

# Programming Case study - Browse / Front facing app

I implemented the solution to this problem using Spring Boot with JPA and Spring Data Rest on Java 1.8. It is configured to use the H2 in memory database.

All source is located at <https://github.com/meadot01/myRetailProblem>. The following is a description of all included classes:

**Product** - This is the Product Entity class and describes how the product will be stored. It is annotated with the JPA Entity annotation to allow it to be stored in the DB.

**ProductRepository** - This is an interface that extends the Spring Data CRUDRepository. Have added 2 custom find methods (findProductBySku and findProductByCategory). The implementation of the methods in ProductRepository is done by Spring Data.

**ProductController** - This is the implementation of the rest interface. There are three rest endpoints implemented which are documented at the end of this document. This implements both of the bonus endpoints as well.

**TimestampedEntityAuditListener** - I wanted the last\_updated timestamp in Product to automatically update. I was having some trouble getting the built-in AuditingEntityListener to work so I created this custom one. It sets the current time in the last\_updated field whenever the object is written or updated. Product has an annotation to use this listener.

**MyRetailApplication** - Base Spring Boot class

**MyRetailDBTests** - Junit tests to test read and write methods on the ProductRepository.

**MyRetailRestTest** - Tests all rest endpoints in ProductController.

# Rest Endpoints

The following are descriptions and example calls of all rest endpoints

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/product/{productId} - returns a single product with the given productId

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<http://localhost:8989/product/5555>

```
{
  "id":5555,
  "sku":"AEX143",
  "name":"Stroller",
  "category":"baby",
  "last_updated":1454464982385
}
```

---

/products - returns all products as a list

---

<http://localhost:8989/products>

```
[
  {
    "id":5543,
    "sku":"IOL123",
    "name":"Optimus Prime",
    "category":"toys",
    "last_updated":1454464982386
  },
  {
    "id":5555,
    "sku":"AEX143",
    "name":"Stroller",
    "category":"baby",
    "last_updated":1454464982385
  },
  {
    "id":7563,
    "sku":"XYZ904",
    "name":"Sega Genesis",

```

```
    "category": "toys",
    "last_updated": 1454464982386
  }
]
```

---

BONUS:

/products?ids={productIds} - Returns all products with ids that match an id in the given productIds. productIds is a comma separated list of integers.

---

<http://localhost:8989/products?ids=5555,5543>

```
[
  {
    "id": 5543,
    "sku": "IOL123",
    "name": "Optimus Prime",
    "category": "toys",
    "last_updated": 1454464982386
  },
  {
    "id": 5555,
    "sku": "AEX143",
    "name": "Stroller",
    "category": "baby",
    "last_updated": 1454464982385
  }
]
```

---

BONUS:

/category/{categoryName}/products - returns a list of all products with a category of categoryName.

---

<http://localhost:8989/category/toys/products>

```
[
  {
    "id": 5543,
    "sku": "IOL123",
    "name": "Optimus Prime",
    "category": "toys",
    "last_updated": 1454464982386
  }
]
```

```
},  
{  
  "id":7563,  
  "sku":"XYZ904",  
  "name":"Sega Genesis",  
  "category":"toys",  
  "last_updated":1454464982386  
}  
]
```