

Spring Batch is a **lightweight framework** which is used to develop **Batch Applications** that are used in Enterprise Applications.

Batch processing is a processing mode which involves execution of series of automated complex jobs without user interaction. A batch process handles bulk data and runs for a long time.

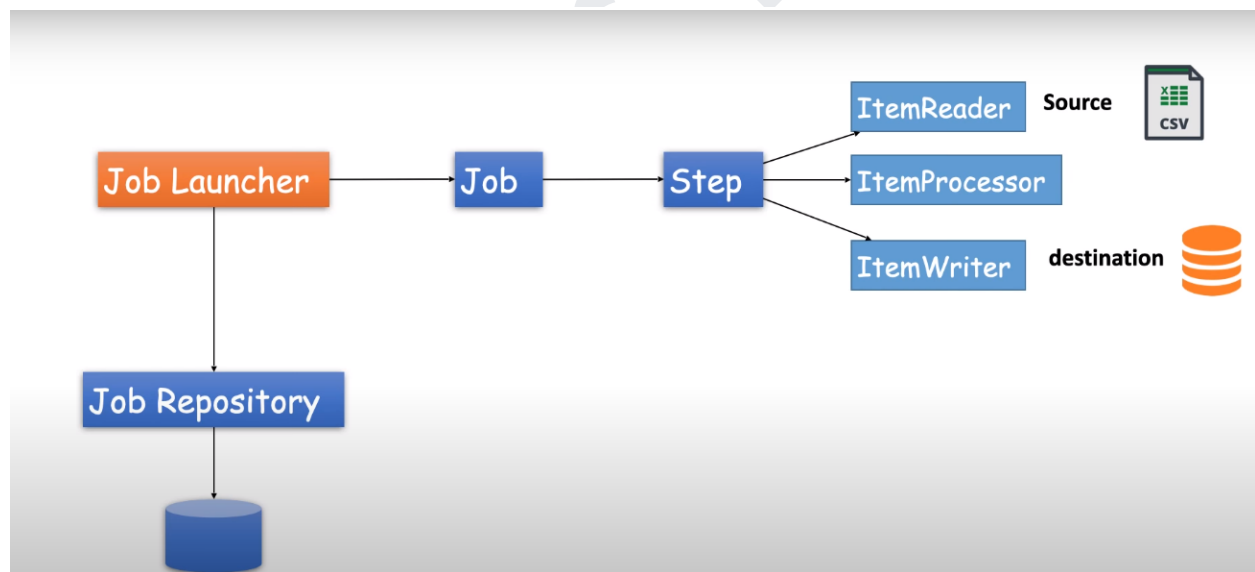
Batch Processing is a technique which process the data in a large group instead of single element of data. Where we can process a high volume of the data with minimal human interaction.

Spring Batch is one of the core module of spring framework and using this spring batch we can create robust batch processing system.

When to Use?

When we need to transfer huge no of the data source to destination that time must use batch concept.

Spring Batch key Component?



1- Job Launcher.

An interface for running a Job. we can say it is entry point to initiate any job in Spring Batch. It has method called **run()** who will trigger the **Job** object.

Once Job Launcher called the **run()** method, Immediately create twocomponent called **Job** and **Job Repository**

2-Job: to create the **Job** need to JobBuilderFactory

A job is the batch process that is to be executed. It runs from start to finish without interruption. This job is further divided into steps (or a job contains steps).

A Job can have multiple **Steps**.

3-Job Repository:

Help to maintains state of job whether is succeed or failed.

Suppose that spring batch job is running and an error is occurred how does spring batch know that an error has occurred and jobs need to be re run.

A Job repository in Spring Batch provides Create, Retrieve, Update, and Delete (CRUD) operations for the JobLauncher, Job, and Step implementations.

4-Step: to create the **Step** need to StepBuilderFactory

Job Component talk to another component called **Step**.

Step is nothing Combination of three component

- 1-ItemReader
- 2-ItemProcessor
- 3-ItemWrite

ItemReader: Read the data from the source.

Example: ItemReader the read the data from .csv file

ItemProcessor: Process the data, If we want to do any operation between reader and writer then need to use ItemProcessor.

ItemWriter: Write the data to the destination

Example: ItemWriter write the data from the database.

How to create application

- 1- Need to maven dependency of batch, web, jpa, mysql in pom.xml
- 2- Make an entity class based on excel file or csv file fields.
- 3- Need to do BatchConfiguration
 - Inject dependency of Step by **StepBuilderFactory** class and Job by **JobBuilderFactory** class.
- 4- Need to Create **ItemReader** object into config file by **FlatFileItemReader class**. The **FlatFileItemReader** is used to reads lines from the input resources.
- 5- Need to **LineMapper** interface to map lines from file to domain object.

6- Need to create **ItemProcessor**

- First create a class like xyzProcessor and implements ItemProcessor<source,target> then override the method and after that create the bean into config class by @bean annotation and return processor class like xyzProcessor

7-Need to create the **ItemWriter** by using RepositoryItem<SalesRecord>

8-Need to create Step by using **stepBuilderFactory** Dependency Injection,
And give the Objects of **reader,processor,writer** to the **Step**.

9- Need to give the **Step** Object to **Job** Object by **jobBuilderFactory**

10- Need to make a controller and provides two dependency injection of **JobLauncher, Job**