CISCO- Java Project

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Disclaimer:

This Document Contains the Project Approach, Problem Statement, and Solution Submitted by Me for CISCO NCH Java Project.

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SOURCE CODE:

Application.Properties

```
server.port = 8081
spring.data.mongodb.database=springmongodb
spring.data.mongodb.host=localhost
spring.data.mongodb.port=27017
weather.url=api.openweathermap.org/data/2.5/weather
weather.apikey=1c9770dfaf3b327dd03510a4c07b7f2d
```

Weather Configuration

```
package com.spring.restapi.config;

import org.springframework.beans.factory.annotation.Value;
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;
import org.springframework.context.annotation.PropertySource;
import
org.springframework.context.support.PropertySourcesPlaceholderConfigurer;

import com.spring.restapi.models.WeatherUrl;

/**
 * @author Devang
 */

@Configuration
@PropertySource("classpath:application.properties")
@ComponentScan
public class WeatherConfigurations {

    @Value("${weather.url}")
    private String url;

    @Value("${weather.apikey}")
    private String apikey;

    @Bean
    public static PropertySourcesPlaceholderConfigurer
propertySourcesPlaceholderConfigurer() {

        PropertySourcesPlaceholderConfigurer c = new
PropertySourcesPlaceholderConfigurer();
        c.setIgnoreUnresolvablePlaceholders(true);
        return c;
    }

    @Bean
    public WeatherUrl weatherUrl() {

        WeatherUrl weatherUrl = new WeatherUrl();
        weatherUrl.setUrl(url);
        weatherUrl.setApiKey(apikey);
        return weatherUrl;
    }

}
```

REST API Configuration

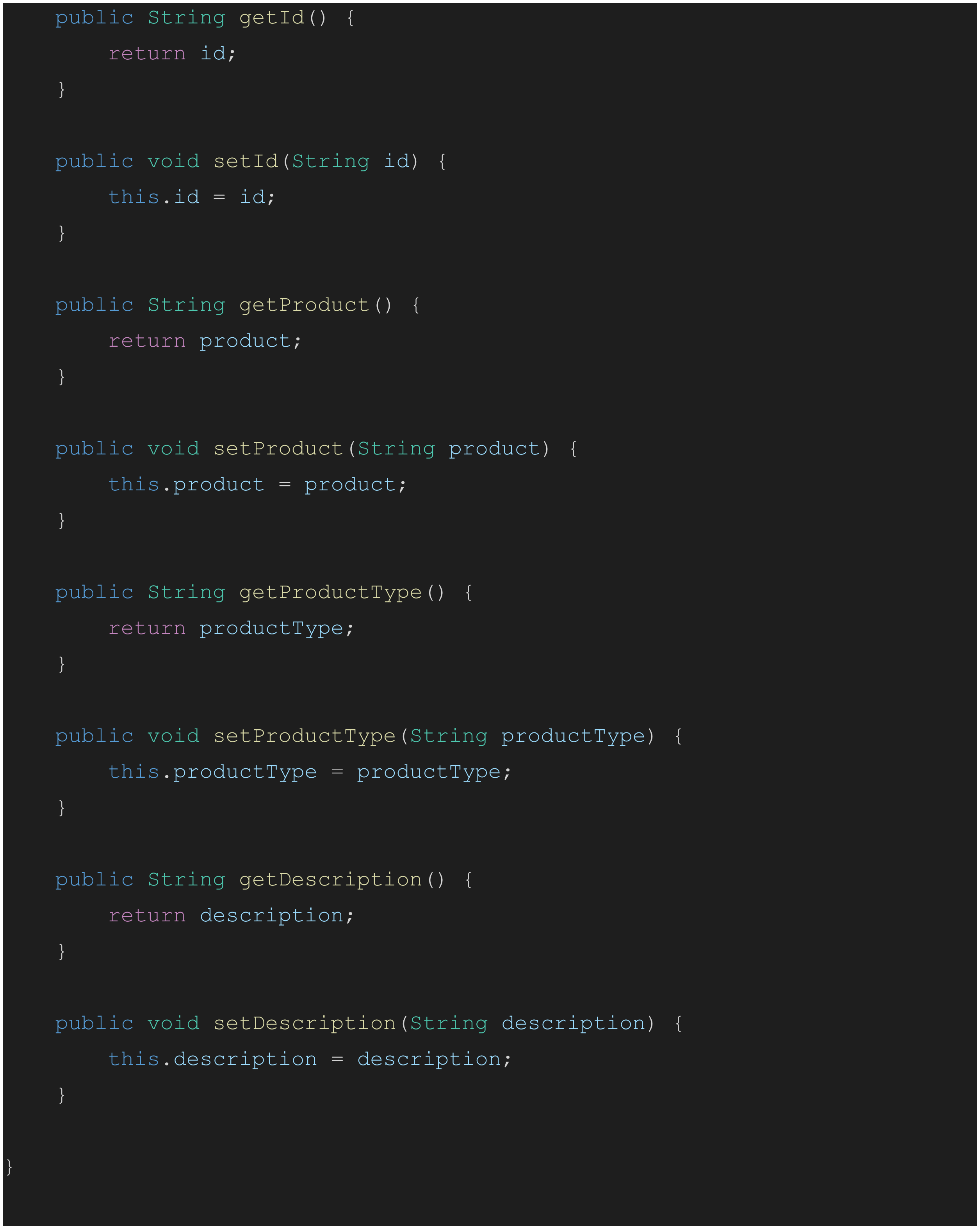
```
package com.spring.restapi.config;

/**
 * @author Devang
 */

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;
import org.springframework.web.client.RestTemplate;

@Configuration
public class RestTemplateConfig {

    @Bean
    public RestTemplate restTemplate() {
        return new RestTemplate();
    }

}
```

Form City Attribute Model

```
package com.spring.restapi.models;

/*
 * @author Devang
 */

public class FormCityAttribute {

    private String city;

    public String getCity() {
        return city;
    }

    public void setCity(String city) {
        this.city = city;
    }

    public FormCityAttribute(String city) {
        super();
        this.city = city;
    }

    public FormCityAttribute() {
        super();
    }
}
```

Product Module

```
package com.spring.restapi.models;

/**
 * @author Devang
 */

import java.io.Serializable;

import org.springframework.data.annotation.Id;
import org.springframework.data.mongodb.core.mapping.Document;

@Document(collection = "productdb")
public class Product implements Serializable {

    private static final long serialVersionUID = 5604944562275121069L;

    @Id
    private String id;
    private String product;
    private String productType;
    private String description;

    public Product(  String product,String productType, String
description) {

        this.product = product;
        this.description = description;
        this.productType = productType;
    }

    public Product() {
        super();
        // TODO Auto-generated constructor stub
    }
```

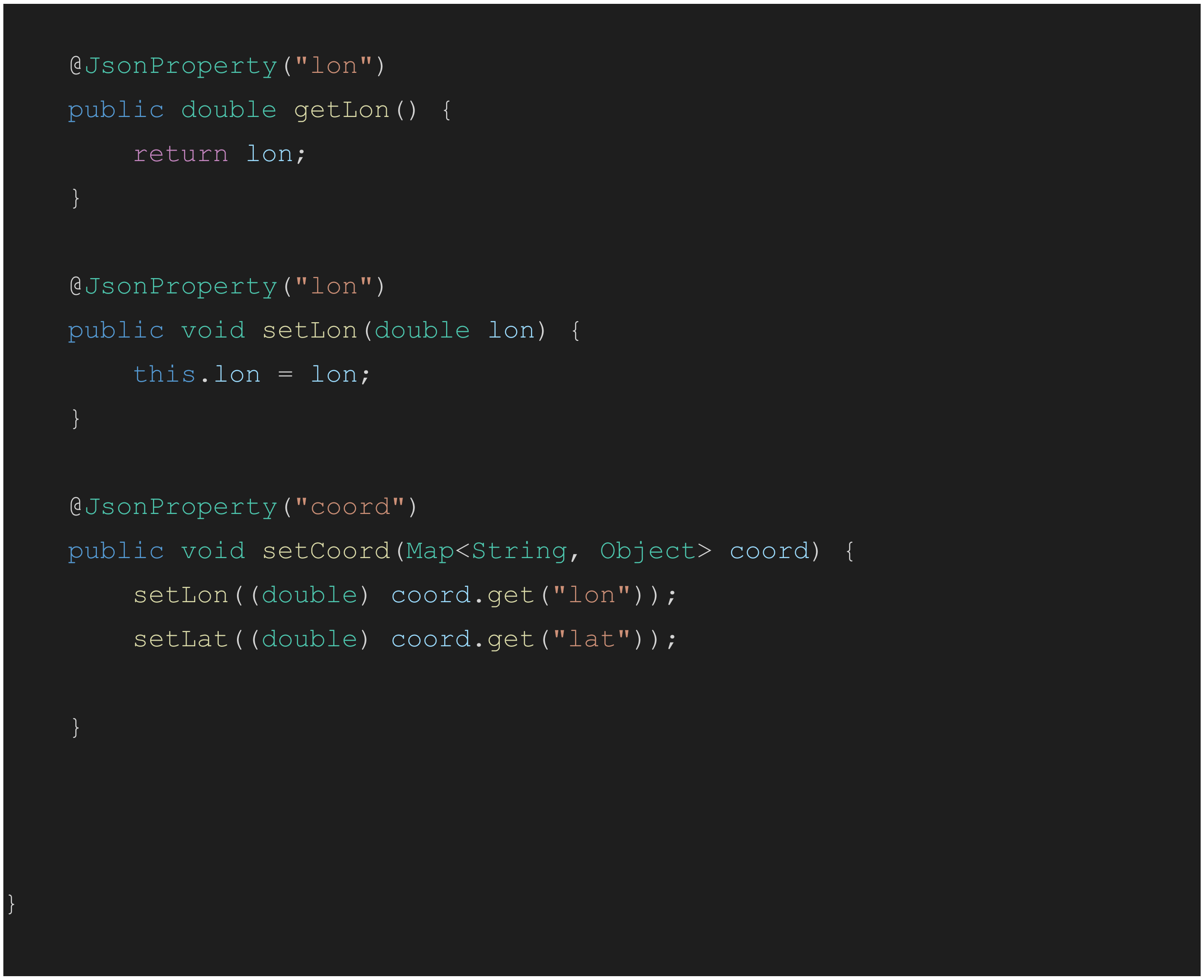


```java
    public String getId() {
        return id;
    }

    public void setId(String id) {
        this.id = id;
    }

    public String getProduct() {
        return product;
    }

    public void setProduct(String product) {
        this.product = product;
    }

    public String getProductType() {
        return productType;
    }

    public void setProductType(String productType) {
        this.productType = productType;
    }

    public String getDescription() {
        return description;
    }

    public void setDescription(String description) {
        this.description = description;
    }

}
```

Weather Module

```
package com.spring.restapi.models;

/*
 * @author Devang
 */



import com.fasterxml.jackson.annotation.JsonIgnoreProperties;
import com.fasterxml.jackson.annotation.JsonProperty;

import java.io.Serializable;
import java.util.List;
import java.util.Map;

import org.springframework.context.annotation.Bean;

@JsonIgnoreProperties(ignoreUnknown = true)
public class Weather implements Serializable {

    private static final long serialVersionUID = 7406210628182440902L;

    private String weatherDescription;
    private double lon;
    private String name;
    private double lat;

    @Bean
    public Weather weather() {
        return new Weather();
    }

    public Weather() {
        super();
        // TODO Auto-generated constructor stub
    }
```

```java
    public Weather(Weather weather) {
        // TODO Auto-generated constructor stub
    }

    public double getLat() {
        return lat;
    }

    @JsonProperty("lat")
    public void setLat(double lat) {
        this.lat = lat;
    }


    public String getName() {
        return name;
    }

    @JsonProperty("name")
    public void setName(String name) {
        this.name = name;
    }

    public String getWeatherDescription() {
        return weatherDescription;
    }

    public void setWeatherDescription(String weatherDescription) {
        this.weatherDescription = weatherDescription;
    }

    @JsonProperty("weather")
    public void setWeather(List<Map<String, Object>> weatherEntries) {
        Map<String, Object> weather = weatherEntries.get(0);
        setWeatherDescription((String) weather.get("description"));
    }
```



```
    @JsonProperty("lon")
    public double getLon() {
        return lon;
    }

    @JsonProperty("lon")
    public void setLon(double lon) {
        this.lon = lon;
    }

    @JsonProperty("coord")
    public void setCoord(Map<String, Object> coord) {
        setLon((double) coord.get("lon"));
        setLat((double) coord.get("lat"));

    }



}
```

WeatherURL Module

```java
package com.spring.restapi.models;

/*
 * @author Devang
 */


public class WeatherUrl {

    private String url;
    private String apiKey;

    public WeatherUrl() {
        super();
    }

    public String getApiKey() {
        return apiKey;
    }

    public void setApiKey(String apiKey) {
        this.apiKey = apiKey;
    }

    public String getUrl() {
        return url;
    }

    public void setUrl(String url) {
        this.url = url;
    }



}
```

Product Repository

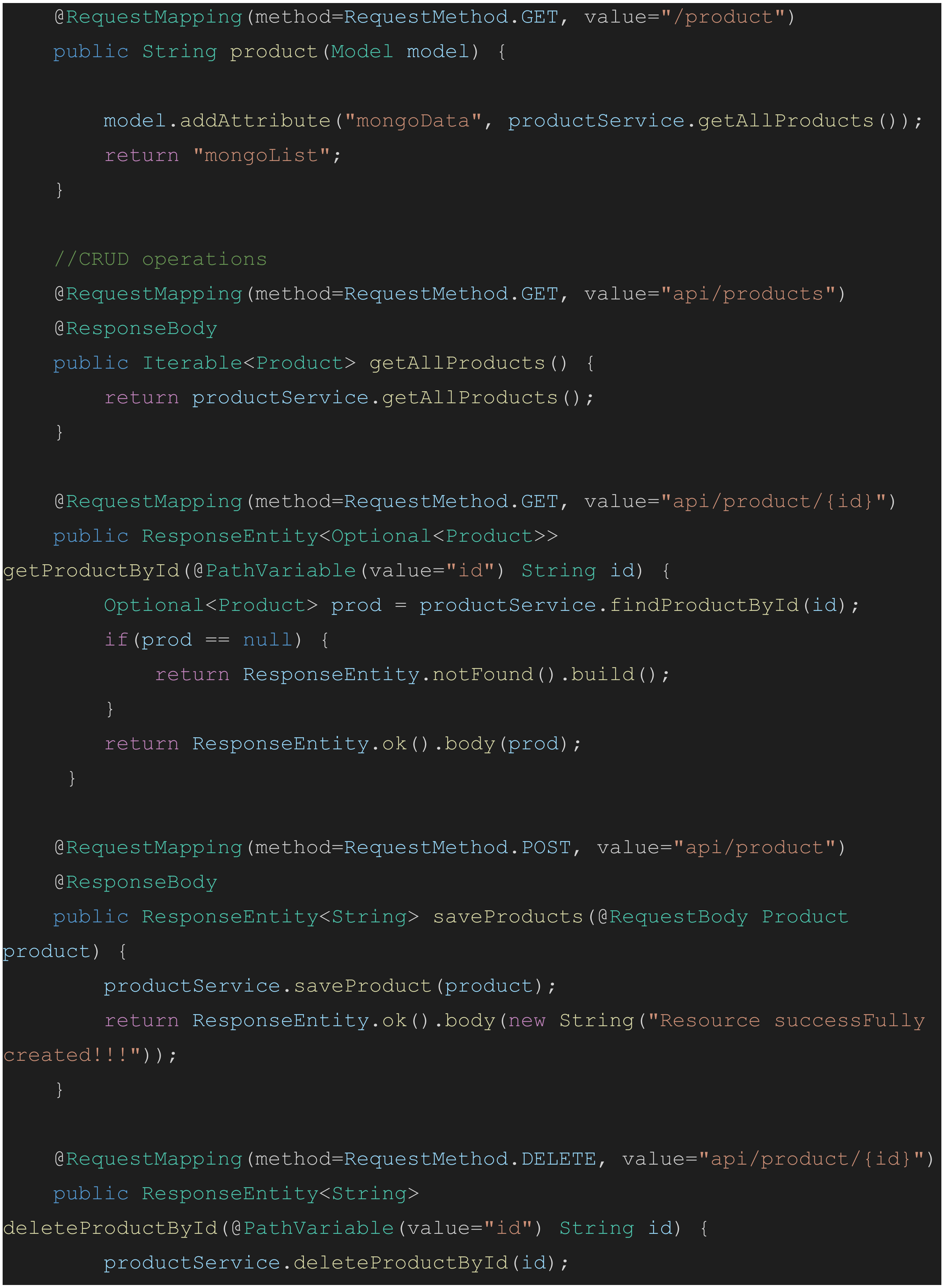
```java
package com.spring.restapi.repositories;

import java.util.Optional;

import org.springframework.data.mongodb.repository.MongoRepository;

import com.spring.restapi.models.Product;


/*
 * @author Devang
 */




public interface ProductRepository extends MongoRepository<Product,String>
{
    public Optional<Product> findById(String id);
}
```

Product Service

```
package com.spring.restapi.services;

import java.util.Optional;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Service;

import com.spring.restapi.models.Product;
import com.spring.restapi.repositories.ProductRepository;

/*
 * @author Devang
 */

@Service
public class ProductService {
    @Autowired
    private ProductRepository productRepository;

    public Iterable<Product> getAllProducts(){
        return productRepository.findAll();
    }

    public  Optional<Product> findProductById(String id) {
        return productRepository.findById(id);
    }

    public void saveProduct(Product product) {
        productRepository.save(product);
    }

    public void deleteProductById(String id) {
        productRepository.deleteById(id);
    }


}
```

Product Controller

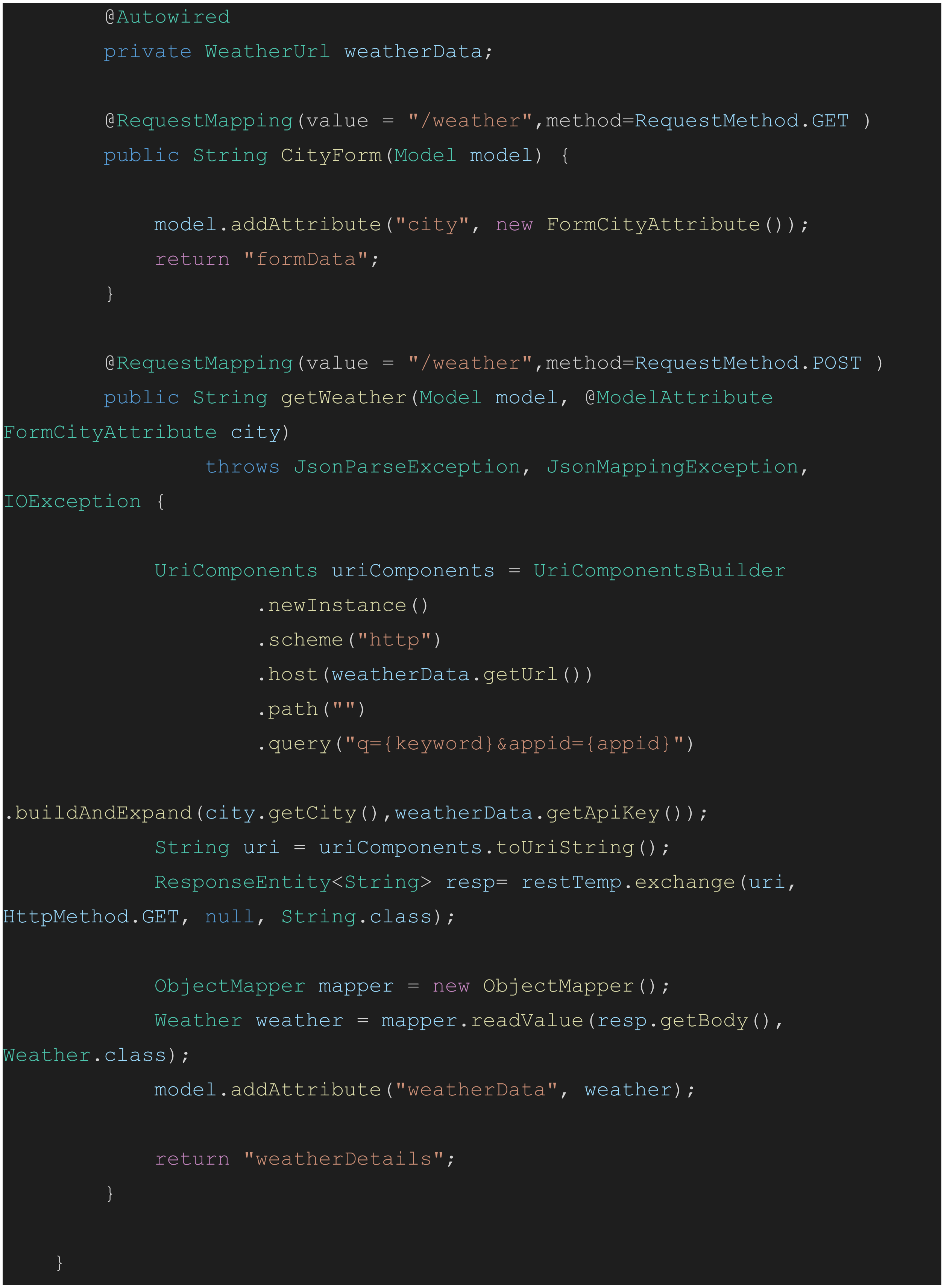
```
package com.spring.restapi.controllers;

import java.util.Optional;

/**
 * @author Devang
 */

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.http.ResponseEntity;
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.annotation.ResponseBody;

import com.spring.restapi.models.Product;
import com.spring.restapi.services.ProductService;

import org.springframework.ui.Model;


@Controller
public class ProductController {

    @Autowired
    private ProductService productService;

    @RequestMapping(method=RequestMethod.GET, value="/")
    public String indexPage() {

         return "redirect:" + "/product";
    }
```



```
    @RequestMapping(method=RequestMethod.GET, value="/product")
    public String product(Model model) {

        model.addAttribute("mongoData", productService.getAllProducts());
        return "mongoList";
    }

    //CRUD operations
    @RequestMapping(method=RequestMethod.GET, value="api/products")
    @ResponseBody
    public Iterable<Product> getAllProducts() {
        return productService.getAllProducts();
    }

    @RequestMapping(method=RequestMethod.GET, value="api/product/{id}")
    public ResponseEntity<Optional<Product>>
getProductById(@PathVariable(value="id") String id) {
        Optional<Product> prod = productService.findProductById(id);
        if(prod == null) {
            return ResponseEntity.notFound().build();
        }
        return ResponseEntity.ok().body(prod);
     }

    @RequestMapping(method=RequestMethod.POST, value="api/product")
    @ResponseBody
    public ResponseEntity<String> saveProducts(@RequestBody Product
product) {
        productService.saveProduct(product);
        return ResponseEntity.ok().body(new String("Resource successFully
created!!!"));
    }

    @RequestMapping(method=RequestMethod.DELETE, value="api/product/{id}")
    public ResponseEntity<String>
deleteProductById(@PathVariable(value="id") String id) {
        productService.deleteProductById(id);
        return ResponseEntity.ok().body(new String("Deleted
successFully"));

    }

}
```

Weather Controller

```
package com.spring.restapi.controllers;

/**
 * @author Devang
 */

import java.io.IOException;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.context.annotation.ComponentScan;
import org.springframework.http.HttpMethod;
import org.springframework.http.ResponseEntity;
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.ModelAttribute;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.client.RestTemplate;
import org.springframework.web.util.UriComponents;
import org.springframework.web.util.UriComponentsBuilder;

import com.fasterxml.jackson.core.JsonParseException;
import com.fasterxml.jackson.databind.JsonMappingException;
import com.fasterxml.jackson.databind.ObjectMapper;
import com.spring.restapi.models.FormCityAttribute;
import com.spring.restapi.models.Weather;
import com.spring.restapi.models.WeatherUrl;

    @ComponentScan("com.spring.restapi.config")
    @Controller
    public class WeatherController {

        @Autowired
        RestTemplate restTemp;
```



```
        @Autowired
        private WeatherUrl weatherData;

        @RequestMapping(value = "/weather",method=RequestMethod.GET )
        public String CityForm(Model model) {

            model.addAttribute("city", new FormCityAttribute());
            return "formData";
        }

        @RequestMapping(value = "/weather",method=RequestMethod.POST )
        public String getWeather(Model model, @ModelAttribute
FormCityAttribute city)
                throws JsonParseException, JsonMappingException,
IOException {

            UriComponents uriComponents = UriComponentsBuilder
                    .newInstance()
                    .scheme("http")
                    .host(weatherData.getUrl())
                    .path("")
                    .query("q={keyword}&appid={appid}")

.buildAndExpand(city.getCity(),weatherData.getApiKey());
            String uri = uriComponents.toUriString();
            ResponseEntity<String> resp= restTemp.exchange(uri,
HttpMethod.GET, null, String.class);

            ObjectMapper mapper = new ObjectMapper();
            Weather weather = mapper.readValue(resp.getBody(),
Weather.class);
            model.addAttribute("weatherData", weather);

            return "weatherDetails";
        }

    }
```

DEMO Application:

```
package com.spring.restapi;

/**
 * @author Devang

 */

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.annotation.ComponentScan;

@ComponentScan("com.spring.restapi")
@SpringBootApplication
public class DemoApplication {

    public static void main(String[] args) {
        SpringApplication.run(DemoApplication.class, args);
    }
}
```