

TECHNICAL REPORT: IDB3

Sochi 2014 Winter Olympics

by “4 Is Better Than 6”

Members:

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- Ardhimas Kamdani
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INTRODUCTION

Description:

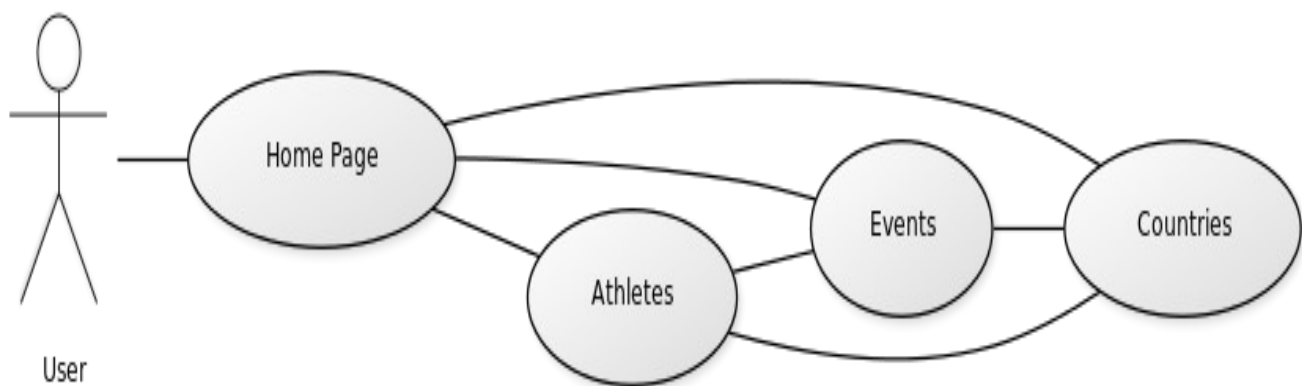
Have you ever found yourself wanting to know the events that went on during the 2014 Sochi Winter Olympics? Or the athletes that took part in said games? How about how well your favorite country did in said events? Then we have a site that is right up your alley!

Use cases (Phase 1) :

* From the Home Page a user can use the navigation bar to be directed to any Athlete, Event, and Country page.

* Navigation Bar exists in all pages. In phase 1, because of limited pages, a user may go to any page by making use of the navigation bar.

Use Case Diagram



DESIGN

RESTful API:

API exists for retrieving information of all available athletes/ events/ countries. Due to the limited functionality, there are only 2 GET methods for each model. One to retrieve a list of all available datas for a model. Each element is a key-value pair of the model's id and name, separated by an equal sign. The other method is used retrieve the details of an object of a specified id (the only parameter of this method). A user who would like to get the information on Ireen Wust, for example, may first use the first method to get this list

```
"ID=Athletes":["1=Meryl Davis","2=Tobias Arit","3=Ireen Wust"]
```

He can then use the second method to get these details

```
{  
  "Id":3,  
  "First Name":"Ireen",  
  "Last Name":"Wust",  
  "Gender":"Female",  
  "Nationality":"Netherlands",  
  "Date of Birth":"1 April 1986",  
  "Age":28,  
  "Height":"1.68m (5'6")",  
  "Weight":"63 kg (139 lbs)",  
  "Place of birth":"Goirle, Netherlands",  
  "Total Medals":5,  
  "Gold Medals":["Speed Skating:Ladies' 3000m", "Speed Skating:Ladies' Team  
    Pursuit"]  
  "Silver Medals":["Speed Skating:Ladies' 1000m", "Speed Skating:Ladies' 1500m",  
    "Speed Skating:Ladies' 5000m"]  
  "Bronze Medals":[]  
}
```

}

The screenshot shows a web browser window with the URL `docs.idb13.apiary.io/#athletes`. The page is titled "Sochi 2014 Winter Olympics" and is part of the "Sochi 2014 Winter Olympics API" documentation. The main content area is titled "Athletes" and lists attributes for an athlete object: `id`, `First Name`, `Last Name`, `Gender`, `Nationality`, `Date of Birth`, `Age`, `Height`, `Weight`, `Place of Birth`, `Total Medals` (Total of Gold, Silver, and Bronze Medals won by the athlete), `Gold Medals` (List of Events), `Silver Medals` (List of Events), and `Bronze Medals` (List of Events). Below this, there are two sections: "List of all athletes" and "Retrieve an Athlete". The "List of all athletes" section shows a GET request to `/athletes` which "Returns a list of all athletes and their ids." The "Retrieve an Athlete" section shows a GET request to `/athletes/{id}` which "Returns the details of an athlete." Below this, there is a table titled "Parameters" with three columns: "Name", "Description", and "Details". The table has one row for the parameter `id`, which is described as "Numeric id of the Athlete to perform action with." and has a detail of "number, required example: 1". On the right side of the page, there is a "Table of Contents" with links to "Athletes", "Countries", and "Events". Below that, there is an "API" section with a link to `http://www.google.com/` and a "Mock Server" section with a link to `http://idb13.apiary-mock.com`. A note explains that the mock server URL can be used to access a mockup of the API server, and that traffic will be recorded and compared to the documentation. The page also has a "Home" button in the top left and a "Nickson" user profile in the top right.

Sochi 2014 Winter Olympics

Documentation for Sochi 2014 Winter Olympics API

Athletes

Athletes related resources. An athlete object has the following attributes:

- `id`
- `First Name`
- `Last Name`
- `Gender`
- `Nationality`
- `Date of Birth`
- `Age`
- `Height`
- `Weight`
- `Place of Birth`
- `Total Medals` (Total of Gold, Silver, and Bronze Medals won by the athlete)
- `Gold Medals` (List of Events)
- `Silver Medals` (List of Events)
- `Bronze Medals` (List of Events)

List of all athletes

GET `/athletes` Add Comment

Returns a list of all athletes and their ids.

Retrieve an Athlete

GET `/athletes/{id}` Add Comment

Returns the details of an athlete.

Name	Description	Details
<code>id</code>	Numeric <code>id</code> of the Athlete to perform action with.	number, required example: 1

Countries

Countries related resources. A country has the following attributes:

Table of Contents

- Athletes
- Countries
- Events

API

`http://www.google.com/`

Mock Server

`http://idb13.apiary-mock.com`

Use this URL to access a mockup of the API server. Your traffic will be recorded and compared to the documentation. You'll find your traffic analysis in the [inspector](#) or directly here in the documentation, right next to each resource.

API documentation for athletes in Apiary

Sochi 2014 Winter Olympics—by apiary.io - Mozilla Firefox

docs.idb13.apiary.io/#athletes

Home

Sochi 2014 Winter Olympics

Documentation Traffic Inspector Editor

Nickson

id

Numeric id of the Athlete to perform action with.

number, required example: 1

Table of Contents

- Athletes
- Countries
- Events

API

<http://www.google.com/>

Mock Server

<http://idb13.apiary-mock.com>

Use this URL to access a mockup of the API server. Your traffic will be recorded and compared to the documentation. You'll find your traffic analysis in the [Inspector](#) or directly here in the documentation, right next to each resource.

Countries

Countries related resources. A country has the following attributes:

- Id
- Name
- Description (Wiki link)
- Year of First Appearance
- Number of Appearances
- Total of Gold Medals
- Total of Silver Medals
- Total of Bronze Medals
- List of Athletes
- Sports participated in Sochi

List of all Countries

GET </countries> Add Comment

Returns a list of countries and their ids.

Retrieve a Country

GET </countries/{id}> Add Comment

Parameters

Name	Description	Details
id	Numeric id of the Country to perform action with.	number, required example: 1

Events

Events related resources. An event has the following attributes:

- Id
- Name (This consists of the event's name and its associated sport)
- Description (Wiki link)

API documentation for countries in Apiary

Sochi 2014 Winter Olympics—by apiary.io - Mozilla Firefox

docs.idb13.apiary.io/#athletes

Home

Sochi 2014 Winter Olympics
Yours

Documentation Traffic Inspector Editor

Nickson

Table of Contents

- Athletes
- Countries
- Events

API

<http://www.google.com/>

Mock Server

<http://idb13.apiary-mock.com>

Use this URL to access a mockup of the API server. Your traffic will be recorded and compared to the documentation. You'll find your traffic analysis in the [inspector](#) or directly here in the documentation, right next to each resource.

List of all Countries

GET </countries> Add Comment

Returns a list of countries and their ids.

Retrive a Country

GET </countries/{id}> Add Comment

Name	Description	Details
id	Numeric id of the Country to perform action with.	number, required example: 1

Events

Events related resources. An event has the following attributes:

- Id
- Name (This consists of the event's name and its associated sport)
- Description (Wiki link)
- Sport
- Gold Medalist(s)
- Silver Medalist(s)
- Bronze Medalist(s)

List of all Events

GET </events> Add Comment

Retrive an event

GET </events/{id}> Add Comment

Name	Description	Details
id	Numeric id of the Event to perform action with.	number, required example: 1

API documentation for events in Apiary

Django Models & Attributes:

1. ATHLETES

* First Name

- Primary Key
- Athlete's first name
- String

* Last Name

- Primary Key
- Athlete's last name
- String

* Country

- Athlete's Country
- String

* Gender

- Athlete's Gender
- String

* Birthdate

- Primary Key
- Athlete's Date of birth

- Date

- * Height

- Athlete's Height

- String

- * Weight

- Athlete's Weight

- String

- * Picture

- Athlete's Picture

- Name of image file with extension

- * Video

- YouTube video related to the athlete

- YouTube link in <https://www.youtube.com/v/>* format

- * Gold Medals

- List of events the athlete won the gold medal from

- Foreign Key

- * Silver Medals: Events

- List of events the athlete won the silver medal from

- Foreign Key

- * Bronze Medals: Events

- List of events the athlete won the bronze medal from
- Foreign Key

FirstName, LastName, and DateofBirth are chosen as the primary keys to prevent conflicts. It is highly unlikely that participating athletes will have the same name and date of birth.

2. COUNTRIES

* Name

- Primary Key
- Name of the country
- String

* Athlete List

- List of participating athletes from the country
- String

* Description

- Brief description of the country
- String

* Gold Medals Won

- Total of gold medals won by the country
- Dynamically calculated from the medals won by the athletes

- Integer

- * Silver Medals Won

- Total of silver medals won by the country

- Dynamically calculated from the medals won by the athletes

- * Bronze Medals Won

- Total of bronze medals won by the country

- Dynamically calculated from the medals won by the athletes

- * Country Code

- 3 letter International Olympic Committee country code

- String

- * Coordx

- X-Coordinate of country used in Google Maps

- Float

- * Coordy

- Y-Coordinate of country used in Google Maps

- Float

- * Coordz

- Zoom value used in Google Maps

- Int

3. EVENTS

* Name

- Primary Key
- Name of the event
- String

* Sport

- Primary Key
- Name of the associated sport
- String

* Description

- A brief description of the event
- String

* Icon

- Icon that represents the sport of the event
- Name of icon file with extension

* Gold Medalist(s)

- The name of the gold medalist(s). Can be multiple athletes.
- Foreign Key

* Silver Medalist(s)

- The name of the silver medalist(s). Can be multiple athletes.

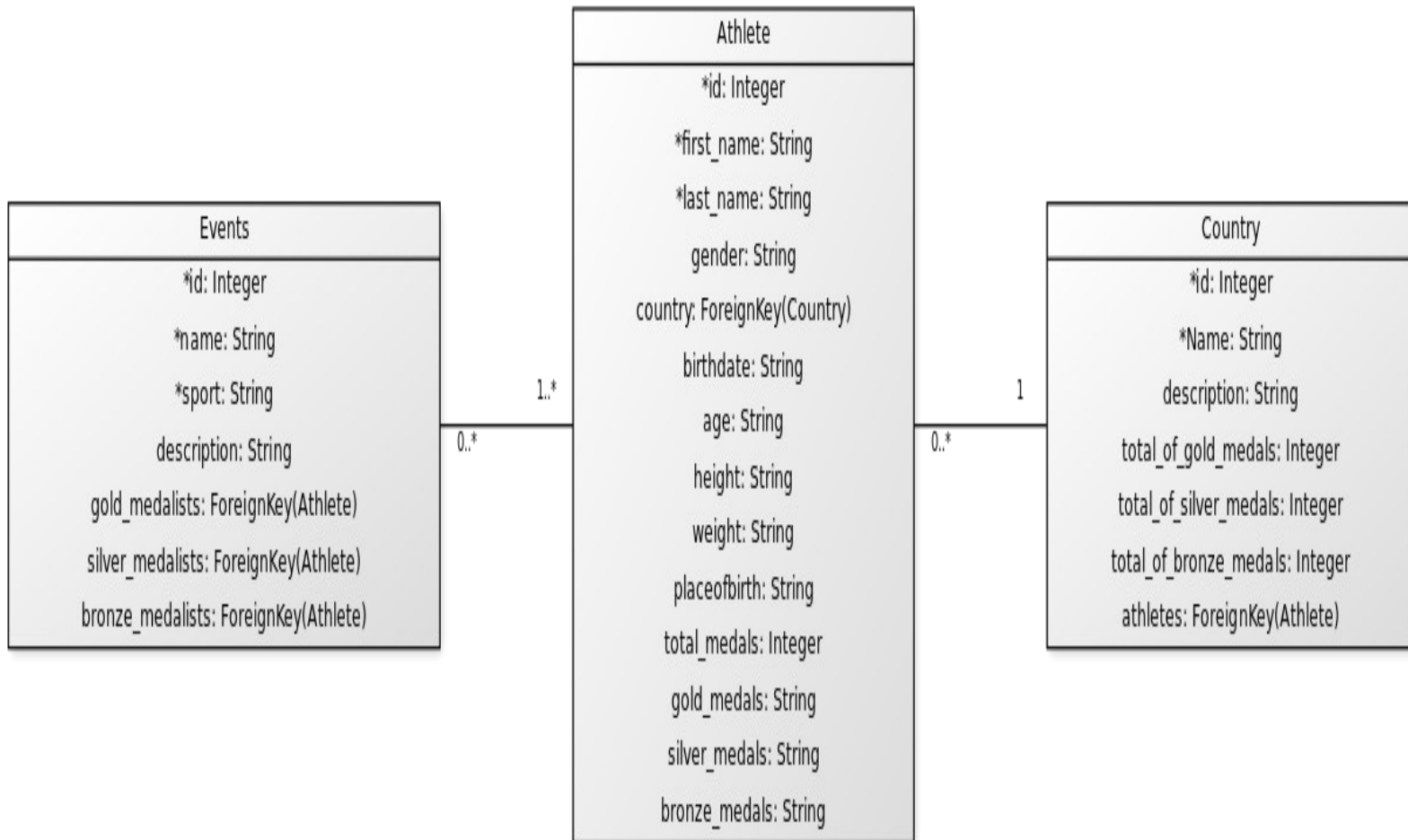
- Foreign Key

* Bronze Medalist(s)

- The name of the bronze medalist(s). Can be multiple athletes.

- Foreign Key

Django Models Diagram



TESTS

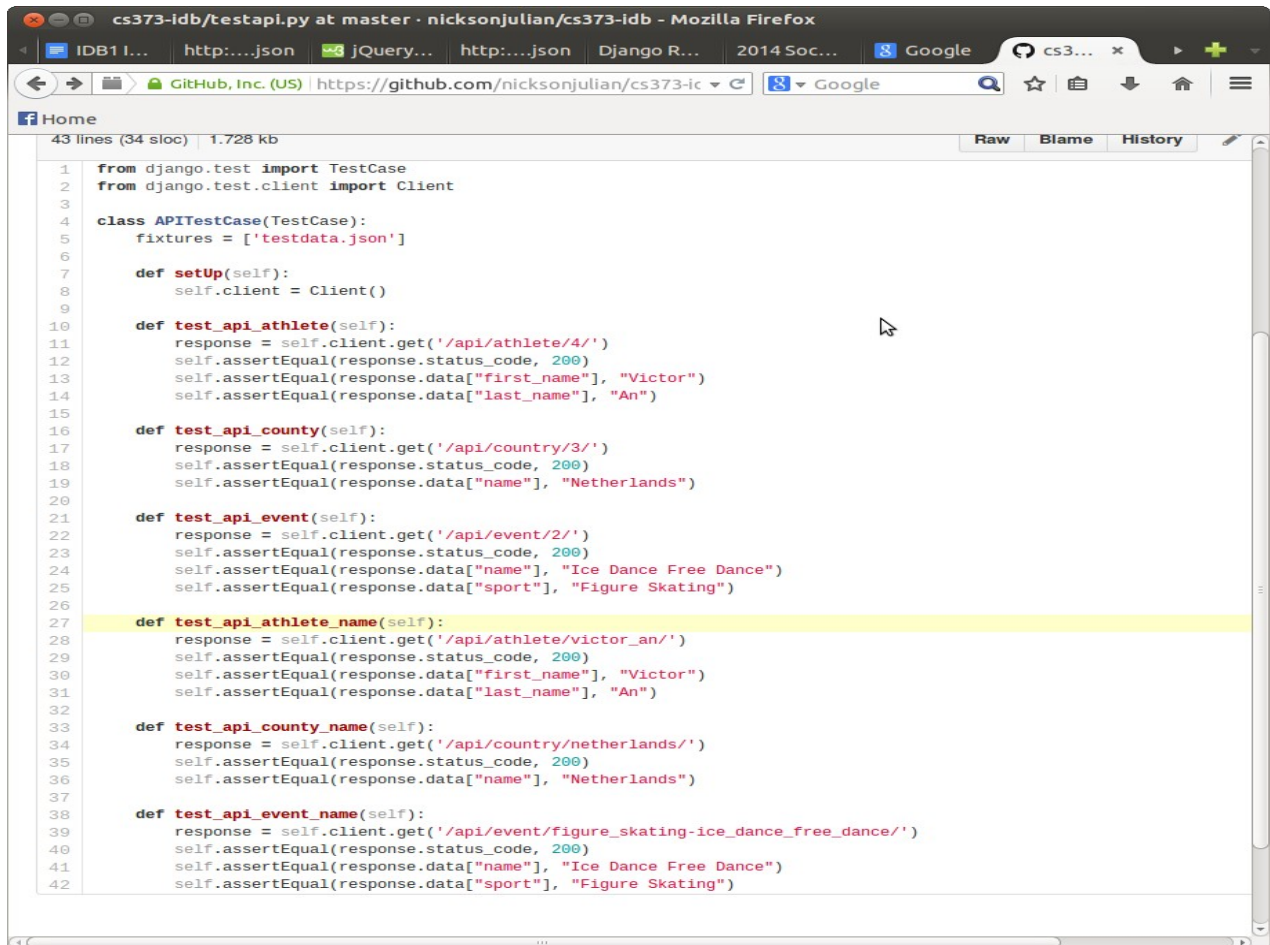
Django Models:

```
tests.py (~/.CS373/cs373-ldb/cs373_Sochi/home) - gedit
1 from django.test import TestCase
2
3 from home.models import Athlete, Country, Events
4
5 class HomeTests(TestCase):
6
7     def test_Athlete1(self):
8         athlete = Athlete(self, "John", "Doe", "US")|
9         self.assertEqual(athlete.first_name, "John")
10
11     def test_Athlete2(self):
12         athlete = Athlete(self, "John", "Doe", "US")
13         self.assertEqual(athlete.last_name, "Doe")
14
15     def test_Athlete3(self):
16         #Have to use get_or_create to make the country object to be passed to athlete
17         country, created = Country.objects.get_or_create(name="Egypt", description="Made of sand")
18         athlete = Athlete(self, "John", "Doe", country.id)
19         self.assertEqual(athlete.country.name, "Egypt")
20
21     def test_Events1(self):
22         event = Events(self, "Luge Doubles", "Luge", "Riding on cars")
23         self.assertEqual(event.name, "Luge Doubles")
24
25     def test_Events2(self):
26         event = Events(self, "Luge Doubles", "Luge", "Riding on cars")
27         self.assertEqual(event.sport, "Luge")
28
29     def test_Events3(self):
30         event = Events(self, "Luge Doubles", "Luge", "Riding on cars")
31         self.assertEqual(event.desc, "Riding on cars")
32
33     def test_Country1(self):
34         country = Country(self, "Egypt", "Made of sand")
35         self.assertEqual(country.name, "Egypt")
36
37     def test_Country2(self):
38         country = Country(self, "Egypt", "Made of sand")
39         self.assertEqual(country.description, "Made of sand")
40
41     def test_Country3(self):
42         country = Country(self, "Egypt", "Made of sand", 10, 2, 8)
43         self.assertEqual(country.total_gold_medals, 10)
44
45     def test_Country4(self):
46         country = Country(self, "Egypt", "Made of sand", 10, 2, 8)
47         self.assertEqual(country.total_bronze_medals, 8)
```

Simple tests that test if objects were created successfully.

Added for IDB2 is the tests to check the usage of these objects. The way we do the test is we check if the attributes of the objects created have the right values.

API:



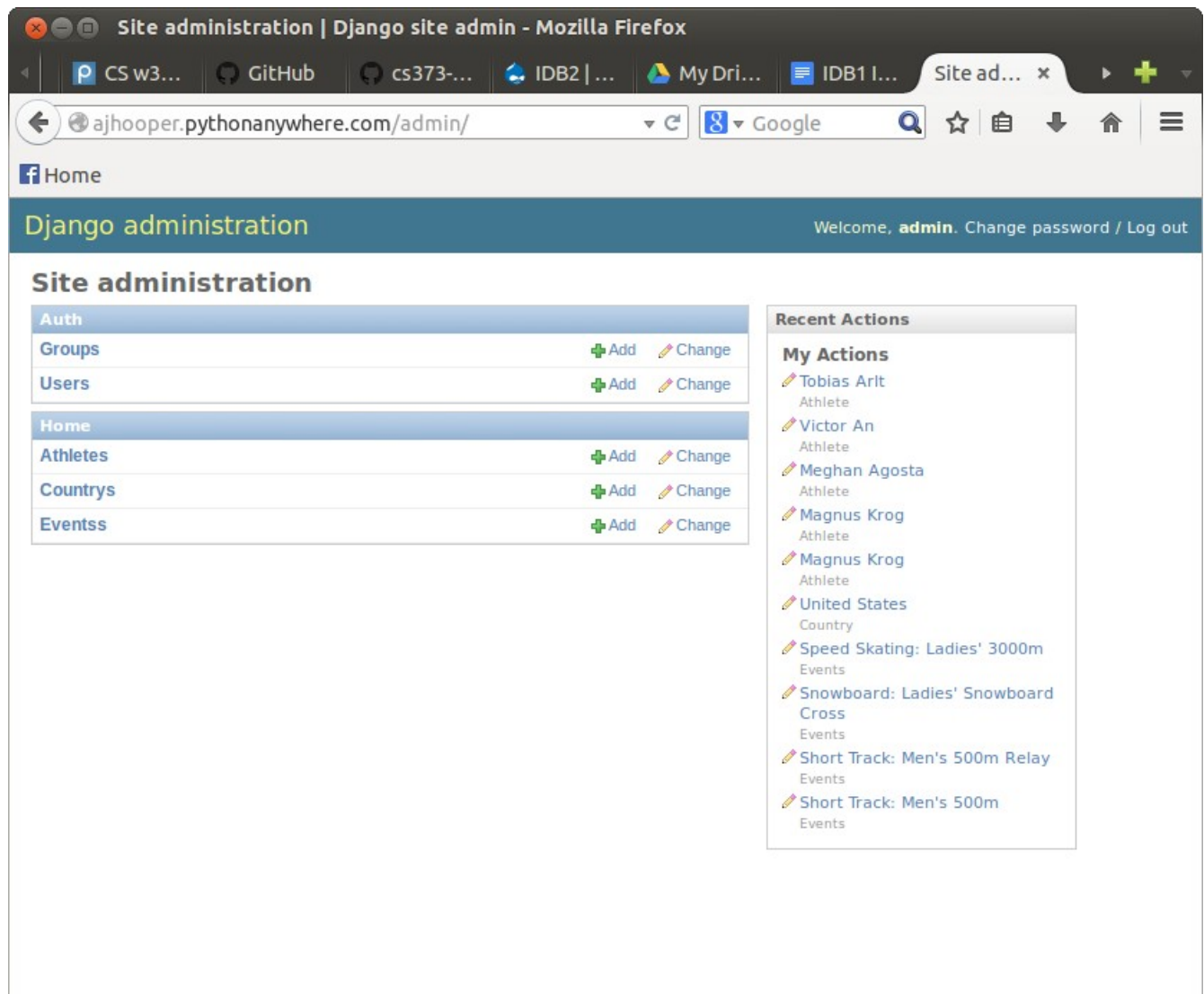
```
1 from django.test import TestCase
2 from django.test.client import Client
3
4 class APITestCase(TestCase):
5     fixtures = ['testdata.json']
6
7     def setUp(self):
8         self.client = Client()
9
10    def test_api_athlete(self):
11        response = self.client.get('/api/athlete/4/')
12        self.assertEqual(response.status_code, 200)
13        self.assertEqual(response.data["first_name"], "Victor")
14        self.assertEqual(response.data["last_name"], "An")
15
16    def test_api_county(self):
17        response = self.client.get('/api/country/3/')
18        self.assertEqual(response.status_code, 200)
19        self.assertEqual(response.data["name"], "Netherlands")
20
21    def test_api_event(self):
22        response = self.client.get('/api/event/2/')
23        self.assertEqual(response.status_code, 200)
24        self.assertEqual(response.data["name"], "Ice Dance Free Dance")
25        self.assertEqual(response.data["sport"], "Figure Skating")
26
27    def test_api_athlete_name(self):
28        response = self.client.get('/api/athlete/victor_an/')
29        self.assertEqual(response.status_code, 200)
30        self.assertEqual(response.data["first_name"], "Victor")
31        self.assertEqual(response.data["last_name"], "An")
32
33    def test_api_county_name(self):
34        response = self.client.get('/api/country/netherlands/')
35        self.assertEqual(response.status_code, 200)
36        self.assertEqual(response.data["name"], "Netherlands")
37
38    def test_api_event_name(self):
39        response = self.client.get('/api/event/figure_skating-ice_dance_free_dance/')
40        self.assertEqual(response.status_code, 200)
41        self.assertEqual(response.data["name"], "Ice Dance Free Dance")
42        self.assertEqual(response.data["sport"], "Figure Skating")
```

tests for API.

Tests for API check if API returns the correct values. As an example, test_api_athlete checks if the name of the person with id 4 is Victor Ann. The test_api_athlete does the same thing, but by using the full name of the person instead of the id.

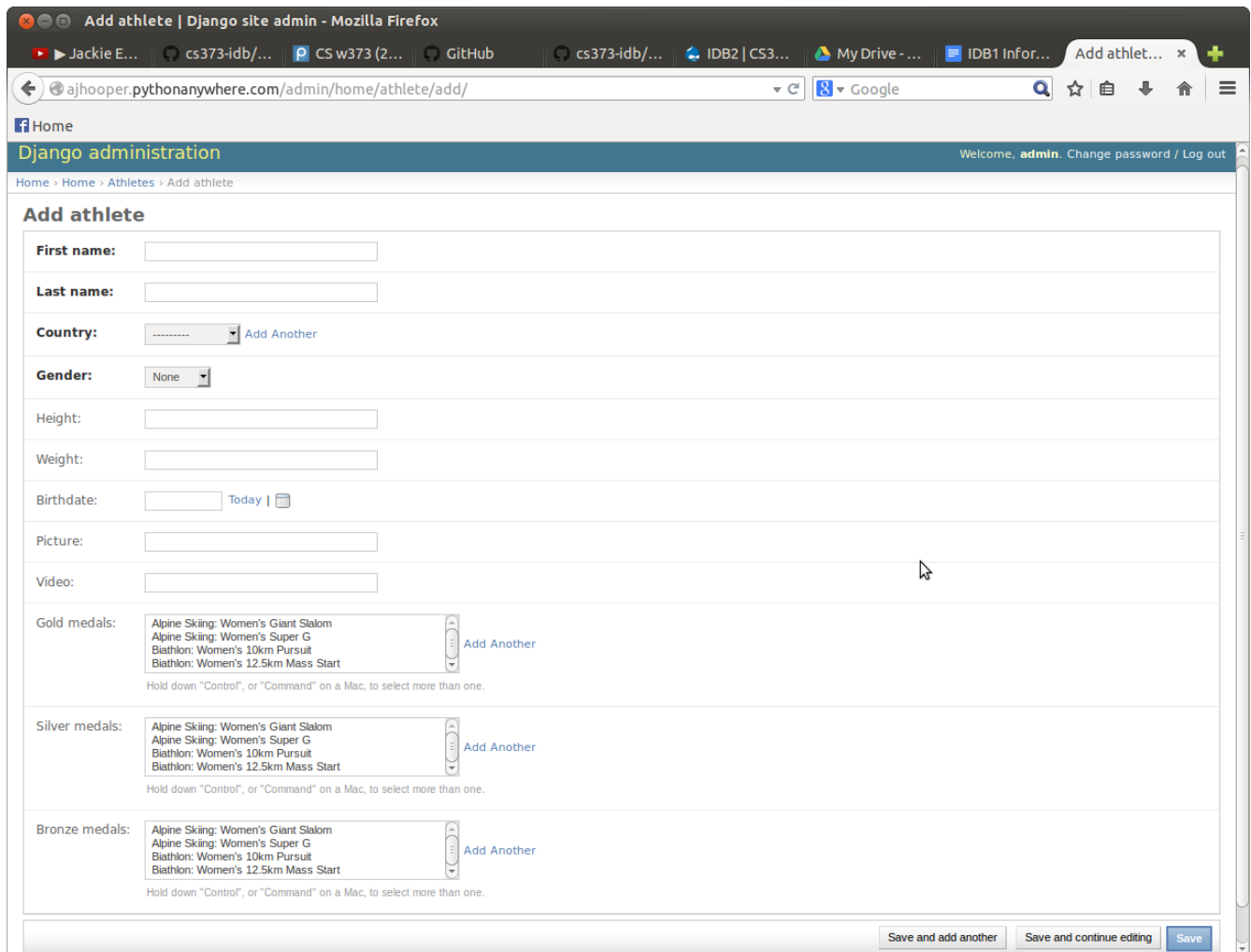
DATABASE

Fortunately Django handles the sql database for us and we do not have to write any sql queries to manage our database. The database can be accessed by going to the admin page. The picture following is the look of the admin page.



Admin page of our website.

We can easily add a new data to our database by clicking add which will direct us to a form with all the attributes of a particular model. We can just fill in the form to add the desired data.



The screenshot shows a web browser window with the title "Add athlete | Django site admin - Mozilla Firefox". The address bar shows the URL "ajhooper.pythonanywhere.com/admin/home/athlete/add/". The page header includes "Django administration" and a welcome message for "admin". The breadcrumb trail is "Home > Home > Athletes > Add athlete". The main form is titled "Add athlete" and contains the following fields:

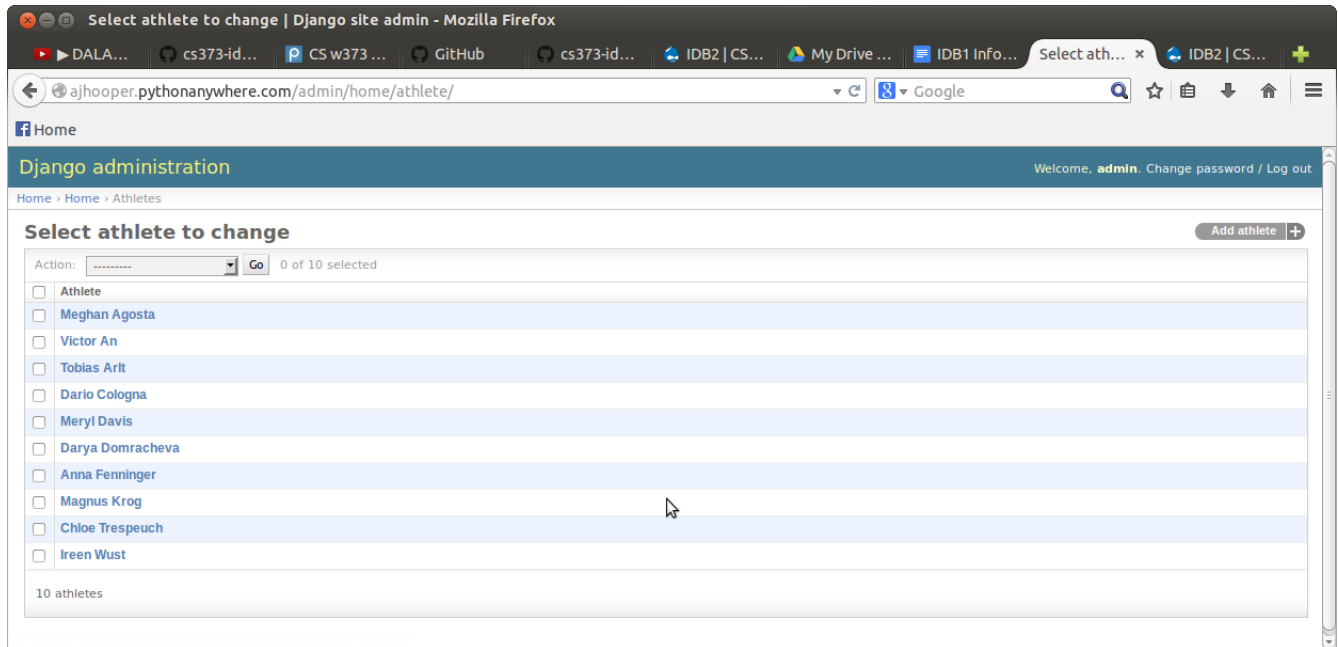
- First name:
- Last name:
- Country: [Add Another](#)
- Gender:
- Height:
- Weight:
- Birthdate: [Today](#) [Calendar](#)
- Picture:
- Video:
- Gold medals: [Add Another](#)
- Silver medals: [Add Another](#)
- Bronze medals: [Add Another](#)

Below each medal field, there is a note: "Hold down 'Control', or 'Command' on a Mac, to select more than one." At the bottom of the form, there are three buttons: "Save and add another", "Save and continue editing", and "Save".

Add form of athlete.

One important thing to notice is that Django automatically creates a drop-down list for foreign keys. This list is automatically updated whenever there is a change in the relevant databases. In this case, all Events, which are foreign keys for are listed in the drop-down list for Gold, Silver, and Bronze medals.

For updating the existing datas, we can click Change which directs us to the list of existing datas for a particular model.



List of existing athletes.

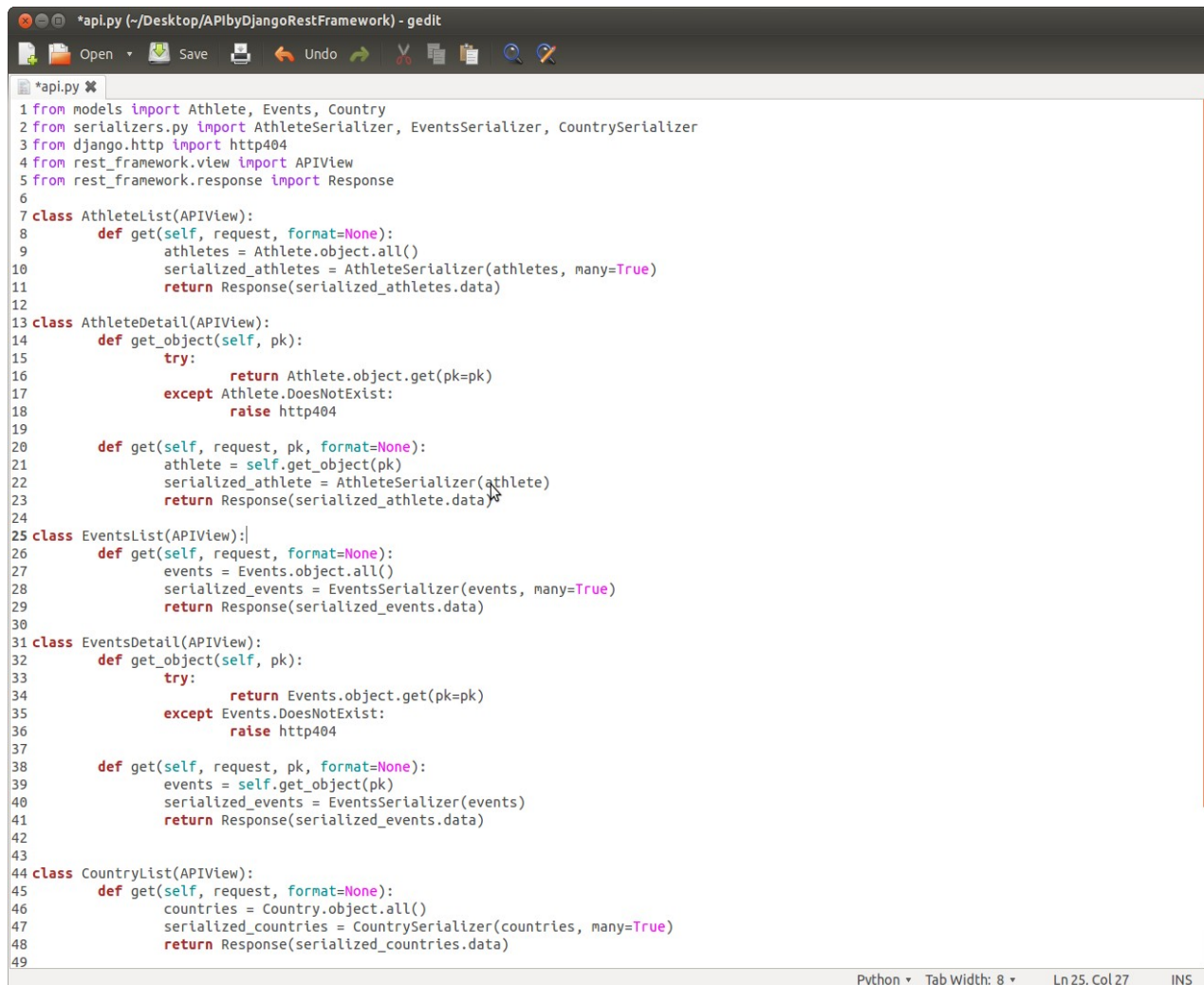
To update an athlete, say Ireen Wust, we just have to click her name which directs us to a filled form. We can then change the attributes and click save to update.

API (Django REST framework or Tastypie?)

There were two options to the software that we can use to build the API. One was the Django Rest Framework, the other one is Tastypie. We decided to create both versions and see which one suited better for our site.

A. Django REST framework

The core file is api.py in which we describe the kind of APIs that we want as described in DESIGN section for RESTful API (list and details).



```
*api.py (-/Desktop/APIbyDjangoRestFramework) - gedit
1 from models import Athlete, Events, Country
2 from serializers.py import AthleteSerializer, EventsSerializer, CountrySerializer
3 from django.http import http404
4 from rest_framework.view import APIView
5 from rest_framework.response import Response
6
7 class AthleteList(APIView):
8     def get(self, request, format=None):
9         athletes = Athlete.object.all()
10        serialized_athletes = AthleteSerializer(athletes, many=True)
11        return Response(serialized_athletes.data)
12
13 class AthleteDetail(APIView):
14     def get_object(self, pk):
15         try:
16             return Athlete.object.get(pk=pk)
17         except Athlete.DoesNotExist:
18             raise http404
19
20     def get(self, request, pk, format=None):
21         athlete = self.get_object(pk)
22         serialized_athlete = AthleteSerializer(athlete)
23         return Response(serialized_athlete.data)
24
25 class EventsList(APIView):
26     def get(self, request, format=None):
27         events = Events.object.all()
28         serialized_events = EventsSerializer(events, many=True)
29         return Response(serialized_events.data)
30
31 class EventsDetail(APIView):
32     def get_object(self, pk):
33         try:
34             return Events.object.get(pk=pk)
35         except Events.DoesNotExist:
36             raise http404
37
38     def get(self, request, pk, format=None):
39         events = self.get_object(pk)
40         serialized_events = EventsSerializer(events)
41         return Response(serialized_events.data)
42
43
44 class CountryList(APIView):
45     def get(self, request, format=None):
46         countries = Country.object.all()
47         serialized_countries = CountrySerializer(countries, many=True)
48         return Response(serialized_countries.data)
49
```

Python ▾ Tab Width: 8 ▾ Ln 25, Col 27 INS

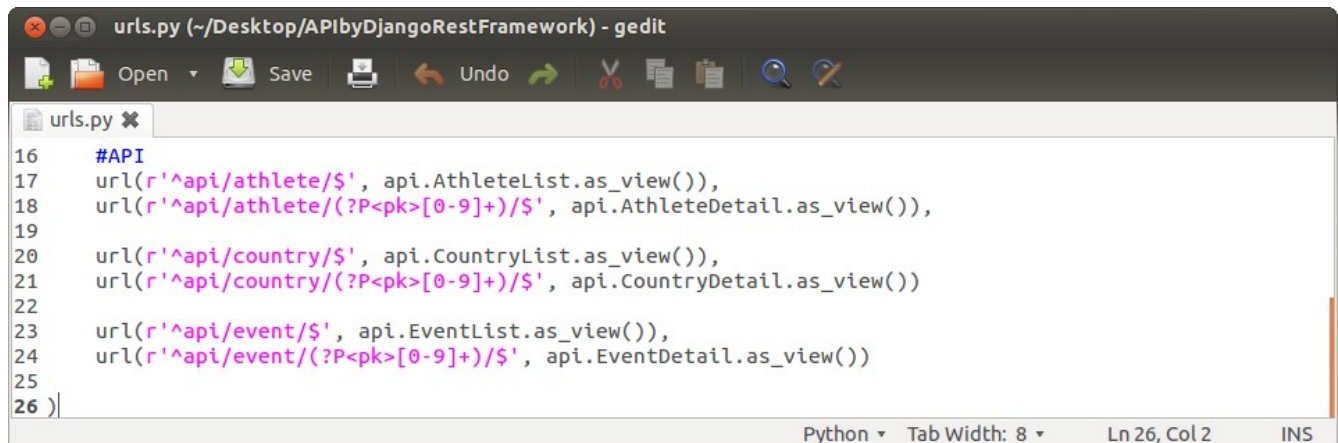
api.py for Django REST framework.

For Django Rest Framework, we had to create another file called serializers.py that allows the data to be easily rendered to JSON, XML format.

```
serializers.py (~/Desktop/APIbyDjangoRestFramework) - gedit
Open Save Undo
serializers.py x
1 from models import Athlete, Country, Events
2
3 from rest_framework import serializers
4
5 #or use HyperModelSerializer
6 class AthleteSerializer(serializers.ModelSerializer):
7     class Meta:
8         model = Athlete
9         fields = (
10             'id',
11             'first_name',
12             'last_name',
13             'country',
14             'gender',
15             'birthdate',
16             'gold_medals',
17             'silver_medals',
18             'bronze_medals'
19         )
20
21 class EventsSerializer(serializers.ModelSerializer):
22     class Meta:
23         model = Athlete
24         fields = (
25             'id',
26             'name',
27             'sport',
28             'country',
29             'desc',
30             'gold_medalists',
31             'silver_medalists',
32             'bronze_medalists'
33         )
34
35 class CountrySerializer(serializers.ModelSerializer):
36     class Meta:
37         model = Athlete
38         fields = (
39             'id',
40             'name',
41             'description',
42             'country',
43             'total_gold_medals',
44             'total_silver_medals',
45             'total_bronze_medals',
46             'athletes'
47         )
48
Python Tab Width: 8 Ln 47, Col 18 INS
```

Django Rest Framework Serializers.py.

Finally, to make sure that the API pages are running, we update the `urls.py` to include the new API pages.

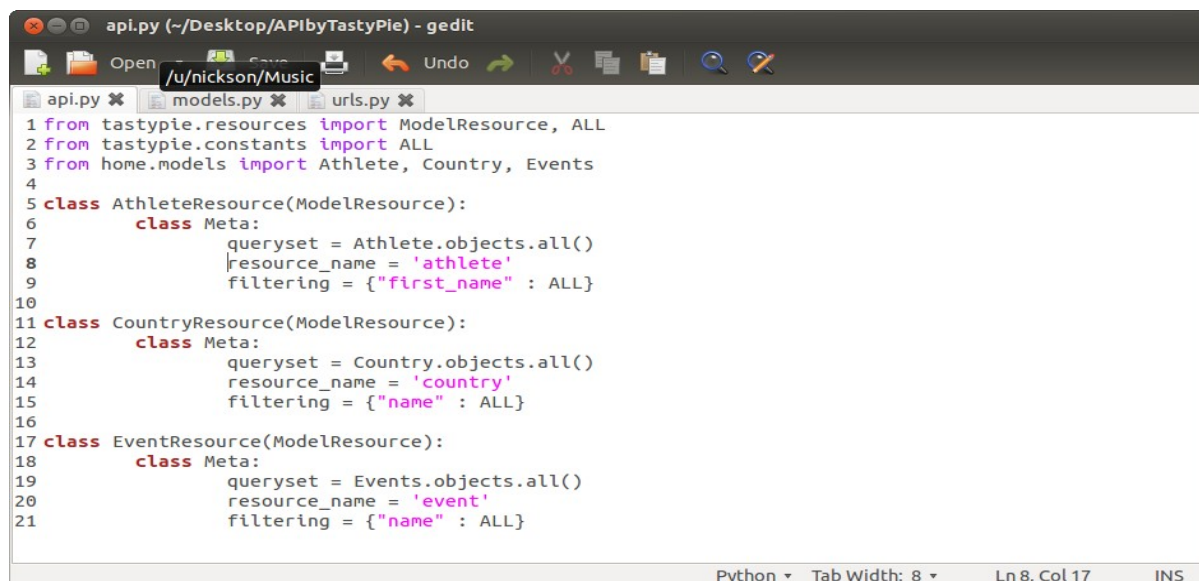


```
urls.py (~/Desktop/APIbyDjangoRestFramework) - gedit
#API
url(r'^api/athlete/$', api.AthleteList.as_view()),
url(r'^api/athlete/(?P<pk>[0-9]+)/$', api.AthleteDetail.as_view()),
url(r'^api/country/$', api.CountryList.as_view()),
url(r'^api/country/(?P<pk>[0-9]+)/$', api.CountryDetail.as_view()),
url(r'^api/event/$', api.EventList.as_view()),
url(r'^api/event/(?P<pk>[0-9]+)/$', api.EventDetail.as_view())
```

Added URLs for API.

B. Tastypie

Here, we also included the core code for API in a file called `api.py`.



```
api.py (~/Desktop/APIbyTastypie) - gedit
from tastypie.resources import ModelResource, ALL
from tastypie.constants import ALL
from home.models import Athlete, Country, Events

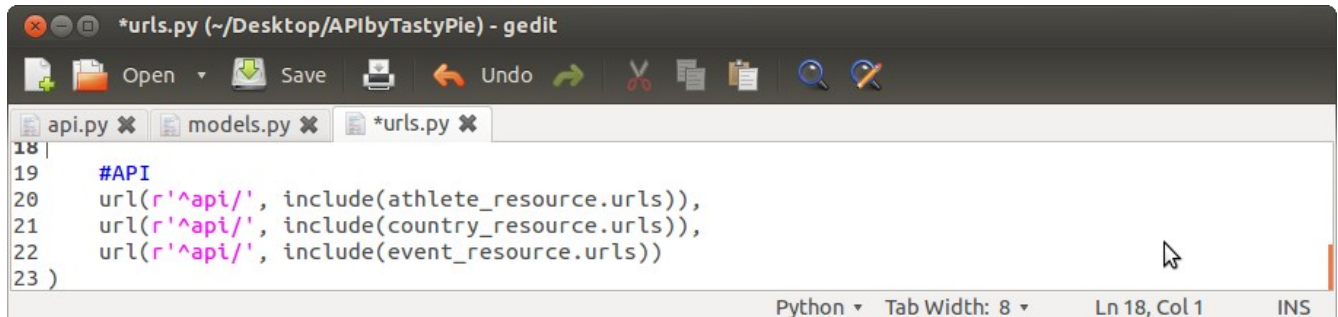
class AthleteResource(ModelResource):
    class Meta:
        queryset = Athlete.objects.all()
        resource_name = 'athlete'
        filtering = {"first_name" : ALL}

class CountryResource(ModelResource):
    class Meta:
        queryset = Country.objects.all()
        resource_name = 'country'
        filtering = {"name" : ALL}

class EventResource(ModelResource):
    class Meta:
        queryset = Events.objects.all()
        resource_name = 'event'
        filtering = {"name" : ALL}
```

api.py for Tastypie.

We also had to add the API. However, the ModelResource amazingly handled all the urls and we do not have to create any regular expression.



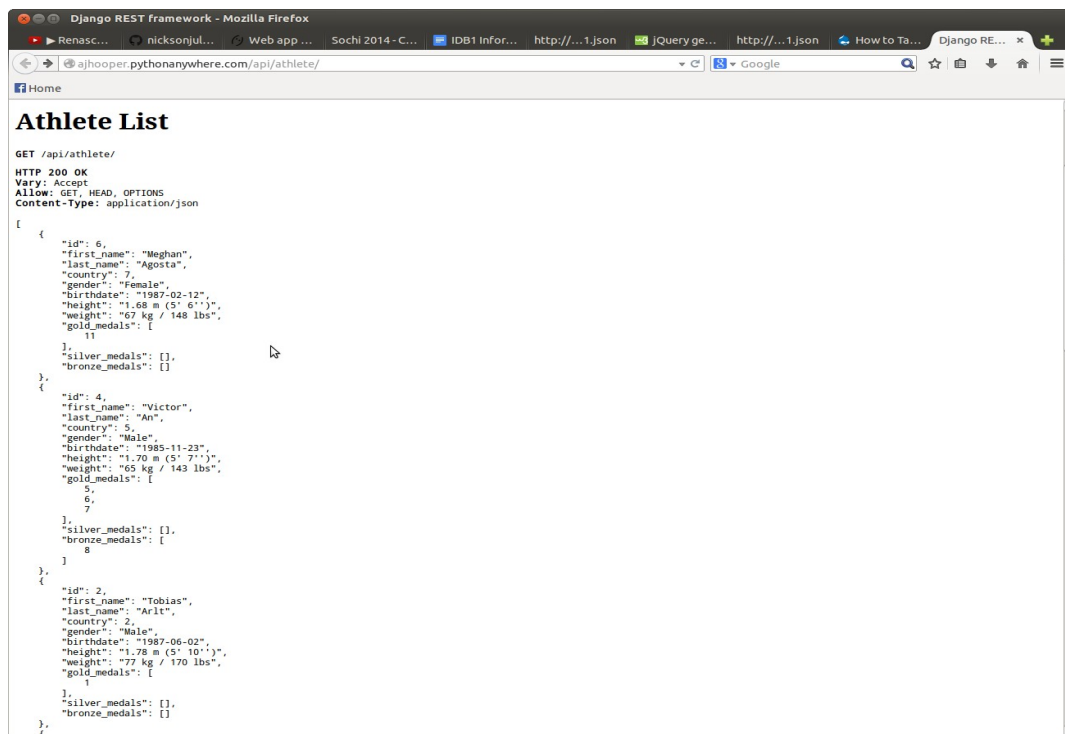
```
*urls.py (~/Desktop/APIbyTastyPie) - gedit
18 |
19 | #API
20 | url(r'^api/', include(athlete_resource.urls)),
21 | url(r'^api/', include(country_resource.urls)),
22 | url(r'^api/', include(event_resource.urls))
23 |
```

Python Tab Width: 8 Ln 18, Col 1 INS

urls.py for Tastypie.

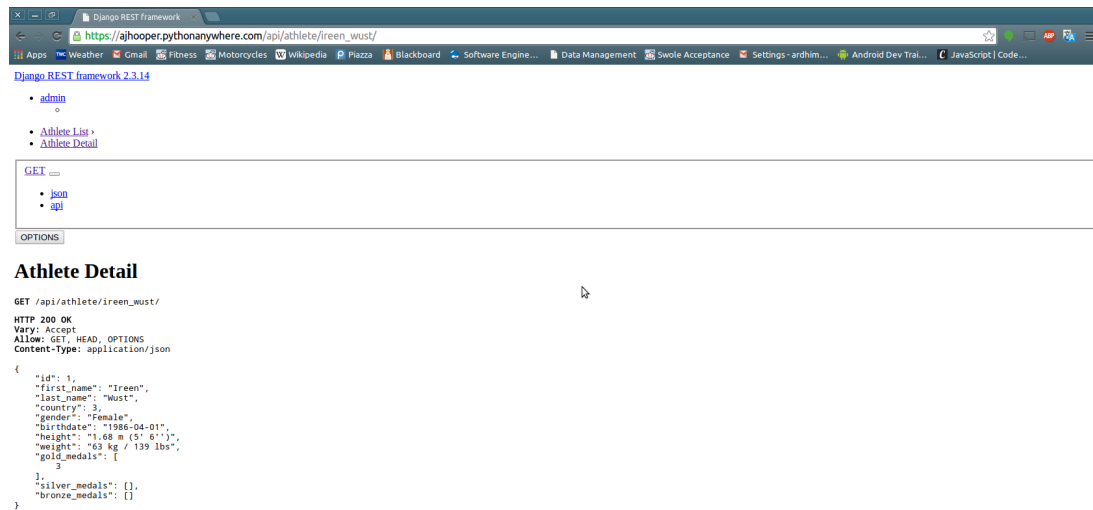
C. Conclusion

Eventually, we decided to use Django Rest Framework to build our API. To access our API, you have to add api in the url path. As an example, for getting the information of all countries, the url will be ajhooper.pythonanywhere.com/api/athlete/.



<https://ajhooper.pythonanywhere.com/api/country/>.

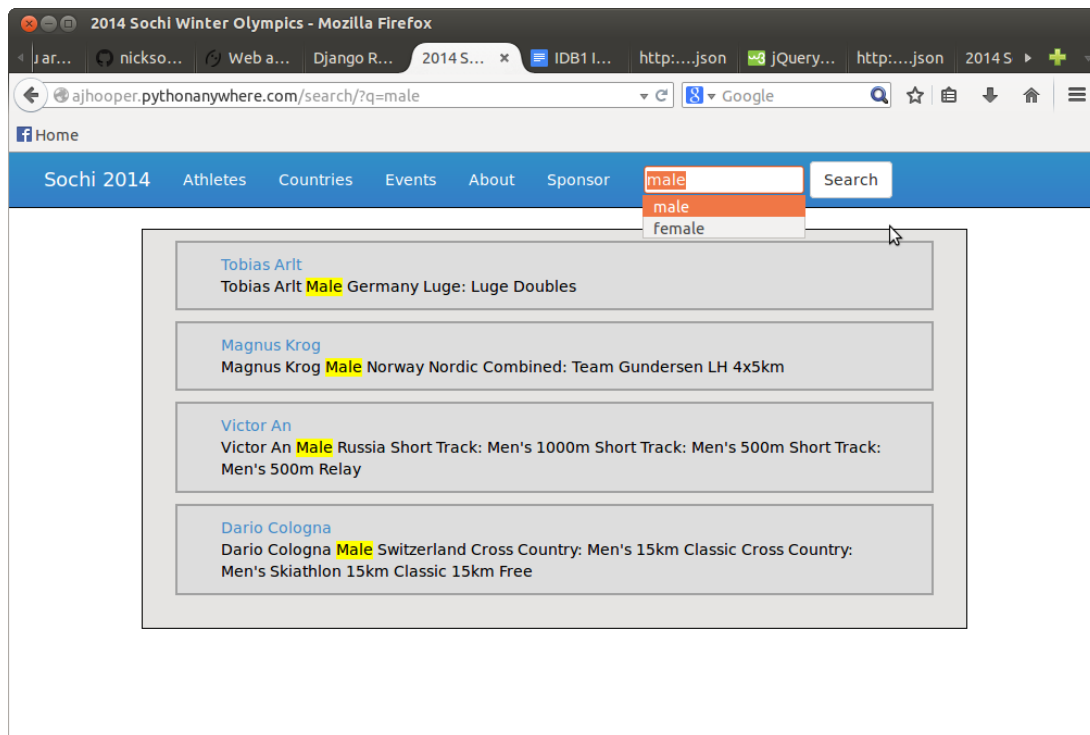
For getting the detailed information of a single athlete/country/event, use the id or the name of the full name athlete/country/event (separated with “_”) as the last path of the url.



https://ajhooper.pythonanywhere.com/api/athlete/ireen_wust/

SEARCH CAPABILITY

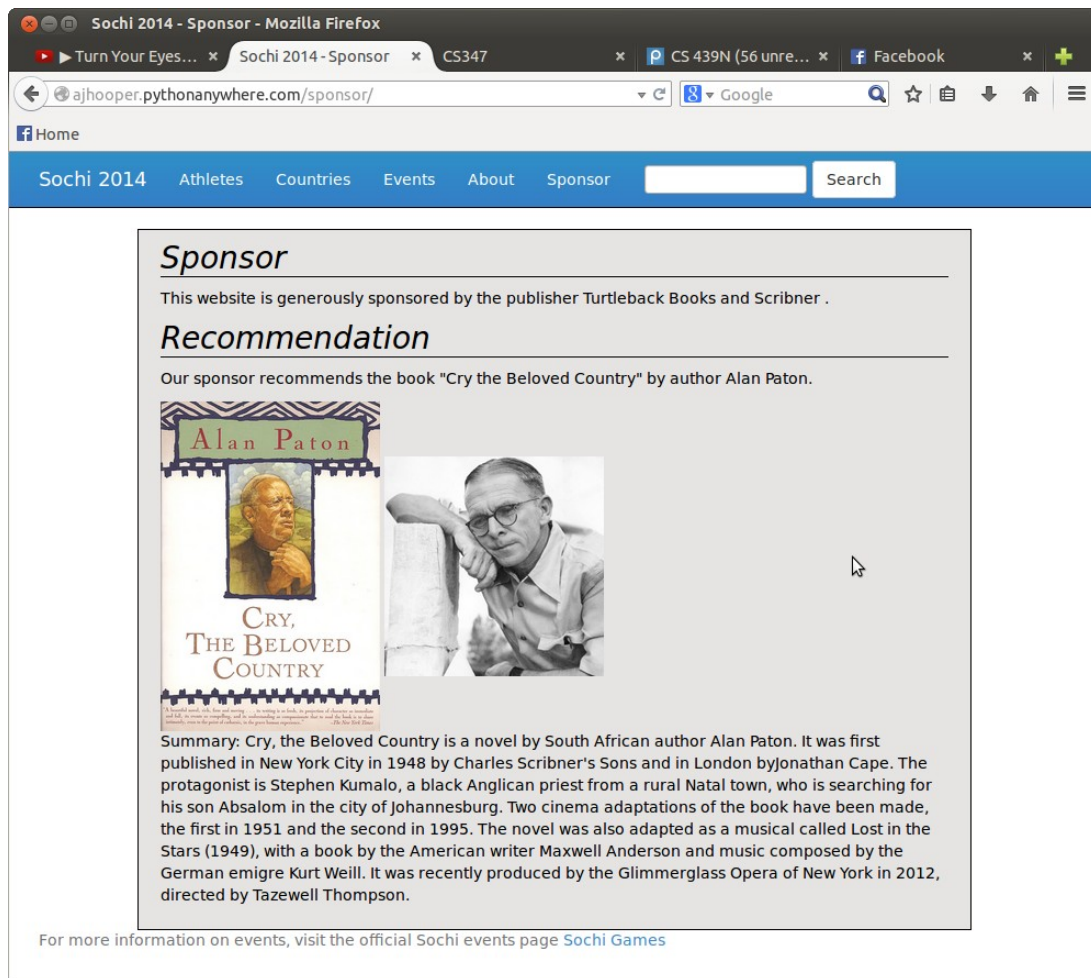
In the third phase of the project, we successfully implemented the search bar by using Haystack and Whoosh. User can type any word to cause result boxes to appear. The result box consists of the title of the relevant pages (which is also a link to that page) and some text in the page that contains the word searched for. The word that is searched will be highlighted in the result boxes.



Searching for male will bring up all the male athletes' pages.

EXERCISING ANOTHER GROUP'S API

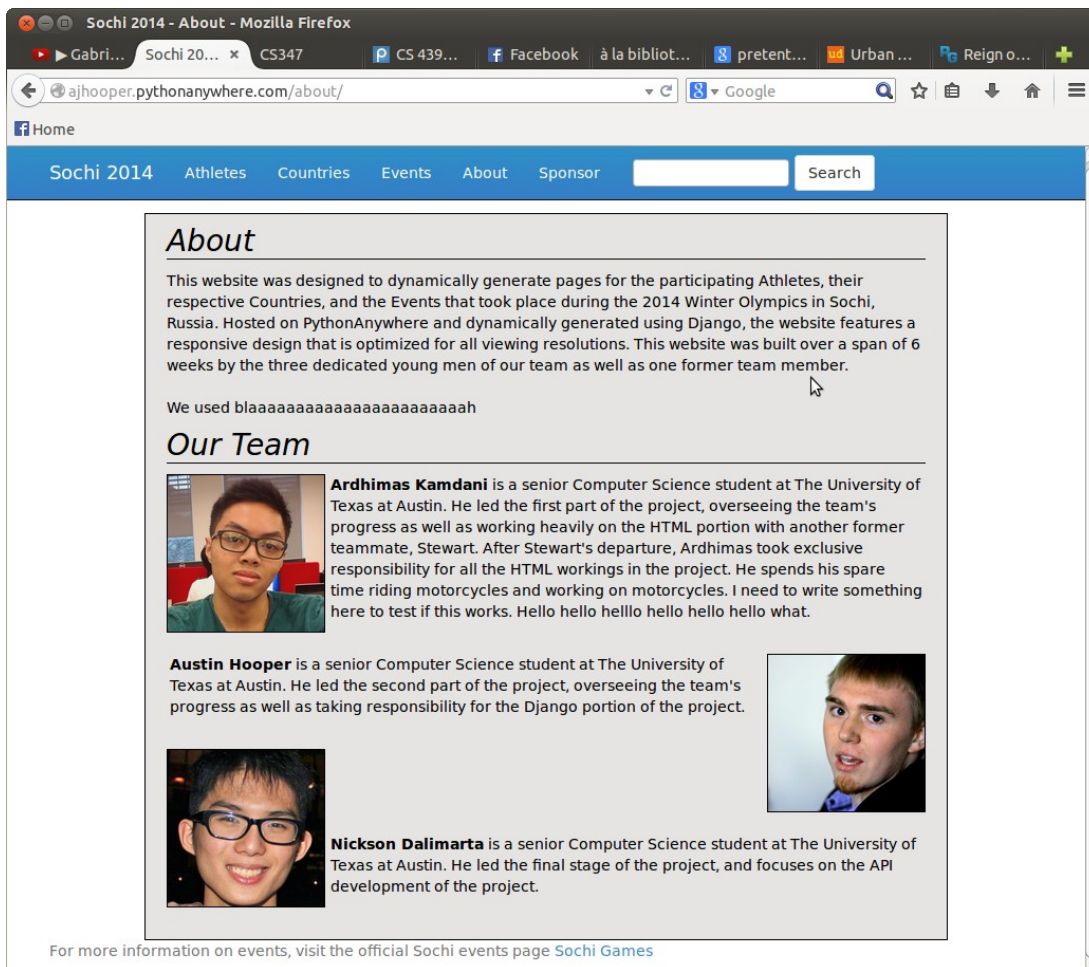
Our group has to exercise A'la Bibilothèque's API and integrate the content to our website. We decided to be creative, and turn this into a sponsor page. Every time a user clicks the sponsor page, one of the publishers from A'la Bibilothèque's site is randomly generated and acts as a sponsor for our site. The sponsor page will also display the book, author, and a brief summary of the book recommended by the publisher.



The look of our sponsor page, content is randomly generated.

ABOUT PAGE

Added for idb3 is this about page which tells user about us and each of our contributions to the site.



The look of our About page.