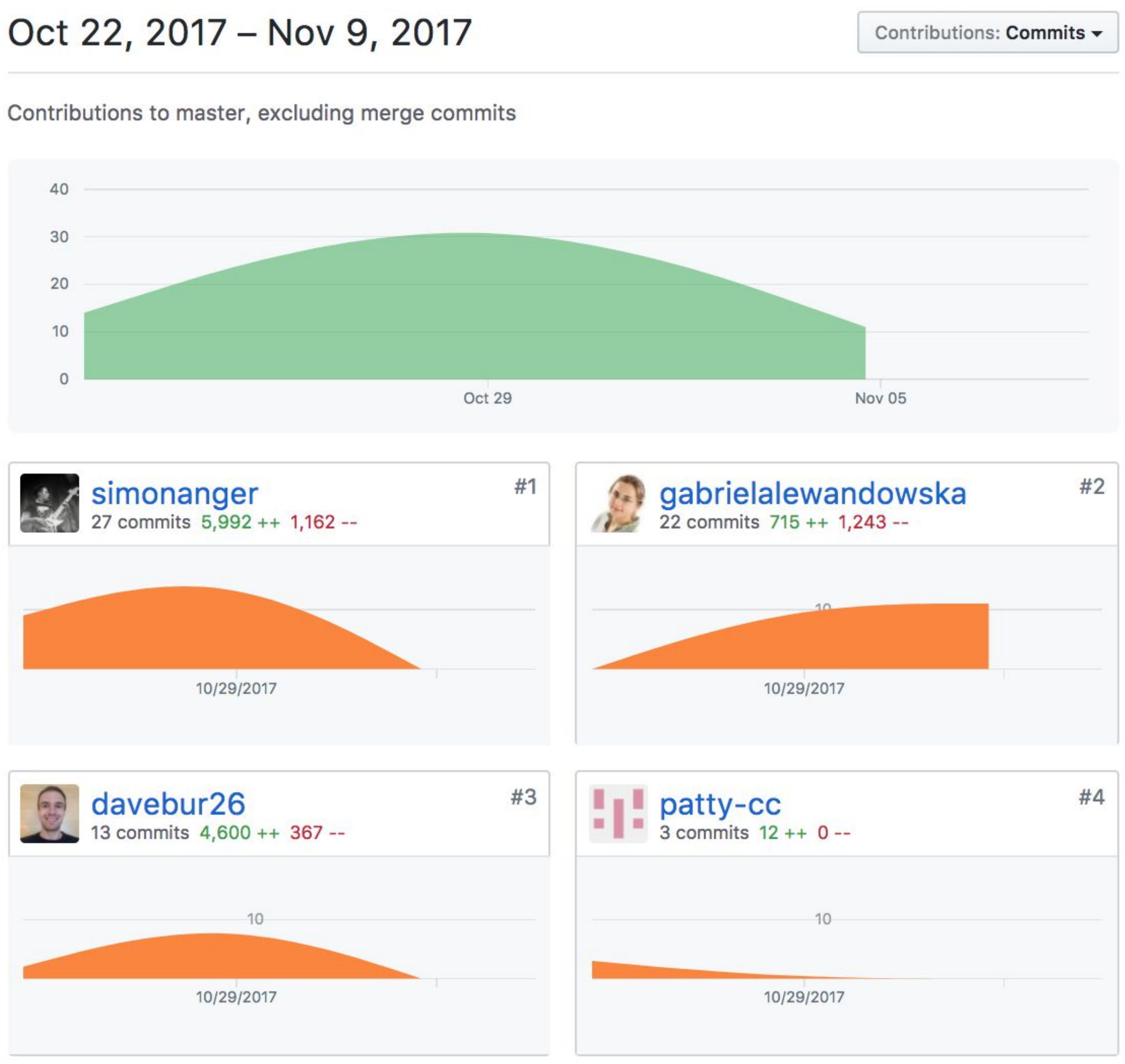
Evidence for Project Unit

Gabriela Lewandowska
Cohort E15
23/11/2017

P- 1 Github Contributors page


Oct 22, 2017 – Nov 9, 2017

Contributions: Commits

Contributions to master, excluding merge commits

simonanger #1
27 commits 5,992 ++ 1,162 --

gabrielalewandowska #2
22 commits 715 ++ 1,243 --

davebur26 #3
13 commits 4,600 ++ 367 --

patty-cc #4
3 commits 12 ++ 0 --

P- 2 Project Brief

Educational App

The BBC are looking to improve their online offering of educational content by developing some interactive apps that display information in a fun and interesting way.

Your task is to make an MVP to put forward to them - this may only be for a small set of information, and may only showcase some of the features to be included in the final app. You might use an API to bring in content or a database to store facts. The topic of the app is your choice, but here are some suggestions you could look into:

- Interactive timeline, e.g. of the history of computer programming
- Interactive map of a historical event - e.g. World War 1, the travels of Christopher Columbus

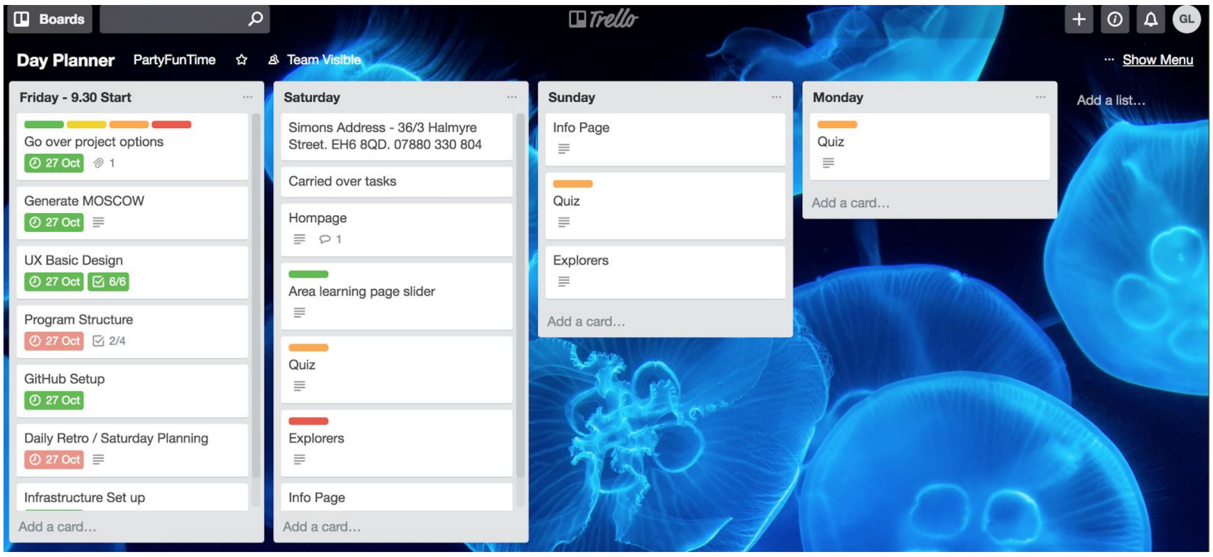
MVP

- Display some information about a particular topic in an interesting way
- Have some user interactivity using event listeners, e.g to move through different sections of content

Some samples of existing apps for inspiration:

- http://chemistryset.chemheritage.org/#/
- http://www.royalmailheritage.com/main.php
- http://education.iceandsky.com/
- http://histography.io - may only work in Safari
- http://worldpopulationhistory.org/map/1838/mercator/1/0/24/

P-3 Use of Trello



Day Planner PartyFunTime

Friday - 9.30 Start
- Go over project options — 27 Oct — 1
- Generate MOSCOW — 27 Oct
- UX Basic Design — 27 Oct — 6/6
- Program Structure — 27 Oct — 2/4
- GitHub Setup — 27 Oct
- Daily Retro / Saturday Planning — 27 Oct
- Infrastructure Set up
- Add a card...

Saturday
- Simons Address - 36/3 Halmyre Street. EH6 8QD. 07880 330 804
- Carried over tasks
- Hompage — 1
- Area learning page slider
- Quiz
- Explorers
- Info Page
- Add a card...

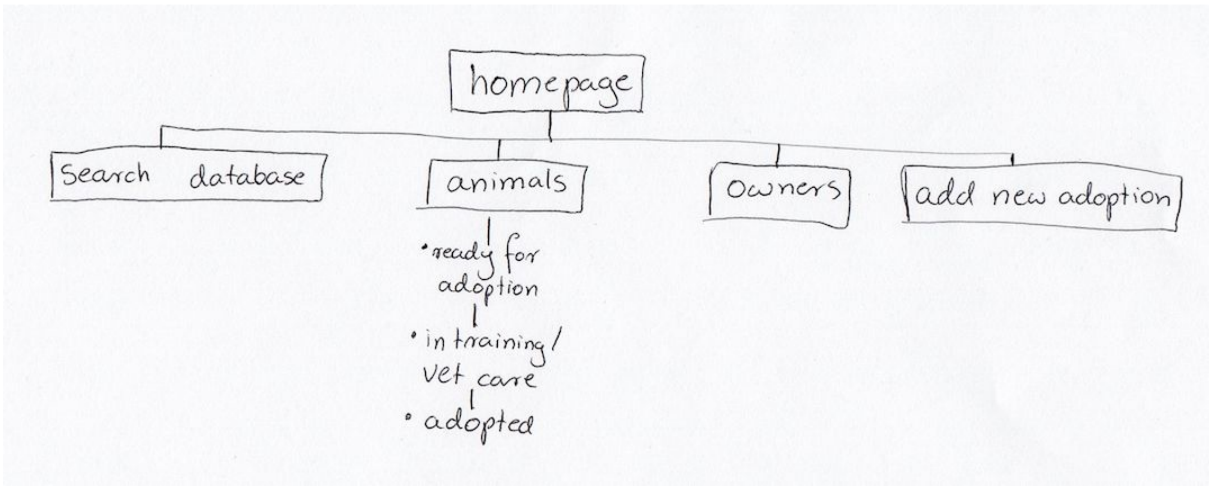
Sunday
- Info Page
- Quiz
- Explorers
- Add a card...

Monday
- Quiz
- Add a card...

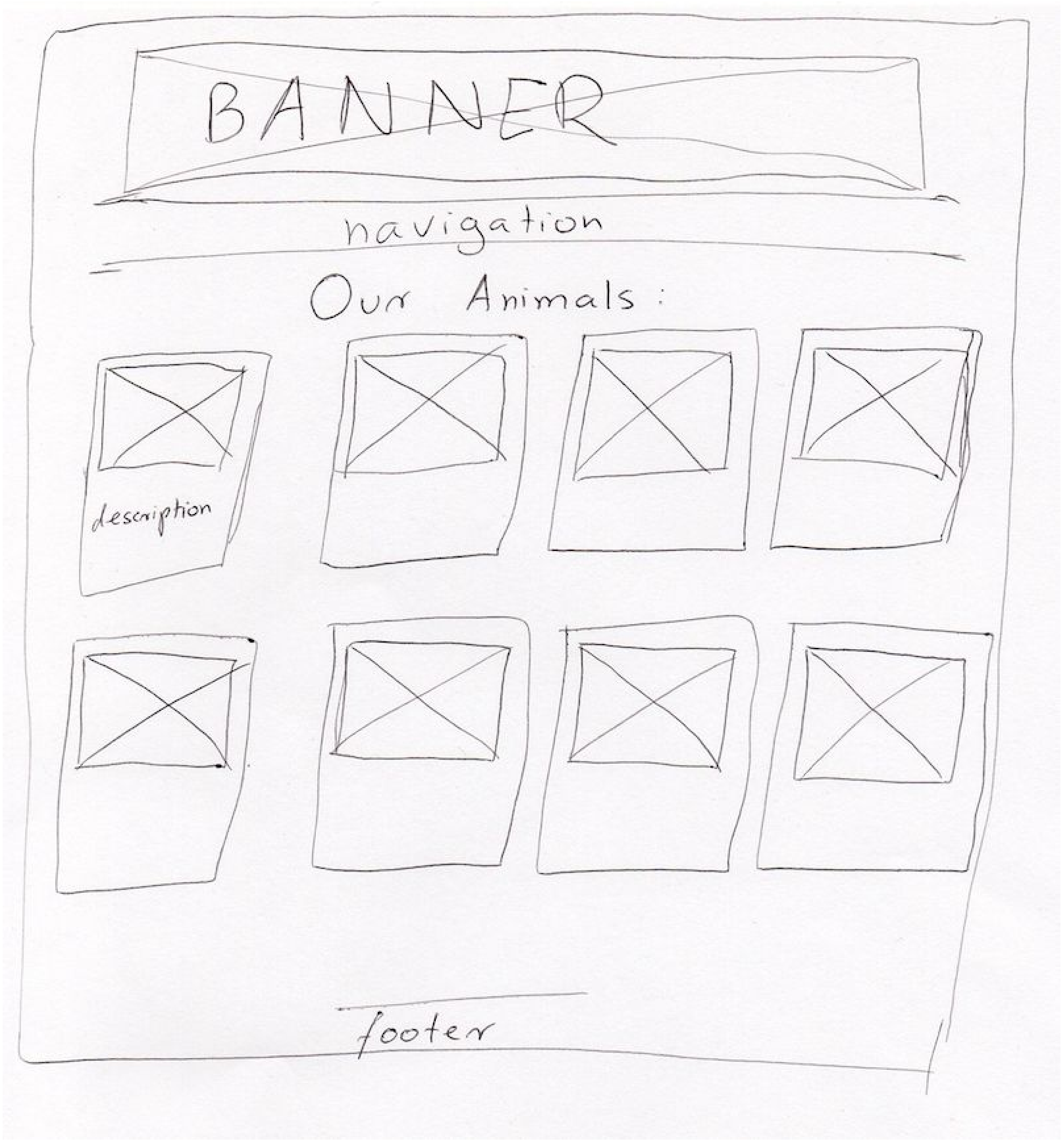
P-4 Acceptance Criteria

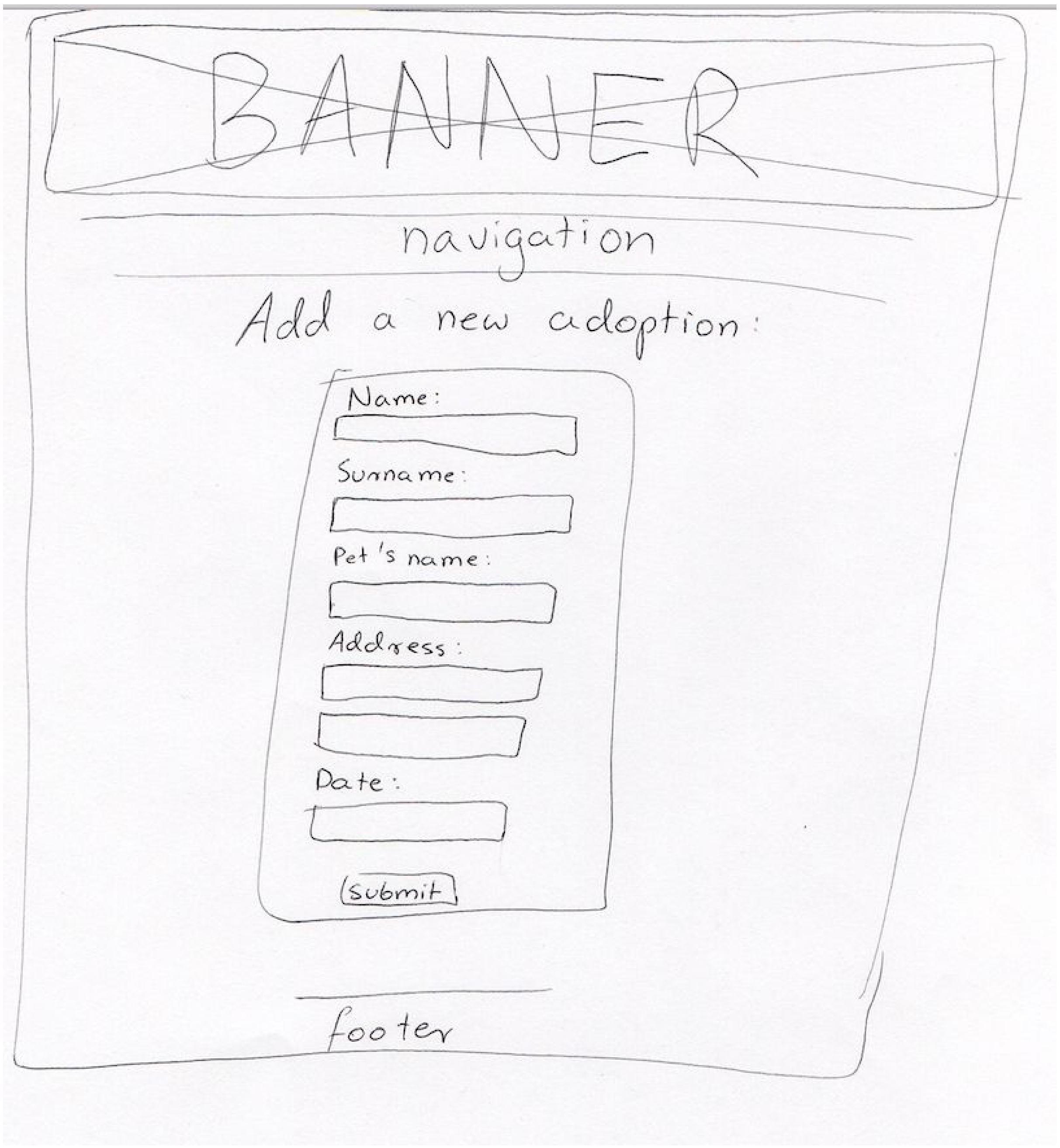
Acceptance Criteria	Expected Result	Pass/Fail
User can select a date from a date picker.	**Calendar is displayed when user presses the button.**	**Pass**
User can select available foods from the database.	**A list of food item appears when user presses the spinner.**	**Pass**
User can enter the quantity.	**A number keyboard appears when user taps on the input field.**	**Pass**
User can save the information to the database.	**Information is saved when the user presses the "save" button.**	**Pass**
User receives a confirmation that the information has been saved to the database.	**A toast saying "Entry saved!" appears when entry has been saved.**	**Pass**
User can navigate between activities.	**A navigation drawer appears when users taps on the hamburger in the upper left corner.**	**Pass**

P-5 User sitemap



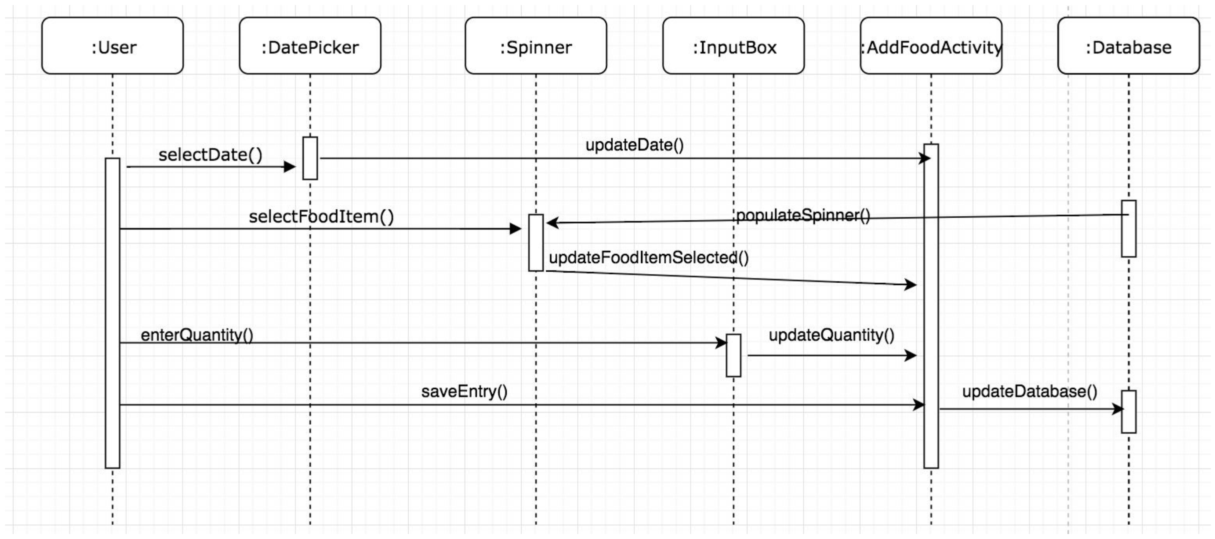
P-6 Wireframes designs



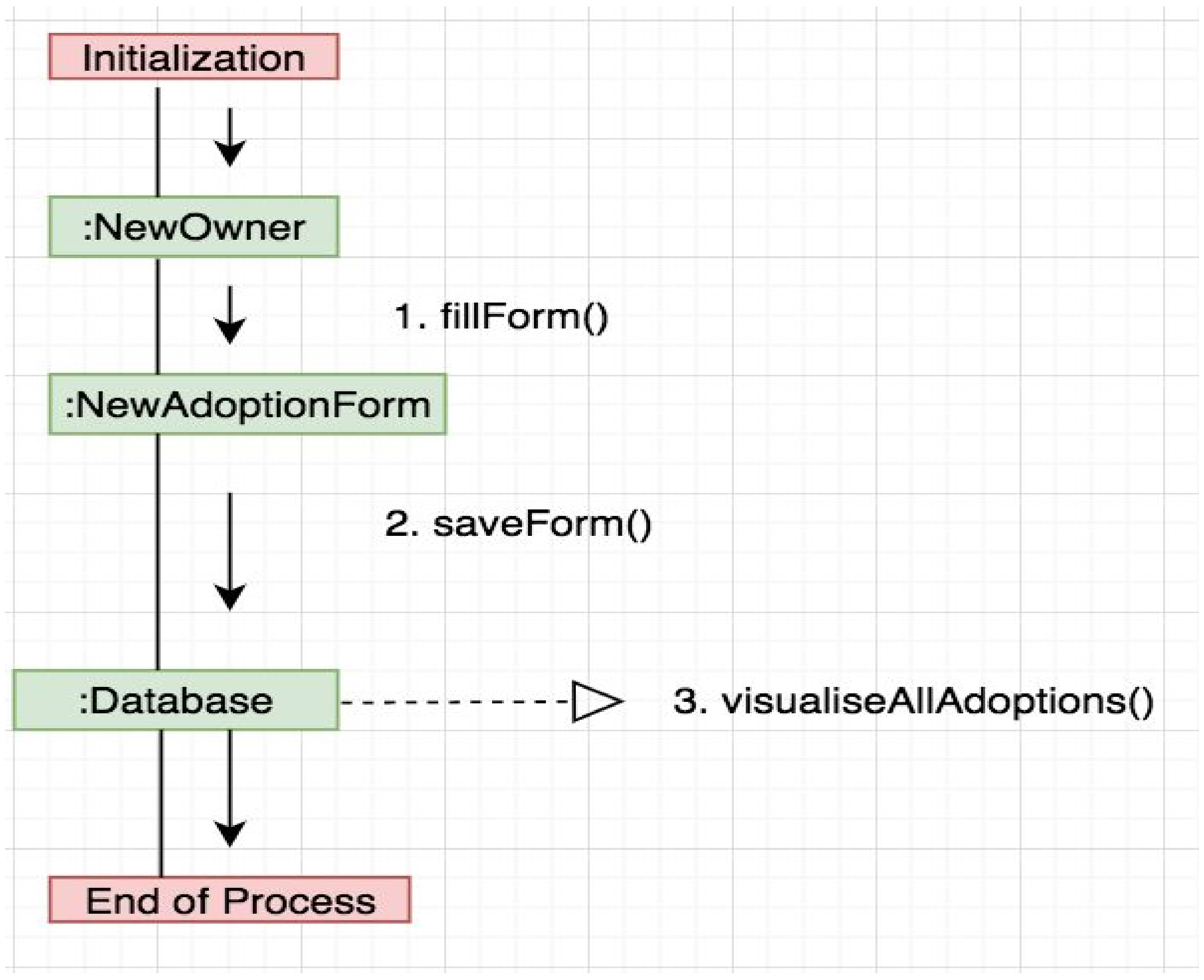

BANNER
navigation
Add a new adoption:
Name:
Surname:
Pet's name:
Address:
Date:
submit
footer

P-7 System interactions diagrams

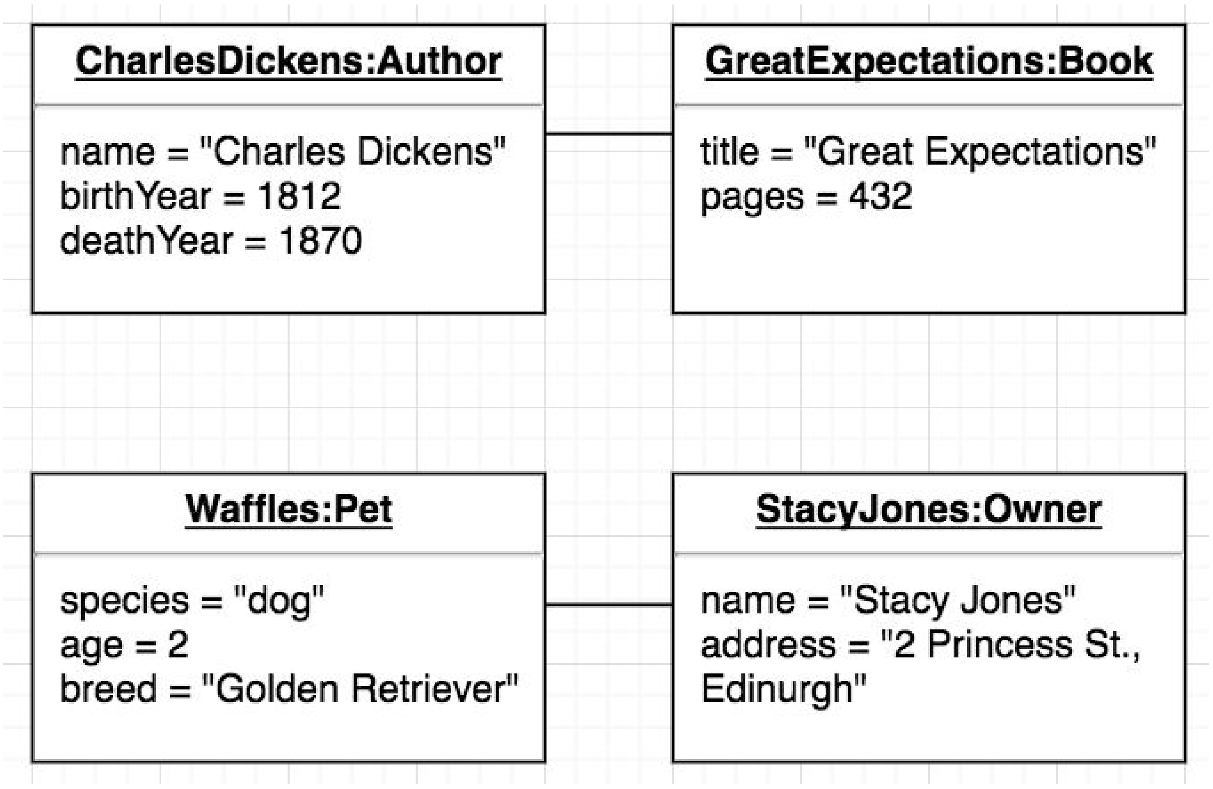
A. Sequence diagram



B. Collaboration Diagram

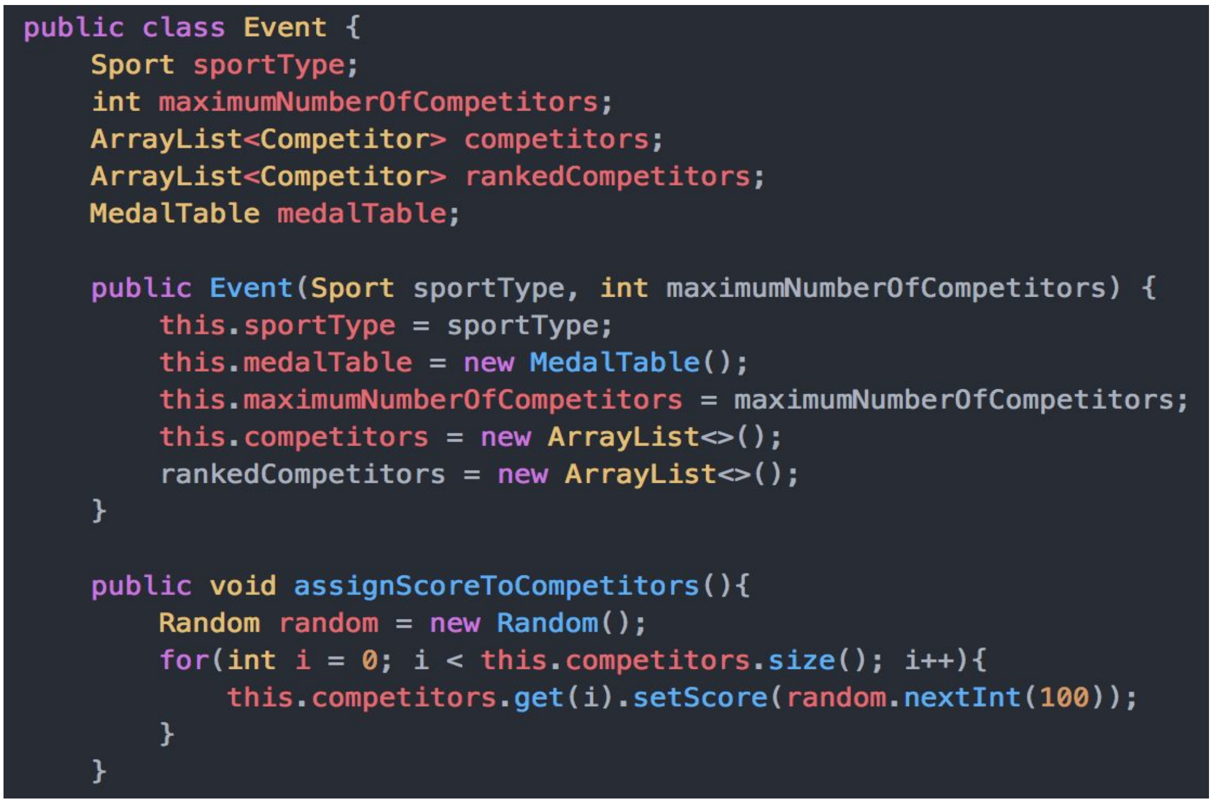


P-8 Two Object Diagrams



P- 9 Choice of two algorithms (find the algorithms on a program you might have written, show the code you have used.)

1. **Algorithm for assigning a random score.**



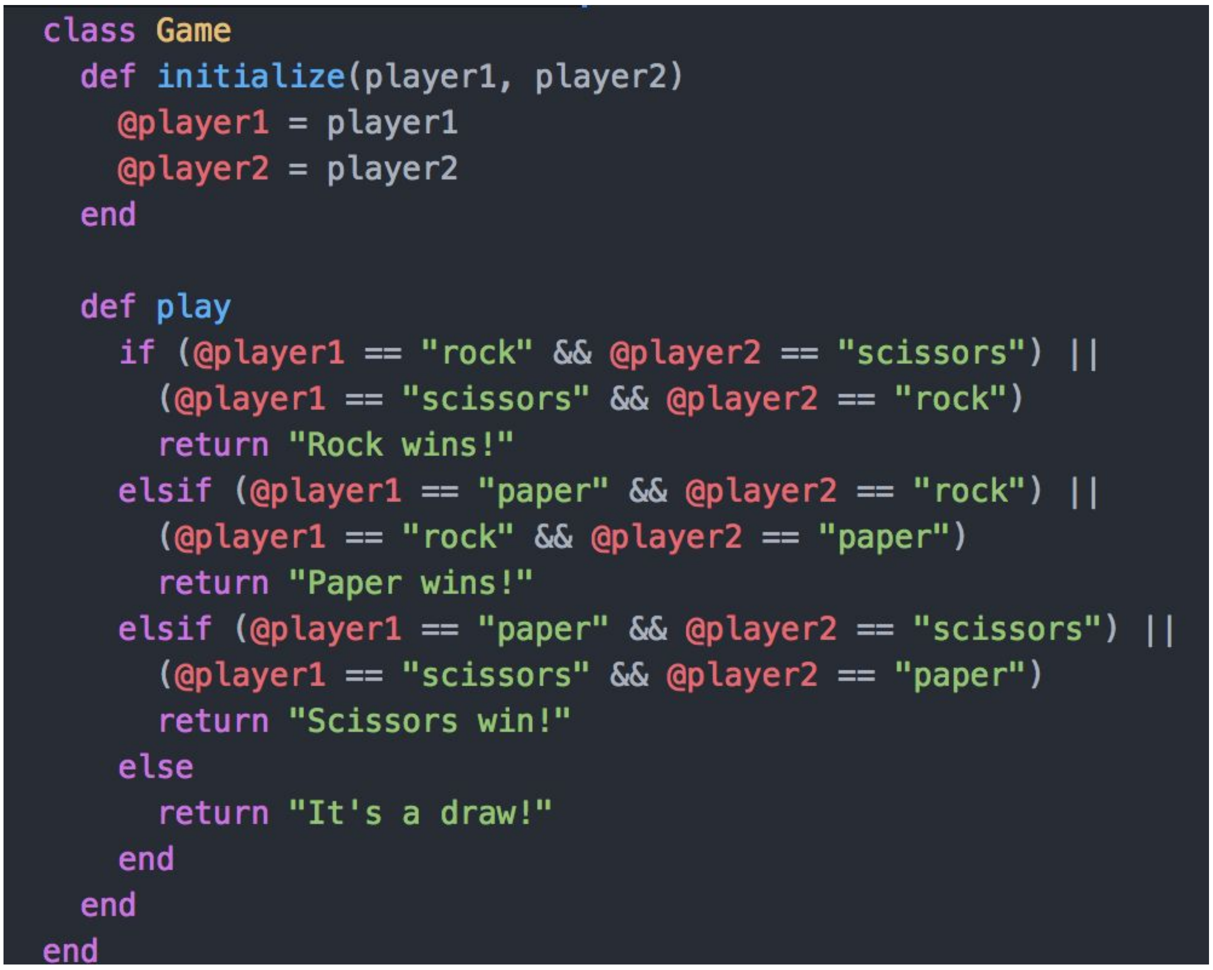
```java
public class Event {
    Sport sportType;
    int maximumNumberOfCompetitors;
    ArrayList<Competitor> competitors;
    ArrayList<Competitor> rankedCompetitors;
    MedalTable medalTable;

    public Event(Sport sportType, int maximumNumberOfCompetitors) {
        this.sportType = sportType;
        this.medalTable = new MedalTable();
        this.maximumNumberOfCompetitors = maximumNumberOfCompetitors;
        this.competitors = new ArrayList<>();
        rankedCompetitors = new ArrayList<>();
    }

    public void assignScoreToCompetitors(){
        Random random = new Random();
        for(int i = 0; i < this.competitors.size(); i++){
            this.competitors.get(i).setScore(random.nextInt(100));
        }
    }
```

The above algorithm loops through all competitors added to an event and assigns them a random score which is an integer between 0 and 100. I decided to use that algorithm to help me model Olympic Games in Java. I had to write it since, unlike some other programming languages, Java does not have an in-built method for generating random numbers.

2. Algorithm determining the winner of a Rock Paper Scissors game.

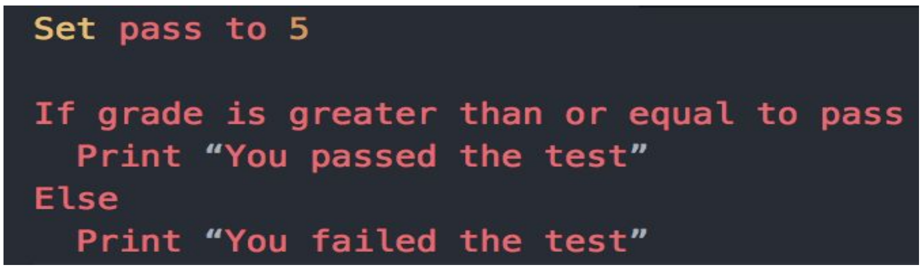


```ruby
class Game
  def initialize(player1, player2)
    @player1 = player1
    @player2 = player2
  end

  def play
    if (@player1 == "rock" && @player2 == "scissors") ||
      (@player1 == "scissors" && @player2 == "rock")
      return "Rock wins!"
    elsif (@player1 == "paper" && @player2 == "rock") ||
      (@player1 == "rock" && @player2 == "paper")
      return "Paper wins!"
    elsif (@player1 == "paper" && @player2 == "scissors") ||
      (@player1 == "scissors" && @player2 == "paper")
      return "Scissors win!"
    else
      return "It's a draw!"
    end
  end
end
```

The above algorithm checks all possible outcomes of a Rock Paper Scissors Game. I decided to use it to determine who the winner would be in each case.

P - 10 Example of Pseudocode

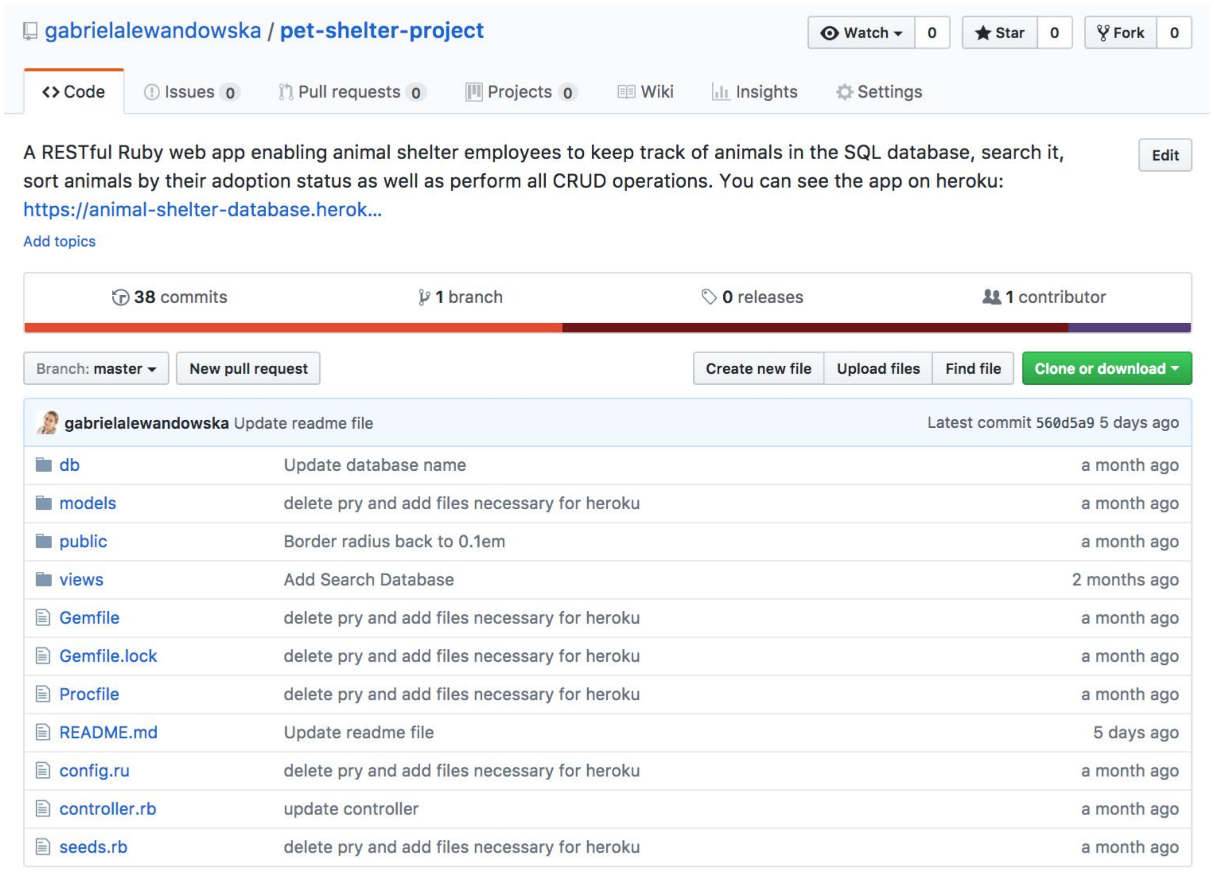


```
Set pass to 5

If grade is greater than or equal to pass
  Print “You passed the test”
Else
  Print “You failed the test”
```

P - 11 Github link to one of your projects

https://github.com/gabrielalewandowska/pet-shelter-project

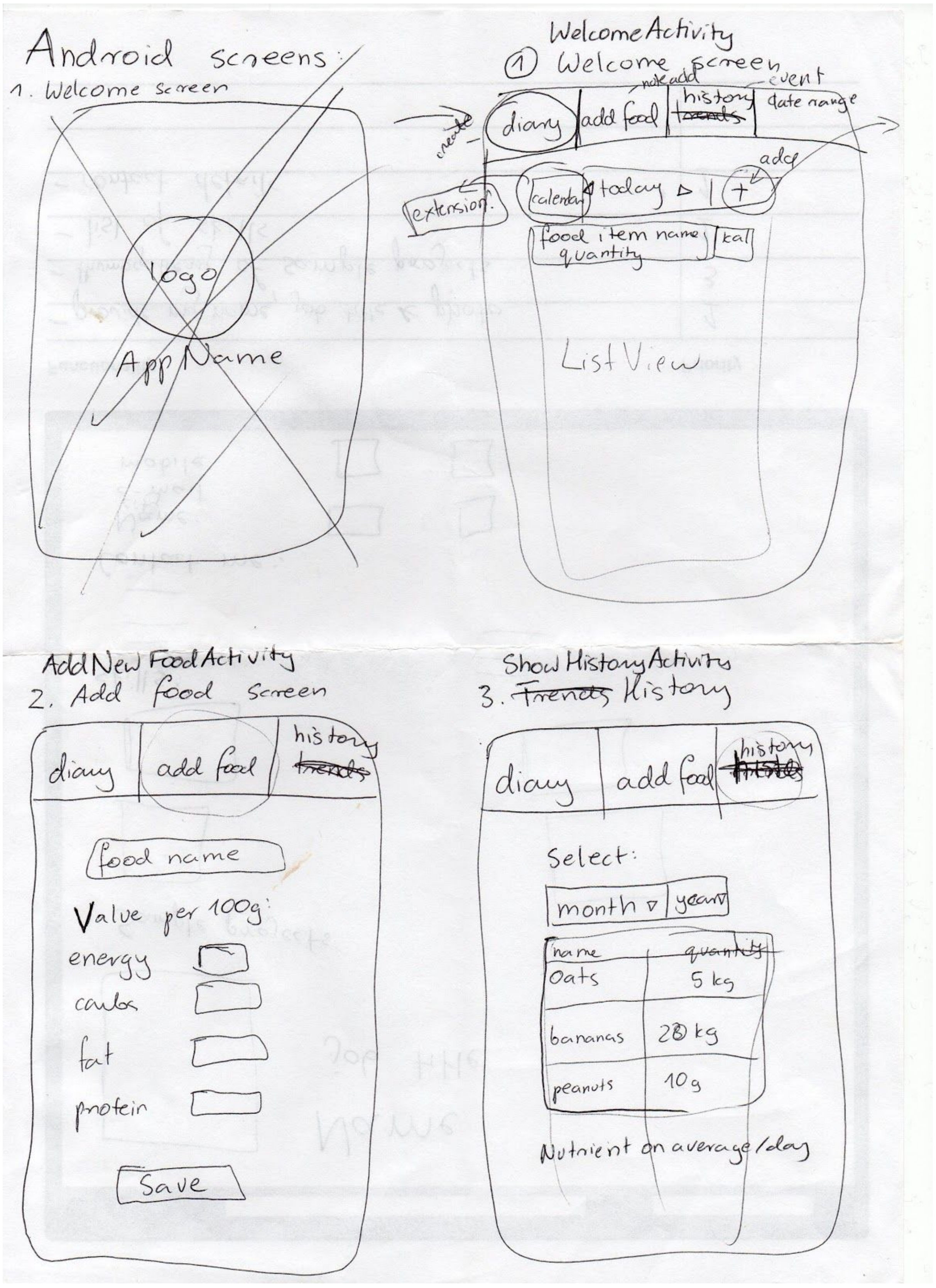


A RESTful Ruby web app enabling animal shelter employees to keep track of animals in the SQL database, search it, sort animals by their adoption status as well as perform all CRUD operations. You can see the app on heroku: https://animal-shelter-database.herok...

gabrielalewandowska Update readme file — Latest commit 560d5a9 5 days ago

db	Update database name	a month ago
models	delete pry and add files necessary for heroku	a month ago
public	Border radius back to 0.1em	a month ago
views	Add Search Database	2 months ago
Gemfile	delete pry and add files necessary for heroku	a month ago
Gemfile.lock	delete pry and add files necessary for heroku	a month ago
Procfile	delete pry and add files necessary for heroku	a month ago
README.md	Update readme file	5 days ago
config.ru	delete pry and add files necessary for heroku	a month ago
controller.rb	update controller	a month ago
seeds.rb	delete pry and add files necessary for heroku	a month ago

P - 12 Screenshot of your planning and the different stages of development to show changes.



Java classes:

① DBHelper which extends SQLiteOpenHelper
② ~~Nutrient~~
③ FoodItem
– ~~FoodList~~
④ Day
⑤ Month

Interfaces?

Enums
* Month Name enum
* NutrientName enum (fat, carbs, B12 ....)

② ~~Nutrient~~
~~– HashMap < NutrientName, double >~~

③ FoodItem
· name
· ~~kcal~~
· ~~carbs~~
· ~~fat~~
· ~~protein~~

~~table2 entry~~

• name String
• HashMap <NutrientName, double –quantity> nutrients
• ~~ArrayList <Nutrient>~~
• ~~quantity int~~

getters + setters

n
~~FoodList~~
~~ArrayList <FoodItem>~~
~~· HashMap <FoodItem, int> quantity~~

Methods:
– add new food item = table 1 entry
– add new food eaten = table 2 entry
– set up HashMap of nutrients
① loop through Nutrient enum
② get value (quantity) from DB

Java classes - part 2

④

Day

- Date date
- ~~ArrayList<FoodItem>~~ ? HashMap<FoodItem, ~~int~~ Integer> quantity

methods:
- calculate cal / fat / carbs

⑤

Month

– will be used in 3. screen "History" to generate an overview of a particular month

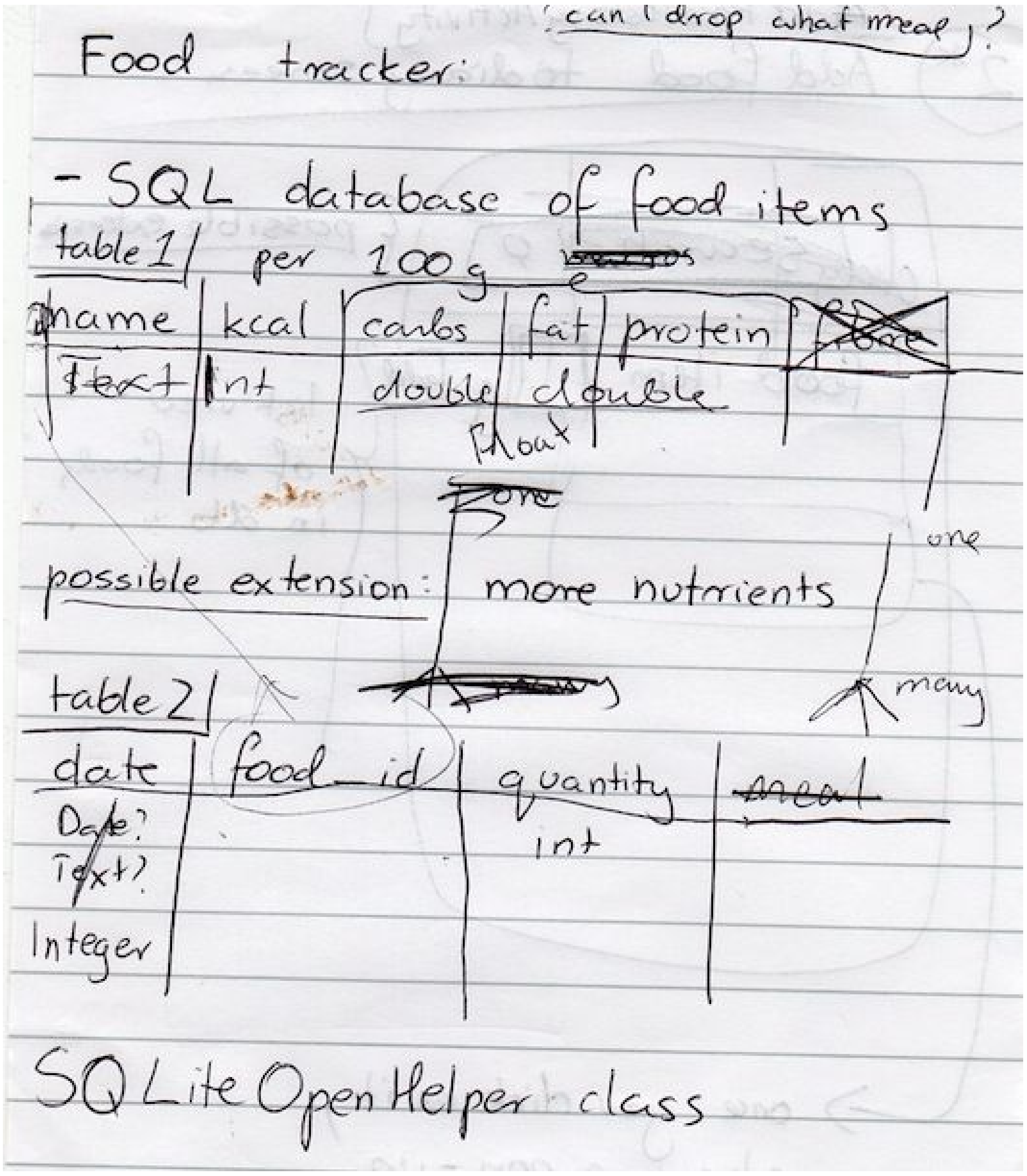
- year int
- MonthName (enum)
- ArrayList <FoodItem)
- ArrayList <Day>

methods:
- generateArrayListOfAllFoods

① loop through all food types eaten in a given month

② sum up quantities

③ possibly convert g into kg



can I drop what meal ?

Food tracker:

- SQL database of food items

table 1 / per 100 g ~~[illegible]~~

name	kcal	carbs	fat	protein	~~one~~
~~Text~~	int	double	double		
		Float			

~~one~~ one

possible extension: more nutrients

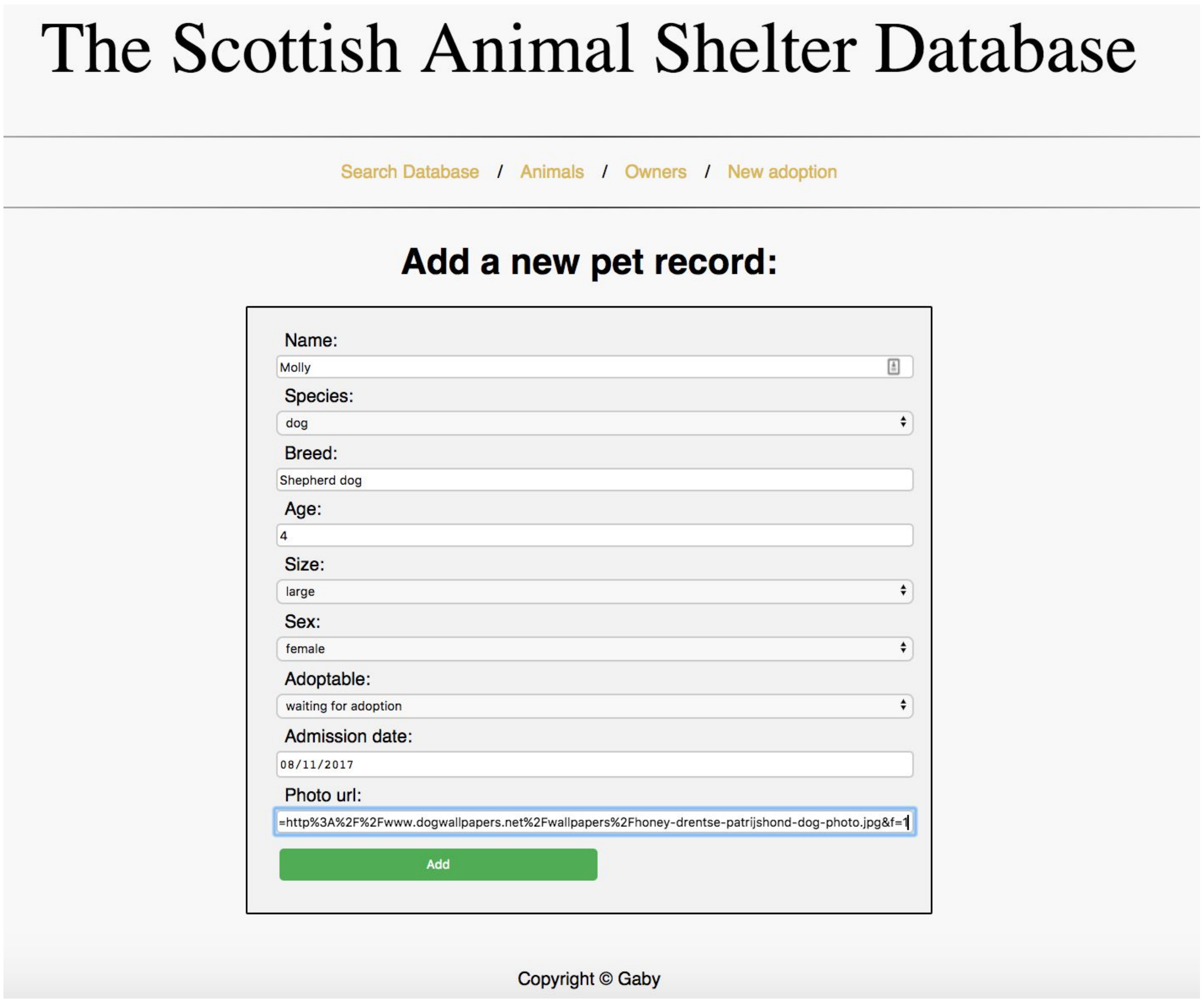
~~many~~ many

table 2 /

date	food_id	quantity	~~meal~~
~~Date?~~		int	
~~Text?~~			
Integer			

SQLite OpenHelper class

P - 13 User input



The Scottish Animal Shelter Database

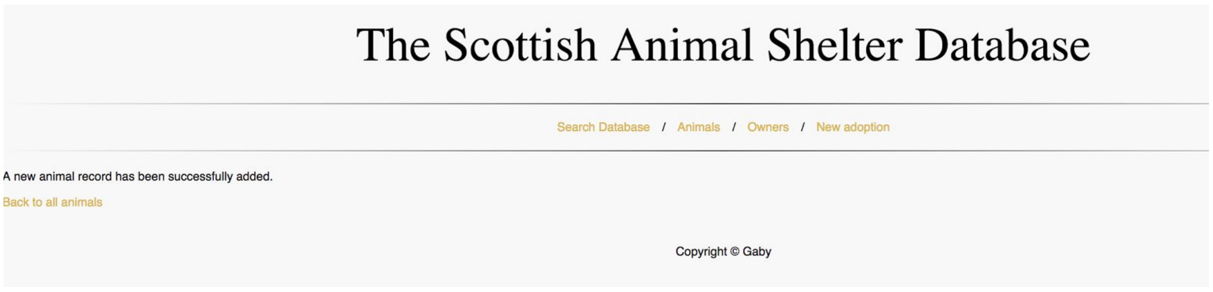
Search Database / Animals / Owners / New adoption

Add a new pet record:

Name:	Molly
Species:	dog
Breed:	Shepherd dog
Age:	4
Size:	large
Sex:	female
Adoptable:	waiting for adoption
Admission date:	08/11/2017
Photo url:	=http%3A%2F%2Fwww.dogwallpapers.net%2Fwallpapers%2Fhoney-drentse-patrijshond-dog-photo.jpg&f=1

Add

Copyright © Gaby



The Scottish Animal Shelter Database

Search Database / Animals / Owners / New adoption

A new animal record has been successfully added.

Back to all animals

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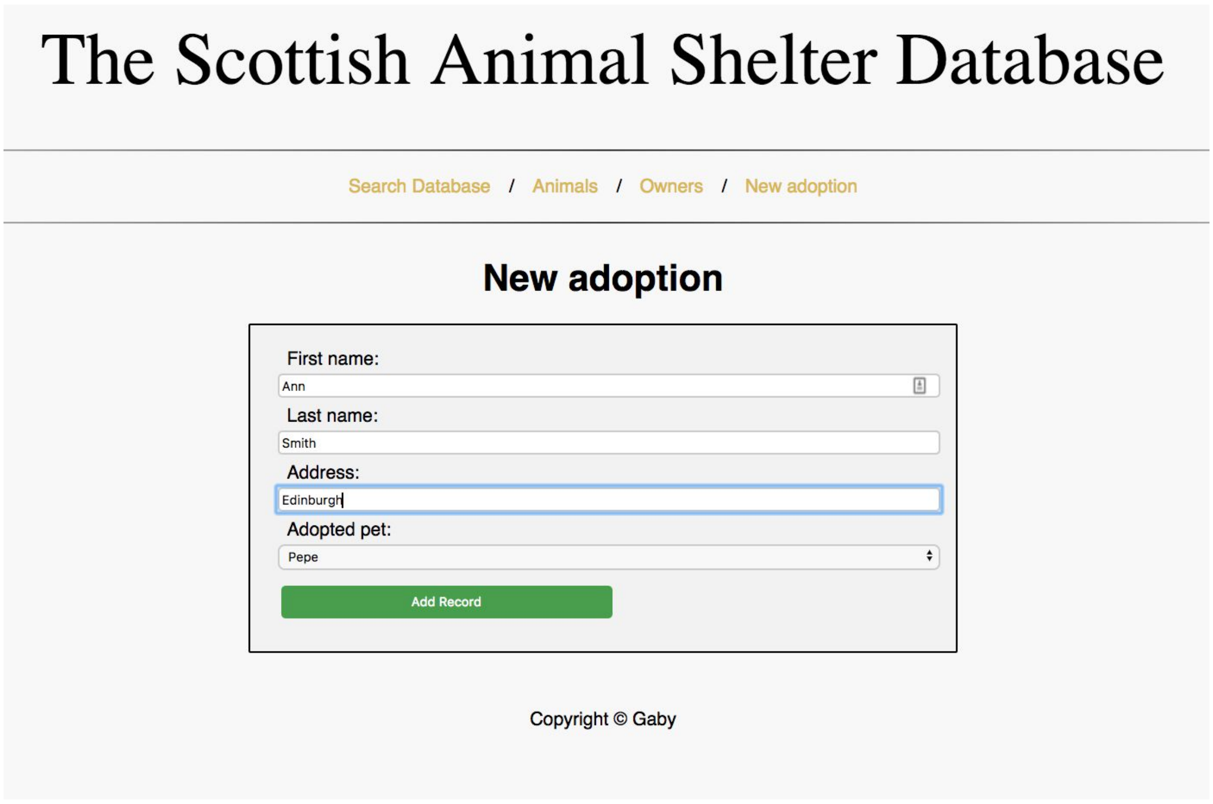
P - 14 Interaction with data persistence



The Scottish Animal Shelter Database

Search Database / Animals / Owners / New adoption

New adoption

First name: Ann

Last name: Smith

Address: Edinburgh

Adopted pet: Pepe

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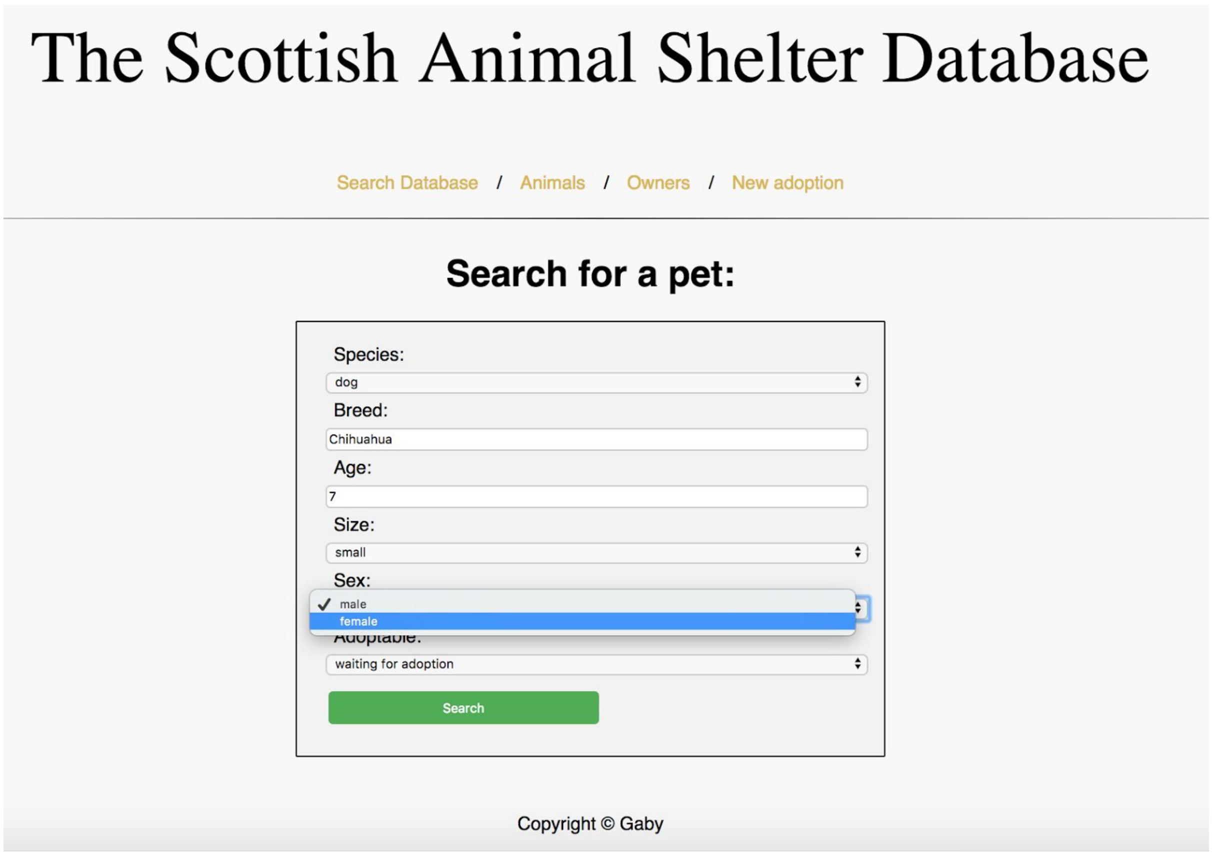
P - 15 User output result



The Scottish Animal Shelter Database

Search Database / Animals / Owners / New adoption

Search for a pet:

Species: dog

Breed: Chihuahua

Age: 7

Size: small

Sex: ✓ male / female

Adoptable: waiting for adoption

Search

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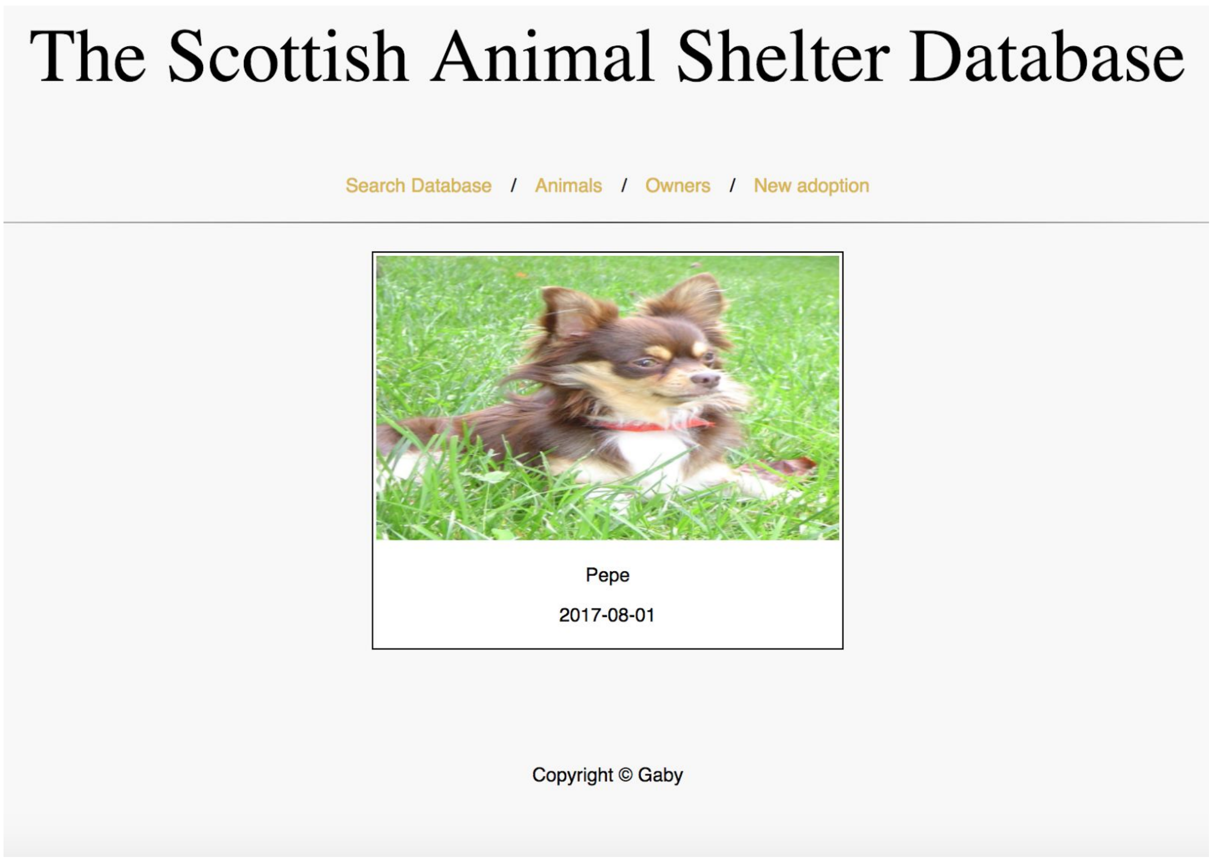

The Scottish Animal Shelter Database

Search Database / Animals / Owners / New adoption

Pepe

2017-08-01

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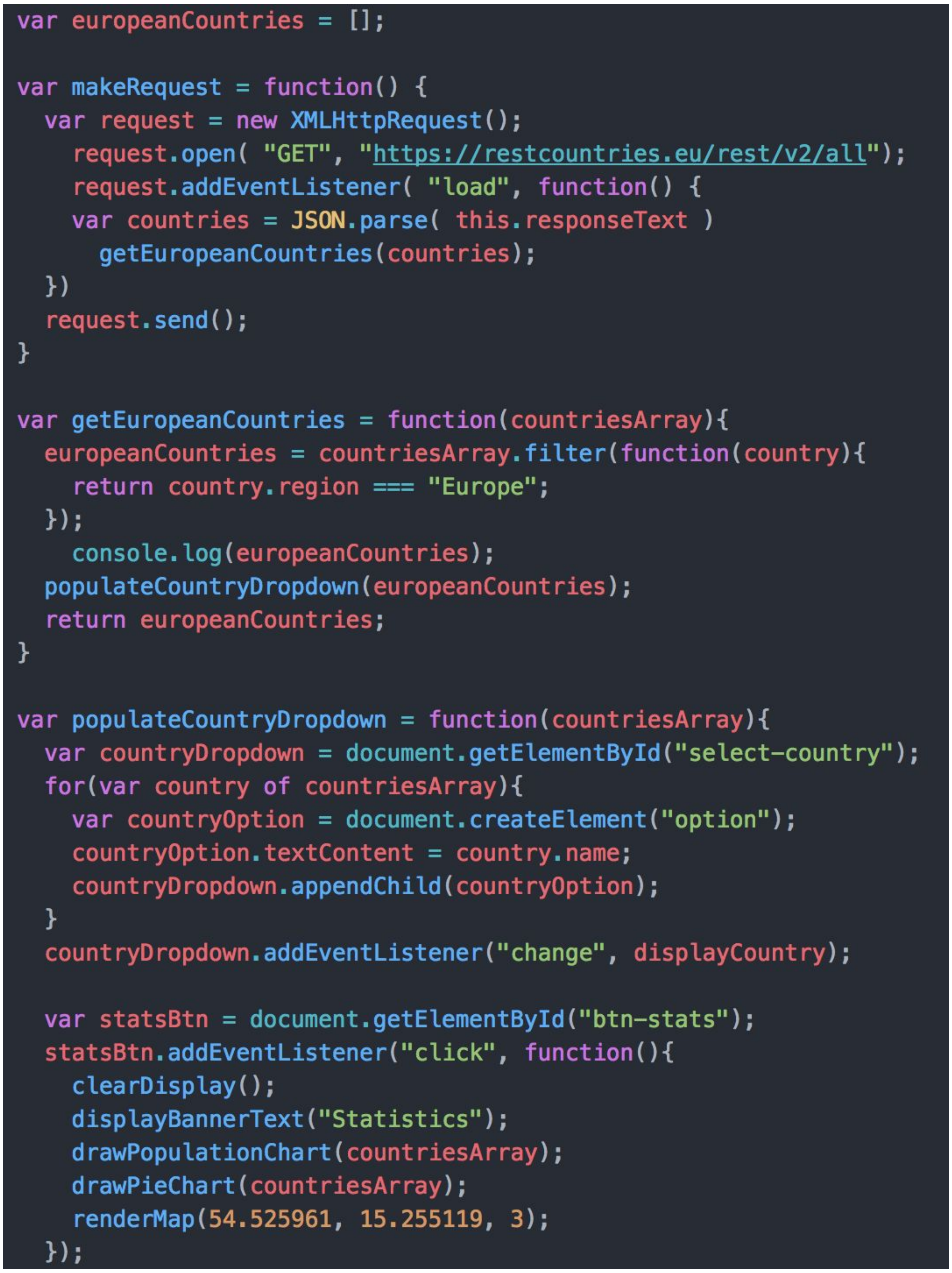
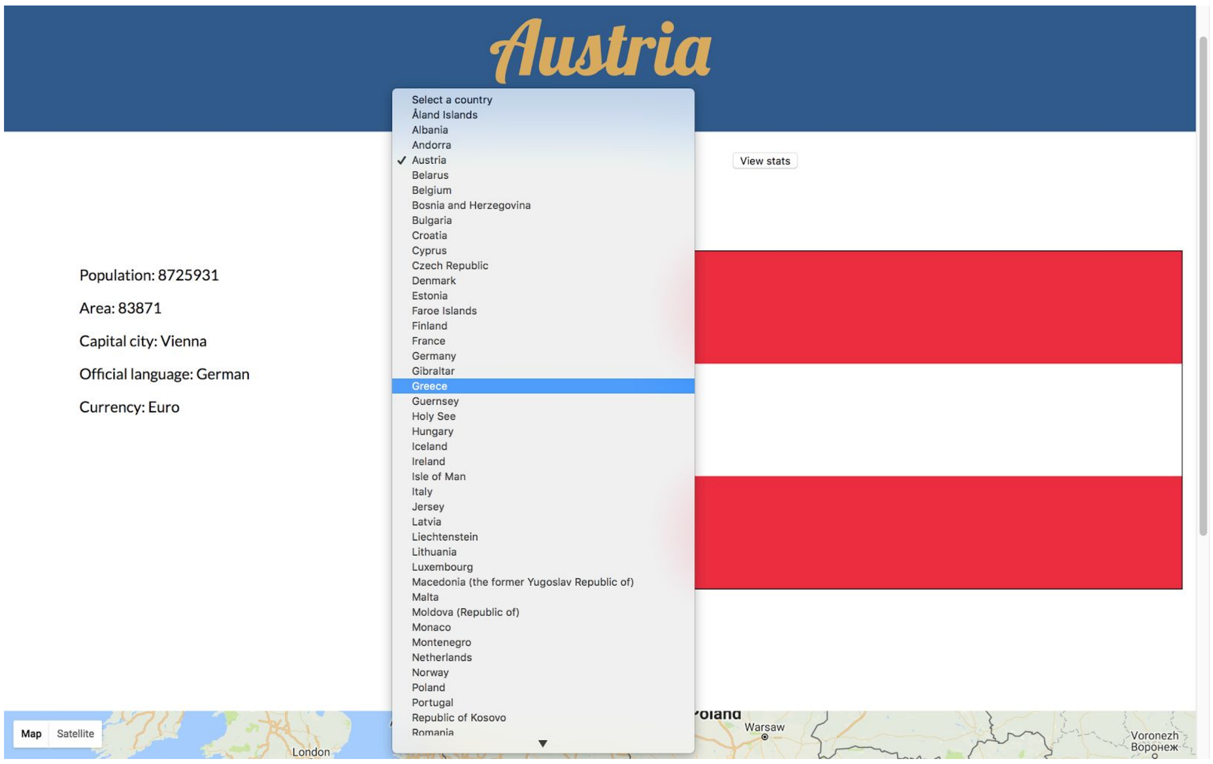
P-16 An example of API used in a program



```
var europeanCountries = [];

var makeRequest = function() {
  var request = new XMLHttpRequest();
    request.open( "GET", "https://restcountries.eu/rest/v2/all");
    request.addEventListener( "load", function() {
    var countries = JSON.parse( this.responseText )
      getEuropeanCountries(countries);
  })
  request.send();
}

var getEuropeanCountries = function(countriesArray){
  europeanCountries = countriesArray.filter(function(country){
    return country.region === "Europe";
  });
    console.log(europeanCountries);
  populateCountryDropdown(europeanCountries);
  return europeanCountries;
}

var populateCountryDropdown = function(countriesArray){
  var countryDropdown = document.getElementById("select-country");
  for(var country of countriesArray){
    var countryOption = document.createElement("option");
    countryOption.textContent = country.name;
    countryDropdown.appendChild(countryOption);
  }
  countryDropdown.addEventListener("change", displayCountry);

  var statsBtn = document.getElementById("btn-stats");
  statsBtn.addEventListener("click", function(){
    clearDisplay();
    displayBannerText("Statistics");
    drawPopulationChart(countriesArray);
    drawPieChart(countriesArray);
    renderMap(54.525961, 15.255119, 3);
  });
```



Population: 8725931

Area: 83871

Capital city: Vienna

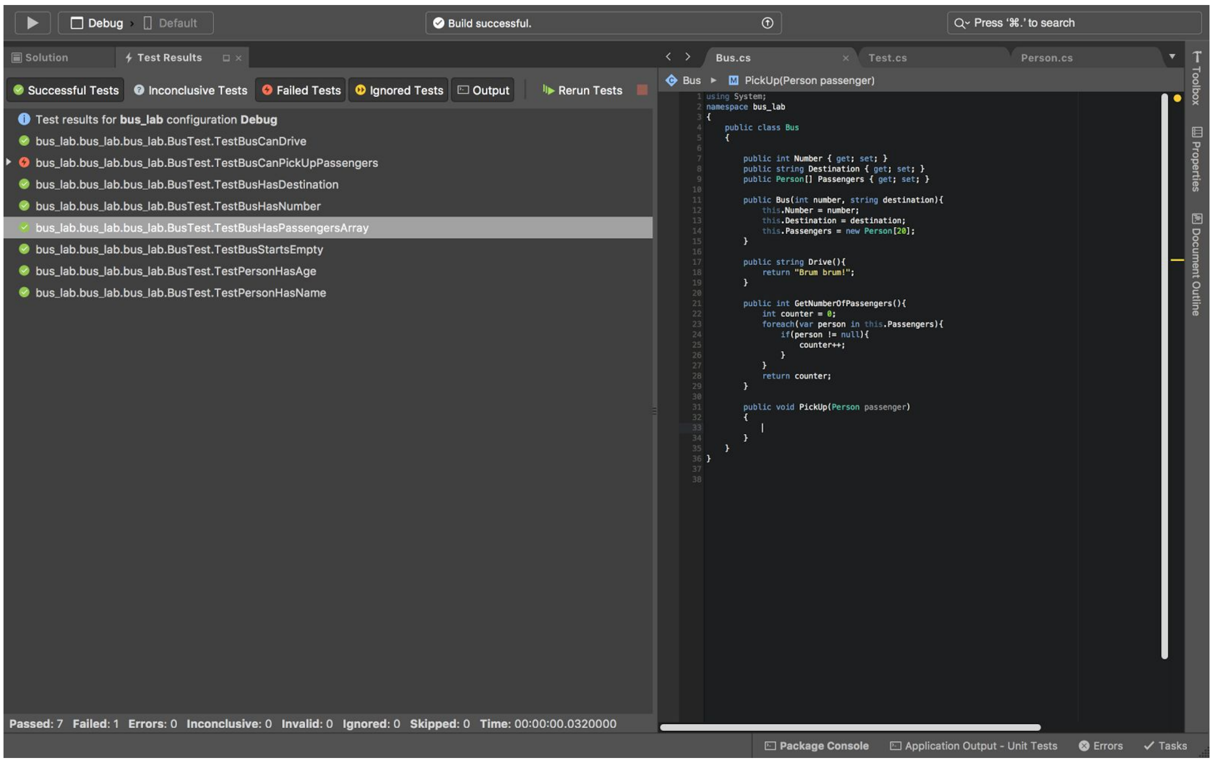
Official language: German

Currency: Euro

P - 17 Bug tracking report showing the errors diagnosed and corrected.

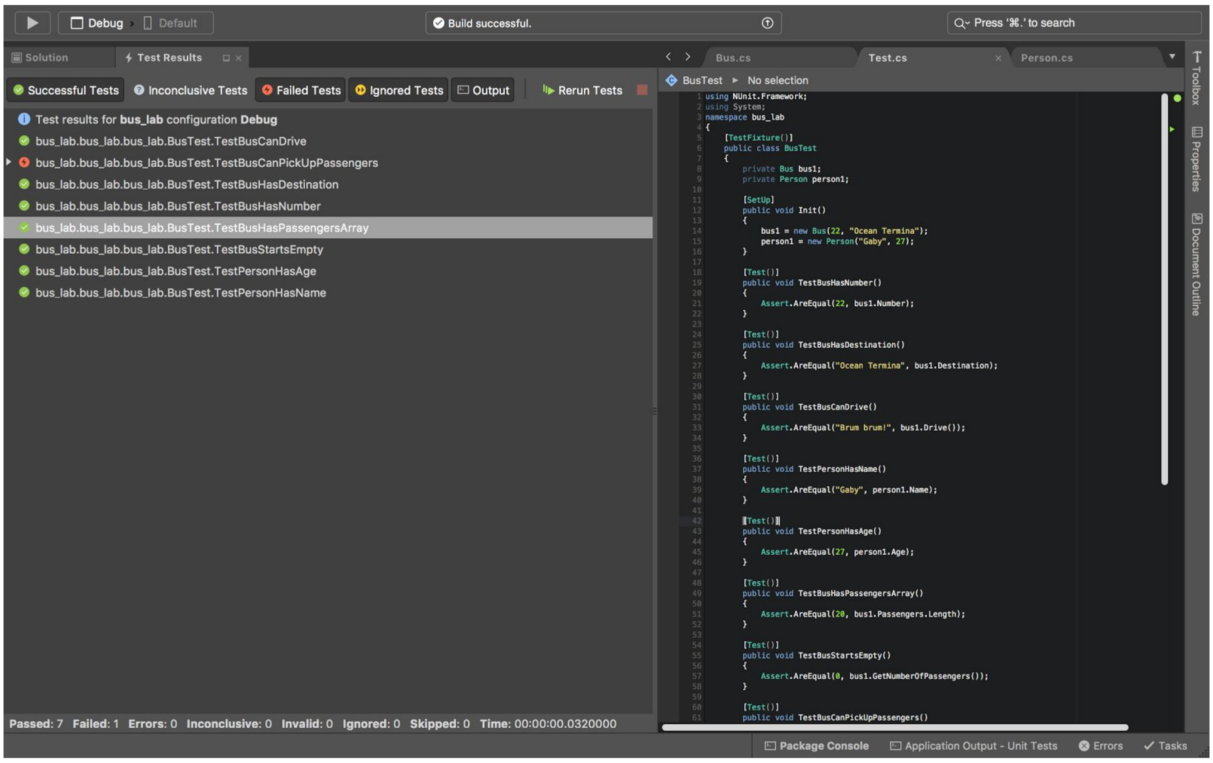
Content doesn’t respond to different screen sizes.	**Failed**	**Created a flexbox container and changed “px” to “em”.**	**Passed**
If you select another country from the dropdown, information about the previous one is still displayed.	**Failed**	**Wrote a function which clears display and call it at the beginning of “displayCountryInfo” function.**	**Passed**
Some countries have several official languages. Display is adjusted for only one.	**Failed**	**Added a switch statement which adjusts how official languages are displayed based on their number.**	**Passed**
There is an empty space for a map when no map should be displayed.	**Failed**	**Deleted map container from HTML and added it via JavaScript.**	**Passed**
Elements on the page are positioned incorrectly.	**Failed**	**Add more flexbox containers and specify positioning for each of them.**	**Passed**

P -18 Testing your program



```
Test results for bus_lab configuration Debug
bus_lab.bus_lab.bus_lab.BusTest.TestBusCanDrive
bus_lab.bus_lab.bus_lab.BusTest.TestBusCanPickUpPassengers
bus_lab.bus_lab.bus_lab.BusTest.TestBusHasDestination
bus_lab.bus_lab.bus_lab.BusTest.TestBusHasNumber
bus_lab.bus_lab.bus_lab.BusTest.TestBusHasPassengersArray
bus_lab.bus_lab.bus_lab.BusTest.TestBusStartsEmpty
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasAge
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasName

Passed: 7  Failed: 1  Errors: 0  Inconclusive: 0  Invalid: 0  Ignored: 0  Skipped: 0  Time: 00:00:00.0320000
```

```csharp
using System;
namespace bus_lab
{
    public class Bus
    {

        public int Number { get; set; }
        public string Destination { get; set; }
        public Person[] Passengers { get; set; }

        public Bus(int number, string destination){
            this.Number = number;
            this.Destination = destination;
            this.Passengers = new Person[20];
        }

        public string Drive(){
            return "Brum brum!";
        }

        public int GetNumberOfPassengers(){
            int counter = 0;
            foreach(var person in this.Passengers){
                if(person != null){
                    counter++;
                }
            }
            return counter;
        }

        public void PickUp(Person passenger)
        {

        }
    }
}
```



```
Test results for bus_lab configuration Debug
bus_lab.bus_lab.bus_lab.BusTest.TestBusCanDrive
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bus_lab.bus_lab.bus_lab.BusTest.TestBusHasDestination
bus_lab.bus_lab.bus_lab.BusTest.TestBusHasNumber
bus_lab.bus_lab.bus_lab.BusTest.TestBusHasPassengersArray
bus_lab.bus_lab.bus_lab.BusTest.TestBusStartsEmpty
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasAge
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasName

Passed: 7  Failed: 1  Errors: 0  Inconclusive: 0  Invalid: 0  Ignored: 0  Skipped: 0  Time: 00:00:00.0320000
```

```csharp
using NUnit.Framework;
using System;
namespace bus_lab
{
    [TestFixture()]
    public class BusTest
    {
        private Bus bus1;
        private Person person1;

        [SetUp]
        public void Init()
        {
            bus1 = new Bus(22, "Ocean Termina");
            person1 = new Person("Gaby", 27);
        }

        [Test()]
        public void TestBusHasNumber()
        {
            Assert.AreEqual(22, bus1.Number);
        }

        [Test()]
        public void TestBusHasDestination()
        {
            Assert.AreEqual("Ocean Termina", bus1.Destination);
        }

        [Test()]
        public void TestBusCanDrive()
        {
            Assert.AreEqual("Brum brum!", bus1.Drive());
        }

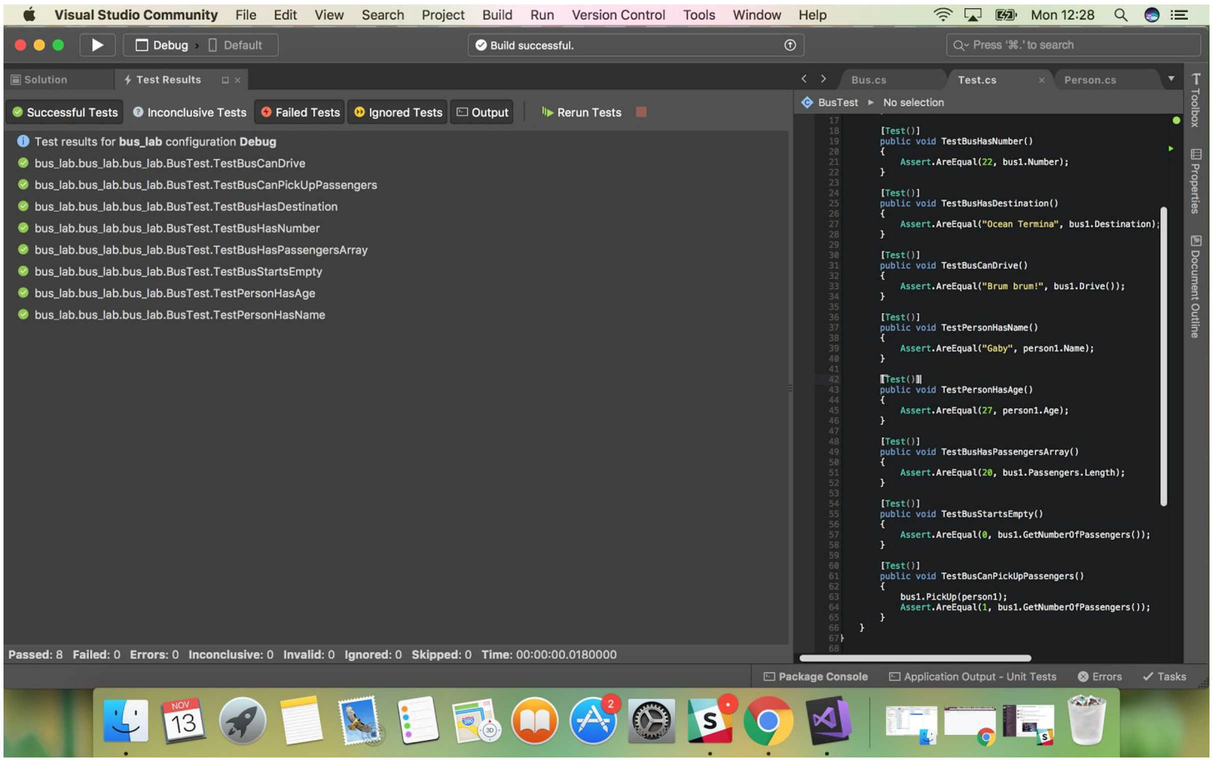
        [Test()]
        public void TestPersonHasName()
        {
            Assert.AreEqual("Gaby", person1.Name);
        }

        [Test()]
        public void TestPersonHasAge()
        {
            Assert.AreEqual(27, person1.Age);
        }

        [Test()]
        public void TestBusHasPassengersArray()
        {
            Assert.AreEqual(20, bus1.Passengers.Length);
        }

        [Test()]
        public void TestBusStartsEmpty()
        {
            Assert.AreEqual(0, bus1.GetNumberOfPassengers());
        }

        [Test()]
        public void TestBusCanPickUpPassengers()
```



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bus_lab.bus_lab.bus_lab.BusTest.TestBusHasNumber
bus_lab.bus_lab.bus_lab.BusTest.TestBusHasPassengersArray
bus_lab.bus_lab.bus_lab.BusTest.TestBusStartsEmpty
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasAge
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasName

Passed: 8  Failed: 0  Errors: 0  Inconclusive: 0  Invalid: 0  Ignored: 0  Skipped: 0  Time: 00:00:00.0180000
```

```csharp
        [Test()]
        public void TestBusHasNumber()
        {
            Assert.AreEqual(22, bus1.Number);
        }

        [Test()]
        public void TestBusHasDestination()
        {
            Assert.AreEqual("Ocean Termina", bus1.Destination);
        }

        [Test()]
        public void TestBusCanDrive()
        {
            Assert.AreEqual("Brum brum!", bus1.Drive());
        }

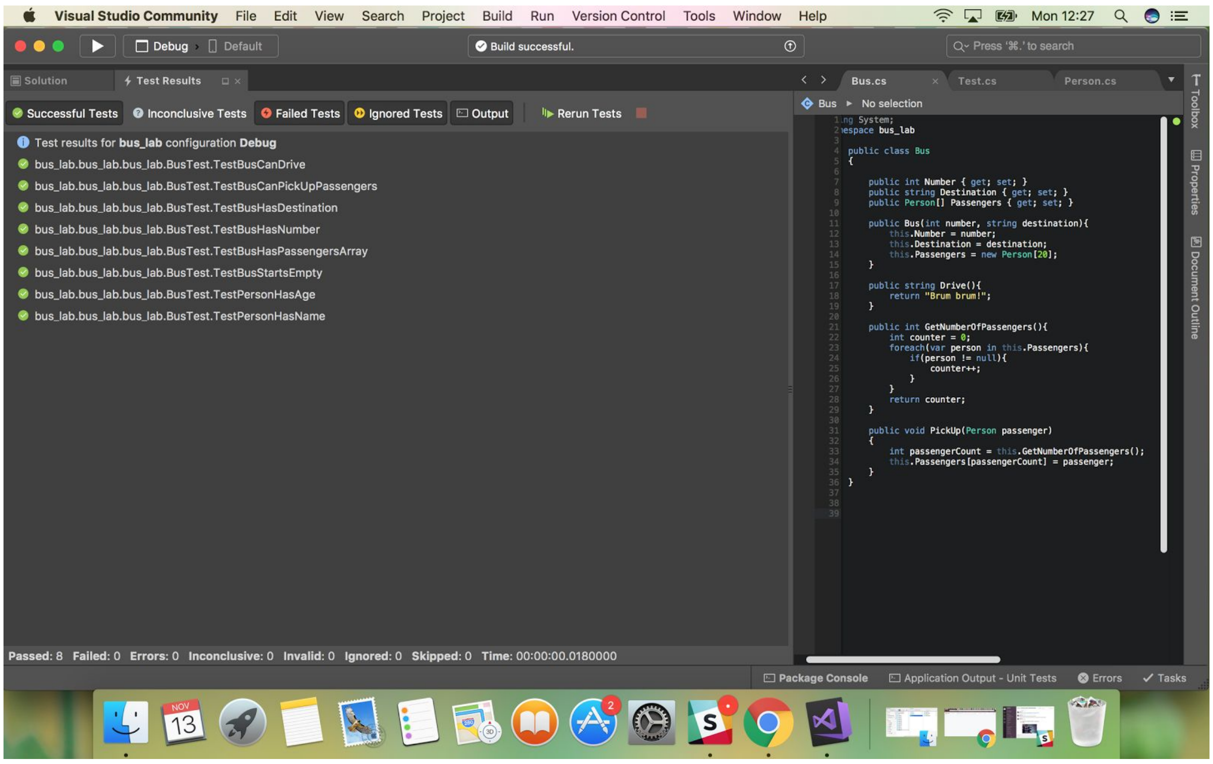
        [Test()]
        public void TestPersonHasName()
        {
            Assert.AreEqual("Gaby", person1.Name);
        }

        [Test()]
        public void TestPersonHasAge()
        {
            Assert.AreEqual(27, person1.Age);
        }

        [Test()]
        public void TestBusHasPassengersArray()
        {
            Assert.AreEqual(20, bus1.Passengers.Length);
        }

        [Test()]
        public void TestBusStartsEmpty()
        {
            Assert.AreEqual(0, bus1.GetNumberOfPassengers());
        }

        [Test()]
        public void TestBusCanPickUpPassengers()
        {
            bus1.PickUp(person1);
            Assert.AreEqual(1, bus1.GetNumberOfPassengers());
        }
    }
}
```



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bus_lab.bus_lab.bus_lab.BusTest.TestBusHasNumber
bus_lab.bus_lab.bus_lab.BusTest.TestBusHasPassengersArray
bus_lab.bus_lab.bus_lab.BusTest.TestBusStartsEmpty
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasAge
bus_lab.bus_lab.bus_lab.BusTest.TestPersonHasName

Passed: 8   Failed: 0   Errors: 0   Inconclusive: 0   Invalid: 0   Ignored: 0   Skipped: 0   Time: 00:00:00.0180000
```

```
ing System;
espace bus_lab

  public class Bus
  {

      public int Number { get; set; }
      public string Destination { get; set; }
      public Person[] Passengers { get; set; }

      public Bus(int number, string destination){
          this.Number = number;
          this.Destination = destination;
          this.Passengers = new Person[20];
      }

      public string Drive(){
          return "Brum brum!";
      }

      public int GetNumberOfPassengers(){
          int counter = 0;
          foreach(var person in this.Passengers){
              if(person != null){
                  counter++;
              }
          }
          return counter;
      }

      public void PickUp(Person passenger)
      {
          int passengerCount = this.GetNumberOfPassengers();
          this.Passengers[passengerCount] = passenger;
      }
  }
```