Solution: Create a One-to-Many Relationship

In this lesson, we will look at how we created the one-to-many relationship described in the challenge.

WE'LL COVER THE FOLLOWING

- Solution
- Explanation

Solution

```
"""Flask Application for Paws Rescue Center."""
from flask import Flask, render_template, abort
from forms import SignUpForm, LoginForm
from flask import session, redirect, url_for
from flask_sqlalchemy import SQLAlchemy

app = Flask(__name__)
app.config['SECRET_KEY'] = 'dfewfew123213rwdsgert34tgfd1234trgf'
app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:///paws.db'
db = SQLAlchemy(app)

"""Model for Pets."""
class Pet(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    name = db.Column(db.String, unique=True)
    age = db.Column(db.String)
    bio = db.Column(db.String)
    posted_by =  db.Column(db.String, db.ForeignKey('user.id'))


"""Model for Users."""
class User(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    full_name = db.Column(db.String)
    email = db.Column(db.String, unique=True)
    password = db.Column(db.String)
    pets = db.relationship('Pet', backref = 'user')

db.create_all()

"""Information regarding the Pets in the System."""
pets = [
            {"id": 1, "name": "Nelly", "age": "5 weeks", "bio": "I am a tiny kitten rescued b
            {"id": 2, "name": "Yuki", "age": "8 months", "bio": "I am a handsome gentle-cat.
            {"id": 3, "name": "Basker", "age": "1 year", "bio": "I love barking. But, I love
```

```
            {"id": 4, "name": "Mr. Furrkins", "age": "5 years", "bio": "Probably napping."},
        ]

"""Information regarding the Users in the System."""
users = [
            {"id": 1, "full_name": "Pet Rescue Team", "email": "team@pawsrescue.co", "passwor
        ]

@app.route("/")
def homepage():
    """View function for Home Page."""
    return render_template("home.html", pets = pets)


@app.route("/about")
def about():
    """View function for About Page."""
    return render_template("about.html")


@app.route("/details/<int:pet_id>")
def pet_details(pet_id):
    """View function for Showing Details of Each Pet."""
    pet = next((pet for pet in pets if pet["id"] == pet_id), None)
    if pet is None:
        abort(404, description="No Pet was Found with the given ID")
    return render_template("details.html", pet = pet)


@app.route("/signup", methods=["POST", "GET"])
def signup():
    """View function for Showing Details of Each Pet."""
    form = SignUpForm()
    if form.validate_on_submit():
        new_user = {"id": len(users)+1, "full_name": form.full_name.data, "email": form.email
        users.append(new_user)
        return render_template("signup.html", message = "Successfully signed up")
    return render_template("signup.html", form = form)


@app.route("/login", methods=["POST", "GET"])
def login():
    form = LoginForm()
    if form.validate_on_submit():
        user = next((user for user in users if user["email"] == form.email.data and user["pas
        if user is None:
            return render_template("login.html", form = form, message = "Wrong Credentials. P
        else:
            session['user'] = user
            return render_template("login.html", message = "Successfully Logged In!")
    return render_template("login.html", form = form)

@app.route("/logout")
def logout():
    if 'user' in session:
        session.pop('user')
    return redirect(url_for('homepage', _scheme='https', _external=True))

if __name__ == "__main__":
    app.run(debug=True, host="0.0.0.0", port=3000)
```

Explanation

In this challenge, we were tasked with creating a **one-to-many** relationship between the `Pet` and `User` models. This relationship should indicate that a **pet** can only be posted by one **user**. However, a **user** can post multiple **pets**. To solve this challenge, we used the following steps:

1. First, we created a `ForiegnKey()` column in the model that only has **one** instance of the other model associated with it. In our case, this was the `Pet` model. So, we created this column in **line 18** and called it `posted_by`. It should contain the `user.id` as the `ForeignKey()`.
2. Then, in the `User` model, we created a `relationship()` in **line 27**. We created this relationship with the `Pet` model and also created a `backref` with the name `user`. This back-reference will enable us to point to a row in `User` by using `pet.user`.

And that's it. We just created a **one-to-many** relationship in our project!

Well done on solving these challenges!

Now, let's move on to the next chapter and learn how to insert, retrieve, update, and delete data from the database.