
SPRING BATCH

JAVA ACADEMY - XIDERAL

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Introduction

In this project, I utilized Spring Batch to manage and process data related to books from a library. Spring Batch is a robust framework for batch processing, which allows for the handling of large volumes of data efficiently. It provides essential features like transaction management, chunk processing, and job scheduling, making it ideal for tasks that require high-performance data handling.

Entity

The Customer class represents a book record with attributes such as ID, title, author, year, category, language, and origin country. It uses JPA annotations to map the class to a database table named CUSTOMERS_INFO.

```
1 package com.javatechie.spring.batch.entity;
2
3 import lombok.AllArgsConstructor;
4
5 @Entity
6 @Table(name = "CUSTOMERS_INFO")
7 @Data
8 @AllArgsConstructor
9 @NoArgsConstructor
10 public class bookEntity {
11
12     @Id
13     @Column(name = "CUSTOMER_ID")
14     private int id;
15     @Column(name = "title")
16     private String title;
17     @Column(name = "author")
18     private String author;
19     @Column(name = "year")
20     private int year;
21     @Column(name = "category")
22     private String category;
23     @Column(name = "languaje")
24     private String languaje;
25     @Column(name = "originCountry")
26     private String originCountry;
27
28 }
```

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Repository

bookrepository extends JpaRepository

```
1 package com.javatechie.spring.batch.repository;
2
3 import com.javatechie.spring.batch.entity.bookEntity;
4
5 public interface bookrepository extends JpaRepository<bookEntity,Integer> {
6
7 }
8 }
```

Spring Batch Configuration

This configuration class sets up the Spring Batch job to read book data from a CSV file and write it into a database.

```
package com.javatechie.spring.batch.config;

import com.javatechie.spring.batch.entity.bookEntity;

@Configuration
@EnableBatchProcessing
@AllArgsConstructor
public class SpringBatchConfig {

    private JobBuilderFactory jobBuilderFactory;

    private StepBuilderFactory stepBuilderFactory;

    private bookrepository customerRepository;

    @Bean
    public FlatFileItemReader<bookEntity> reader() { //Bring the csv to the code
        FlatFileItemReader<bookEntity> itemReader = new FlatFileItemReader<>();
        itemReader.setResource(new FileSystemResource("src/main/resources/books_list.csv"));
        itemReader.setName("csvReader");
        itemReader.setLinesToSkip(1);
        itemReader.setLineMapper(lineMapper());
        return itemReader;
    }

    private LineMapper<bookEntity> lineMapper() { //mapped
        DefaultLineMapper<bookEntity> lineMapper = new DefaultLineMapper<>();

        DelimitedLineTokenizer lineTokenizer = new DelimitedLineTokenizer();
        lineTokenizer.setDelimiter(",");
        lineTokenizer.setStrict(false);
        lineTokenizer.setNames("id", "title", "author", "year", "category", "language", "originCountry");

        BeanWrapperFieldSetMapper<bookEntity> fieldSetMapper = new BeanWrapperFieldSetMapper<>();
        fieldSetMapper.setTargetType(bookEntity.class);

        lineMapper.setLineTokenizer(lineTokenizer);
        lineMapper.setFieldSetMapper(fieldSetMapper);
        return lineMapper;
    }
}
```

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```
@Bean
public Step step1() {

    Supplier<RepositoryItemWriter<bookEntity>> supplier = () -> {
        RepositoryItemWriter<bookEntity> writer = new RepositoryItemWriter<>();
        writer.setRepository(customerRepository);
        writer.setMethodName("save");
        return writer;
    };

    return stepBuilderFactory.get("csv-step")
        .<bookEntity, bookEntity>chunk(10)
        .reader(reader())
        .processor((ItemProcessor<bookEntity, bookEntity>) cliente -> {
            if(cliente.getLenguaje().equals("French"))
                return cliente;
            return null;
        })
        .writer(supplier.get())
        .taskExecutor(taskExecutor())
        .build();
}

@Bean
public Job runJob() { //import csv
    return jobBuilderFactory
        .get("importBooks")
        .flow(step1())
        .end()
        .build();
}

@Bean
public TaskExecutor taskExecutor() {
    SimpleAsyncTaskExecutor asyncTaskExecutor = new SimpleAsyncTaskExecutor();
    asyncTaskExecutor.setConcurrencyLimit(10);
    return asyncTaskExecutor;
}
```

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Controller

The JobController exposes a REST that, when accessed, initiates the batch job responsible for importing book data.

```
package com.javatechie.spring.batch.controller;

import org.springframework.batch.core.Job;

@RestController
@RequestMapping("/jobs")
public class JobController {

    @Autowired
    private JobLauncher jobLauncher;

    @Autowired
    private Job job;

    @PostMapping("/importBooks")
    public void importCsvToDBJob() {
        JobParameters jobParameters = new JobParametersBuilder()
            .addLong("startAt", System.currentTimeMillis())
            .toJobParameters();

        try {
            jobLauncher.run(job, jobParameters);
        } catch (JobExecutionAlreadyRunningException |
            JobRestartException |
            JobInstanceAlreadyCompleteException |
            JobParametersInvalidException e) {
            e.printStackTrace();
        }
    }
}
```

Outputs

Empty table

Result Grid							
		Filter Rows:		Edit:		Export/Import:	
	customer_id	author	category	language	origin_country	title	year
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

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Table of books in English.

Result Grid							
		Filter Rows:	Edit:		Export/Import:		Wrap Cell Content
	customer_id	author	category	language	origin_country	title	year
▶	1	Harper Lee	Fiction	English	USA	To Kill a Mockingbird	1960
	3	F. Scott Fitzgerald	Classic	English	USA	The Great Gatsby	1925
	5	Jane Austen	Romance	English	UK	Pride and Prejudice	1813
	10	J.R.R. Tolkien	Fantasy	English	UK	The Hobbit	1937
	8	J.D. Salinger	Fiction	English	USA	The Catcher in the Rye	1951
	11	Herman Melville	Adventure	English	USA	Moby Dick	1851
	20	James Joyce	Modernist	English	Ireland	Ulysses	1922
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Table of books in French.

	customer_id	author	category	language	origin_country	title	year
▶	1	Harper Lee	Fiction	English	USA	To Kill a Mockingbird	1960
	3	F. Scott Fitzgerald	Classic	English	USA	The Great Gatsby	1925
	5	Jane Austen	Romance	English	UK	Pride and Prejudice	1813
	10	J.R.R. Tolkien	Fantasy	English	UK	The Hobbit	1937
	8	J.D. Salinger	Fiction	English	USA	The Catcher in the Rye	1951
	11	Herman Melville	Adventure	English	USA	Moby Dick	1851
	20	James Joyce	Modernist	English	Ireland	Ulysses	1922
	15	Marcel Proust	Modernist	French	France	In Search of Lost Time	1913
	19	Albert Camus	Existential Fiction	French	France	The Stranger	1942
	14	Victor Hugo	Historical Fiction	French	France	Les Misérables	1862
	18	Gustave Flaubert	Realism	French	France	Madame Bovary	1857
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL