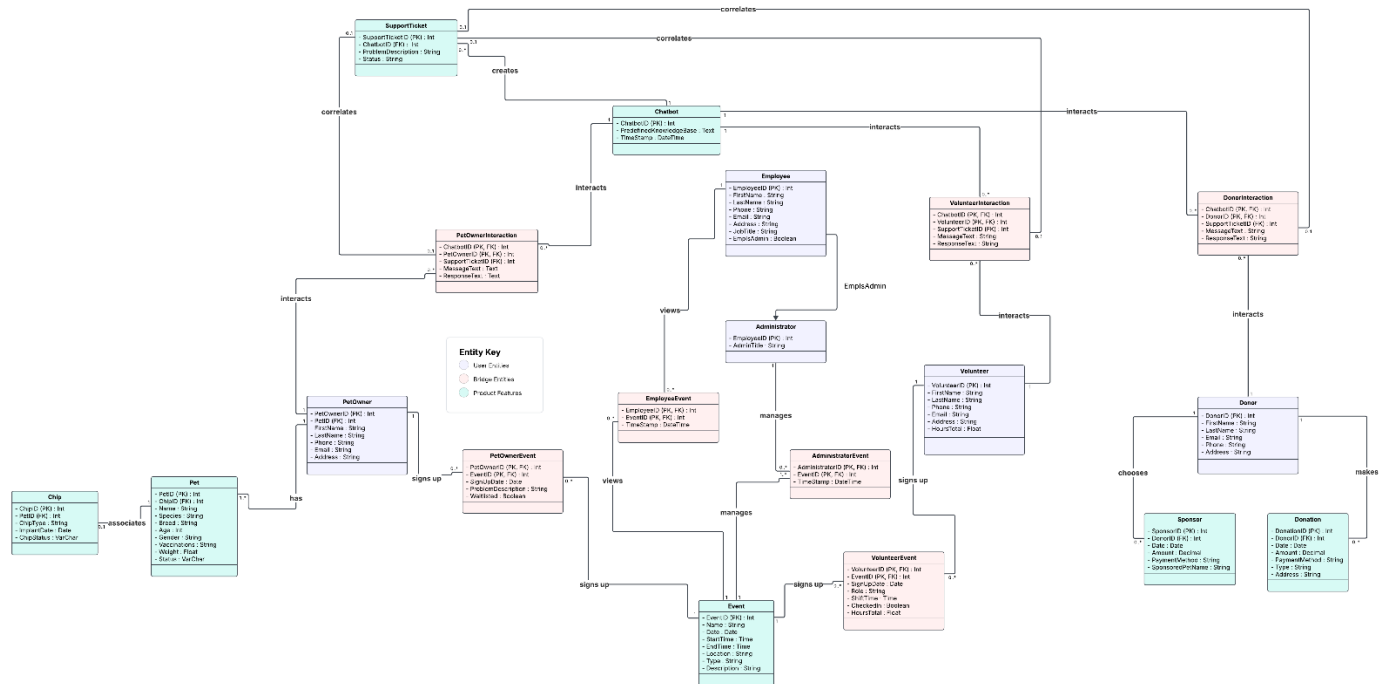
Database Design and Data Definitions

7.1 Database Diagram Narrative

This database was designed to encompass all those included in the Pets4Life environment – pet owners, pets, donors, volunteers, and employees – and the features included within the website, such as a chatbot that can create a support ticket for further escalation and various forms to attend an event, volunteer, donate, or sponsor a pet. Bridge tables were then made to reduce many-to-many relationships to one-to-many relationships, reducing complexity in the database.

To be fully normalized in third normal form (3NF), any partial and transitive dependencies must be converted to fully-functional dependencies. Partial dependencies are defined as those who have elements dependent upon only part of a composite key (multiple primary keys). Transitive dependencies are defined as those where dependency is on a non-key.

7.2 Database Diagram



7.3 Database Definitions

Support Ticket

Attribute	Definition	Type	Size	Key
<u>SupportTicketID</u>	Support ticket's unique identifier	Int	8 bytes	Primary
<u>ChatbotID</u>	Unique identifier assigned to the chatbot	Int	8 bytes	Foreign
ProblemDescription	Description of the problem	String	255 bytes	No
Status	Status of the support ticket	String	20 bytes	No

Chatbot

Attribute	Definition	Type	Size	Key
<u>ChatbotID</u>	Unique identifier assigned to the chatbot	Int	8 bytes	Primary
PredefinedKnowledgeBase	Predefined knowledge or responses of the chatbot	Text	255 bytes	No
TimeStamp	Timestamp of chatbot interaction or update	DateTime	8 bytes	No

PetOwnerInteraction

Attribute	Definition	Type	Size	Key
<u>ChatbotID</u>	Unique identifier assigned to the chatbot	Int	8 bytes	Primary, Foreign
<u>PetOwnerID</u>	Unique identifier assigned to the specific pet owner	Int	8 bytes	Primary, Foreign
SupportTicketID	Support ticket's unique	Int	8 bytes	Foreign

	identifier			
MessageText	Messages sent from the pet owner to the chat bot	Text	255 bytes	No
ResponseText	Responses sent from the chatbot to the pet owner	Text	255 bytes	No

Pet

Attribute	Definition	Type	Size	Key
<u>PetID</u>	Unique ID assigned to a specific pet	Int	8 bytes	Primary
<u>ChipID</u>	Unique ID assigned to the pet's chip	Int	8 bytes	Foreign
Name	Pet's name	String	255 bytes	No
Species	The pet's species	String	255 bytes	No
Breed	The pet's breed	String	255 bytes	No
Age	The pet's age	Int	3 bytes	No
Gender	The pet's gender	String	8 bytes	No
Vaccinations	The vaccinations that the pet has gotten	String	255 bytes	No
Weight	The pet's weight	Float	4 bytes	No
Status	Adoption or availability status of the pet	VarChar	50 bytes	No

Chip

Attribute	Definition	Type	Size	Key
<u>ChipID</u>	Unique ID assigned to the pet's chip	Int	8 bytes	Primary
<u>PetID</u>	Unique ID assigned to a specific pet	Int	8 bytes	Foreign
ChipType	Type of chip used	Int	8 bytes	No
ImplantDate	Date when chip was implanted in pet	Date	3 bytes	No
ChipStatus	Current status of pet, such as active, inactive, or expired	VarChar	255 bytes	No

PetOwner

Attribute	Definition	Type	Size	Key
<u>PetOwnerID</u>	Unique ID assigned to the specific pet owner	Int	8 bytes	Primary
<u>PetID</u>	Unique ID assigned to a specific pet	Int	8 bytes	Foreign
FirstName	Pet owners first name	String	255 bytes	No
LastName	Pet owners last name	String	255 bytes	No
Phone	Pet owners phone number	String	10 bytes	No
Email	Pet owners email address	String	255 bytes	No
Address	Pet owners home address	String	255 bytes	No

PetOwnerEvent

Attribute	Definition	Type	Size	Key
<u>PetOwnerID</u>	Unique ID assigned to the specific pet owner	Int	8 bytes	Primary, Foreign
<u>EventID</u>	Unique identifier assigned to the specific event	Int	8 bytes	Primary, Foreign
<u>SignUpDate</u>	The date the pet owner signed up for the event	Date	3 bytes	No
ProblemDescription	The description of any issues	String	255	No
Waitlisted	Whether or not the pet owner is waitlisted for the event	Boolean	1 byte	No

Event

Attribute	Definition	Type	Size	Key
<u>EventID</u>	Unique identifier assigned to the specific event	Int	8 bytes	Primary
Name	The name of the hosted event	String	255 bytes	No
Date	The date of the hosted event	Date	3 bytes	No
StartTime	The start time of the hosted event	Time	5 bytes	No
EndTime	The end time of the hosted event	Time	5 bytes	No
Location	The location the event is taking place	String	255 bytes	No
Type	The type of event being held	String	255 bytes	No
Description	A short description of the event being held	String	255 bytes	No

VolunteerEvent

Attribute	Definition	Type	Size	Key
<u>VolunteerID</u>	A unique identifier for someone who signs up to volunteer	Int	8 bytes	Primary, Foreign
<u>EventID</u>	Unique identifier assigned to the specific event	Int	8 bytes	Primary, Foreign
SignUpDate	The date that the user signed up to volunteer	Date	3 bytes	No
Role	The volunteer's role in the event	String	100	No
ShiftTime	Time the volunteer is set to volunteer	Time	5 bytes	No
CheckedIn	Whether the volunteer has checked in or not	Boolean	1 byte	No
HoursTotal	The total hours worked/completed by the volunteer	Float	4 bytes	No

Volunteer

Attribute	Definition	Type	Size	Key
<u>VolunteerID</u>	A unique identifier for someone who signs up to volunteer	Int	8 bytes	Primary
FirstName	The first name of the volunteer	String	255 bytes	No
LastName	The last name of the volunteer	String	255 bytes	No
Phone	The phone number of the volunteer	String	20 bytes	No
Email	The email address of the volunteer	String	255 bytes	No
Address	The home address of the volunteer	String	255 bytes	No
HoursTotal	The total hours worked/completed by the volunteer	Float	4 bytes	No

AdministratorEvent

Attribute	Definition	Type	Size	Key
<u>AdministratorID</u>	Unique identifier assigned to an administrator	Int	8 bytes	Primary, Foreign
<u>EventID</u>	Unique identifier assigned to the specific event	Int	8 bytes	Primary, Foreign
TimeStamp	The time when the administrator's involvement occurred	DateTime	8 bytes	No

Administrator

<u>Attribute</u>	<u>Definition</u>	<u>Type</u>	<u>Size</u>	<u>Key</u>
<u>EmployeeID</u>	Unique Identifier for Employee	Int	8 bytes	Primary
AdminTitle	Employee's administrative title	String	100 bytes	No

EmployeeEvent

Attribute	Definition	Type	Size	Key
<u>EmployeeID</u>	Unique Identifier for Employee	Int	8 bytes	Primary, Foreign
<u>EventID</u>	Unique identifier assigned to the specific event	Int	8 bytes	Primary, Foreign
TimeStamp	Timestamp of employee activity	DateTime	8 bytes	No

Donor

Attribute	Definition	Type	Size	Key
<u>DonorID</u>	A unique Identifier for a person who is giving a donation	Int	8 bytes	Primary
FirstName	The first name of donor	String	255 bytes	No
LastName	The last name of donor	String	255 bytes	No
Email	The Email Address of donor	String	255 bytes	No
Phone	The phone number of donor	String	15 bytes	No
Address	The home address of donor	String	255 bytes	No

Sponsor

Attribute	Definition	Type	Size	Key
<u>SponsorID</u>	A unique identifier for a donor-sponsorship	Int	8 bytes	Primary
<u>DonorID</u>	A unique Identifier for a person who is giving a donation	Int	8 bytes	Foreign
Date	The date when the donation was given	Date	3 bytes	No
Amount	The total amount of the donation	Decimal	5 bytes	No
PaymentMethod	The payment method used to make donation	String	100 bytes	No
SponsoredPetName	The name of the pet being sponsored by donor	String	255 bytes	No

Donation

Attribute	Definition	Type	Size	Key
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<u>DonationID</u>	Unique identifier assigned to each donation	Int	8 bytes	Primary
<u>DonorID</u>	Unique identifier assigned to each donor	Int	8 bytes	Foreign
Date	The date the donation was made	Date	3 bytes	No
Amount	The amount of money donated	Decimal	5 bytes	No
PaymentMethod	The payment method used to pay for the donation	String	100 bytes	No
Type	The category of donation	String	100 bytes	No
Address	The home address of the donor	String	255 bytes	No

DonorInteraction

Attribute	Definition	Type	Size	Key
<u>ChatbotID</u>	Unique identifier assigned to the chatbot	Int	8 bytes	Primary, Foreign
<u>DonorID</u>	Unique identifier assigned to the donor	Int	8 bytes	Primary, Foreign
<u>SupportTicketID</u>	Unique identifier assigned to the support ticket generated	Int	8 bytes	Foreign

MessageText	Messages sent by the donor to the chatbot	String	255 bytes	No
ResponseText	Responses sent from the chatbot to the donor	String	255 bytes	No

VolunteerInteraction

Attribute	Definition	Type	Size	Key
<u>ChatbotID</u>	Unique identifier for the chatbot used	Int	8 bytes	Primary, Foreign
<u>VolunteerID</u>	Unique identifier assigned to the volunteer	Int	8 bytes	Primary, Foreign
<u>SupportTicketID</u>	Unique identifier assigned to the support ticket generated	Int	8 bytes	Foreign
MessageText	Messages sent from the volunteer to the chatbot	String	255 bytes	No
ResponseText	Responses sent from the chatbot to the volunteer	String	255 bytes	No

Employee

Attribute	Definition	Type	Size	Key
<u>EmployeeID</u>	Unique Identifier for Employee	Int	8 bytes	Primary
FirstName	The Employee's First Name	String	255 bytes	No
LastName	The Employee's last name	String	255 bytes	No
Phone	The Employee's phone number	String	15 bytes	No
Email	The employee's address	String	255 bytes	No
Address	The employee's home address	String	255 bytes	No
JobTitle	The employee's job title in company	String	100 bytes	No
EmplsAdmin	Displays employee's administrative access. Determines subtype relationship	Boolean	1 byte	No