Sale Campaign Management System

A company manages an impressive catalogue of approximately 100,000 diverse products, each with a comprehensive set of attributes:

- Product ID
- Title
- Description
- Maximum Retail Price (MRP)
- Current Price
- Discount
- Inventory Count (indicating product availability)

As part of your project, you're tasked with designing the following crucial APIs:

Paginated Product API:

API Schema - `GET /products?page=2&pageSize=10`

```
{
  "products": [
    {
      "id": "jeiu8f03", "mrp": 300,
      "currentPrice": 270,
      "discount": 10,
      "inventory": 2
    },
    // More product entries...
  ],
  "page": 1,
  "pageSize": 10,
  "totalPages": 2000
}
```

Creating a Sale Campaign:

API Schema - `POST /campaigns`

```
{
  "startDate": "12/09/2023", "endDate": "17/09/2023", "title":
  "Diwali Discount", "campaignDiscount": [
    {
      "productId": "jeiu8f03", "discount": "10"
},

                                              {

      "productId": "jeiu8f02", "discount": "20"
```

```
      }
      // Additional discount entries...
   ]
}
```

Your mission involves implementing these APIs, which will enable the dynamic adjustment of product prices during designated sale periods. For example, if a product initially carries an MRP of Rs. 1000, is presently priced at Rs. 900, and is granted an additional 10% discount during a sale, the product will be temporarily retailed at Rs. 810. After the sale concludes, the product's price will revert to its standard Rs. 900. **As a system I should be able to query the following information from the database**

1. All products and the ir information including current price adjusted with any ongoing sale
2. Pricing history of each product
3. All campaign informations - past, current and upcoming

Technologies to be used

Language & Framework - Java, Springboot
Database - MySql

You are free to build extra APIs as required.