

# Easy Batch

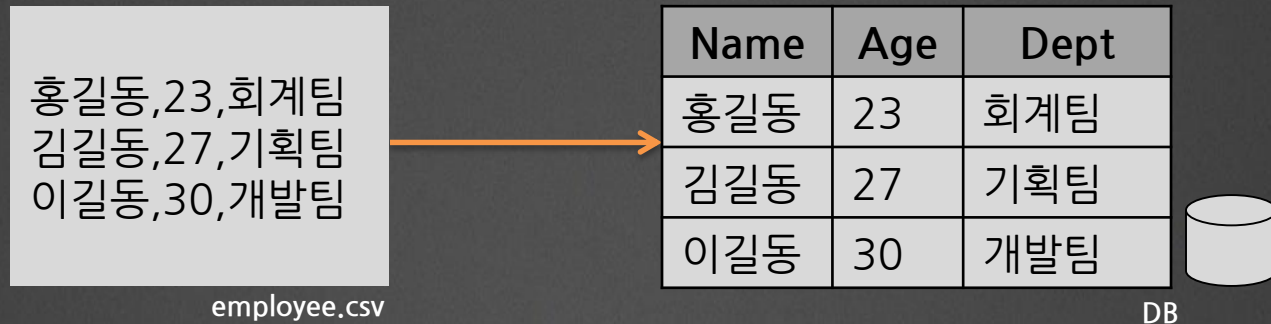
---

Easy Batch 팀

# Batch 란?

- 일괄 작업 프로그램
- 데이터 백업, 결산 등

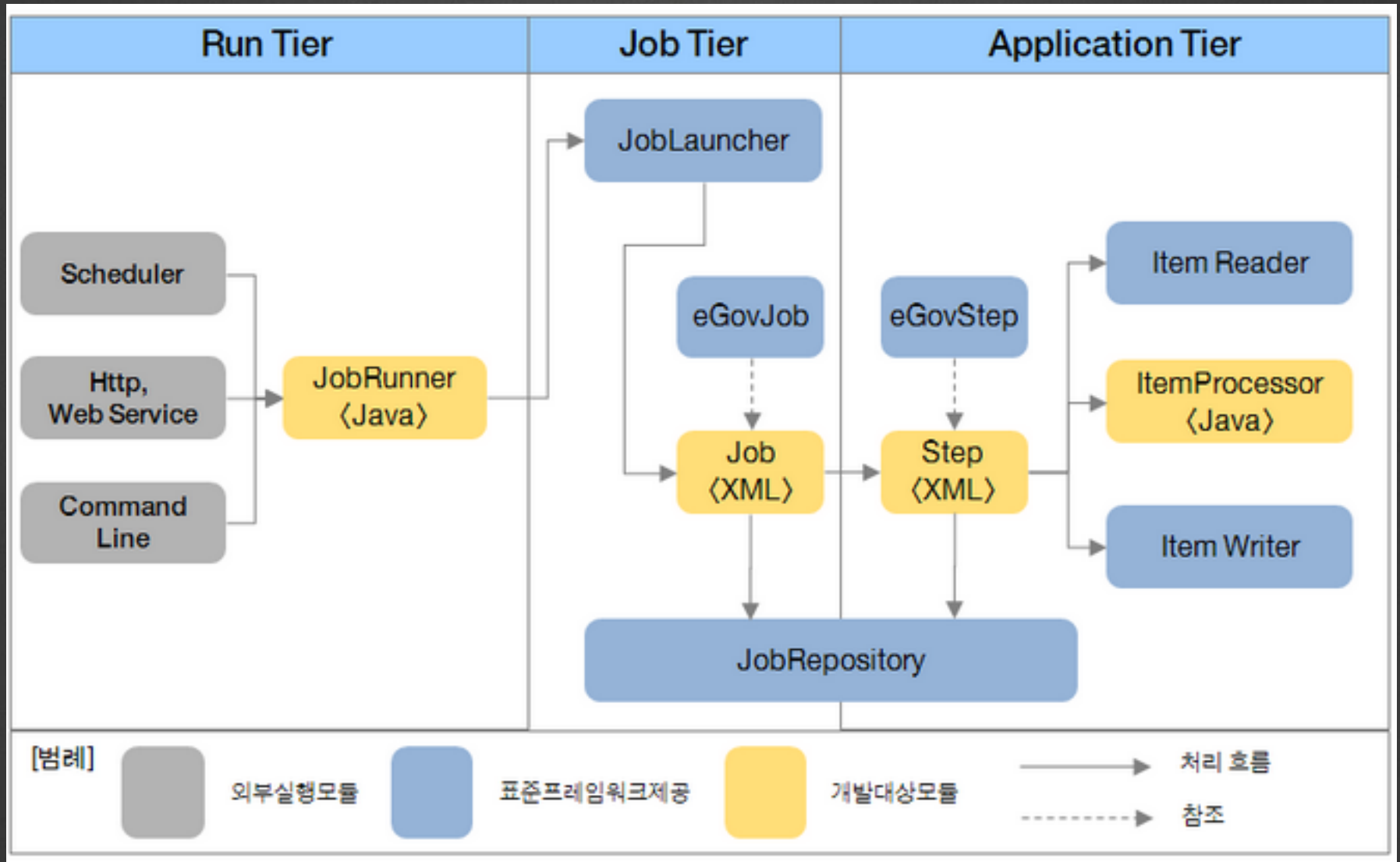
# File 데이터를 DB에 옮기고 싶어요!



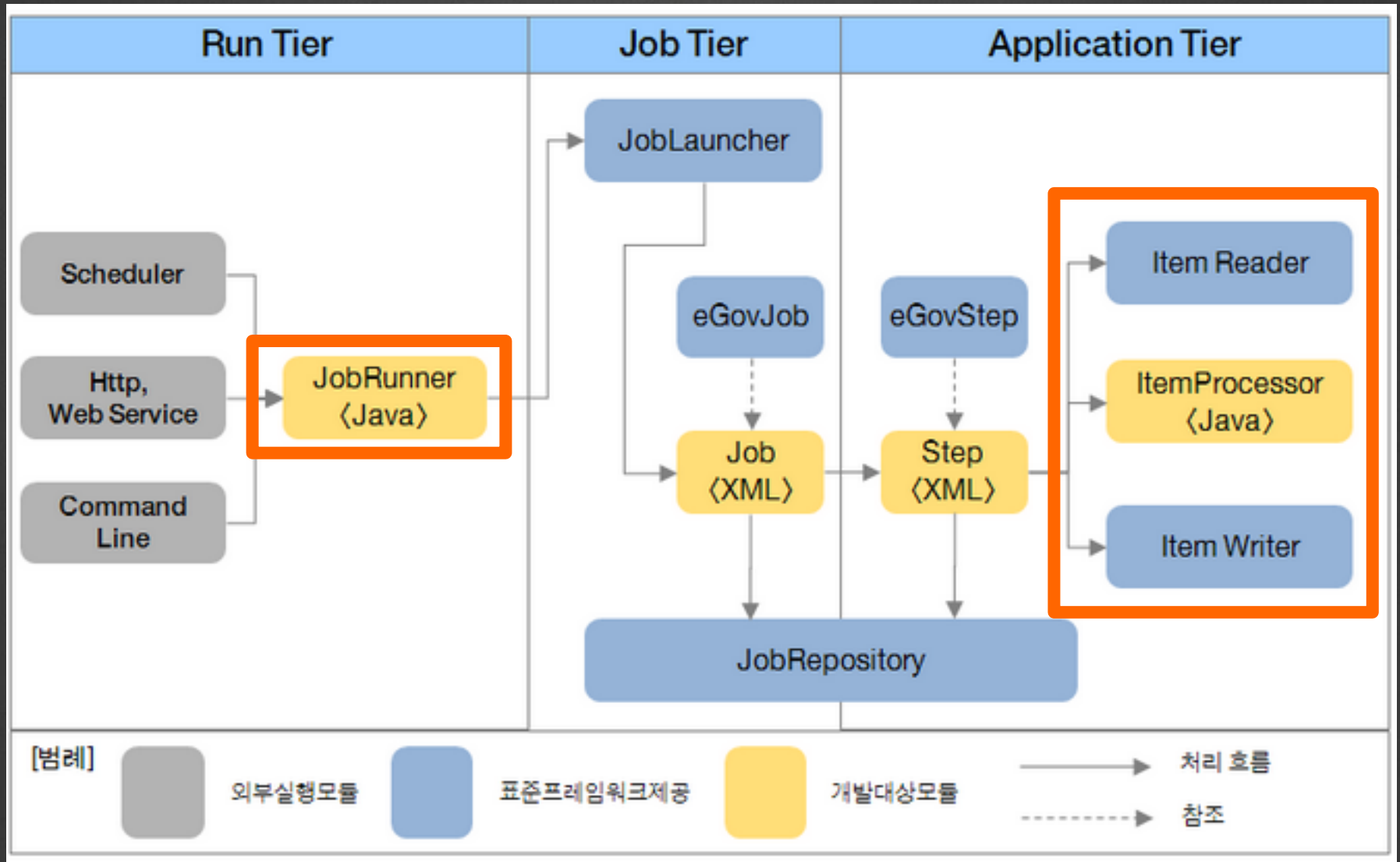
# File 데이터를 DB에 옮기고 싶어요!



# eGov Batch F/W는 좋은 선택입니다



# eGov Batch F/W는 좋은 선택입니다



# eGov Batch F/W를 이용하면...

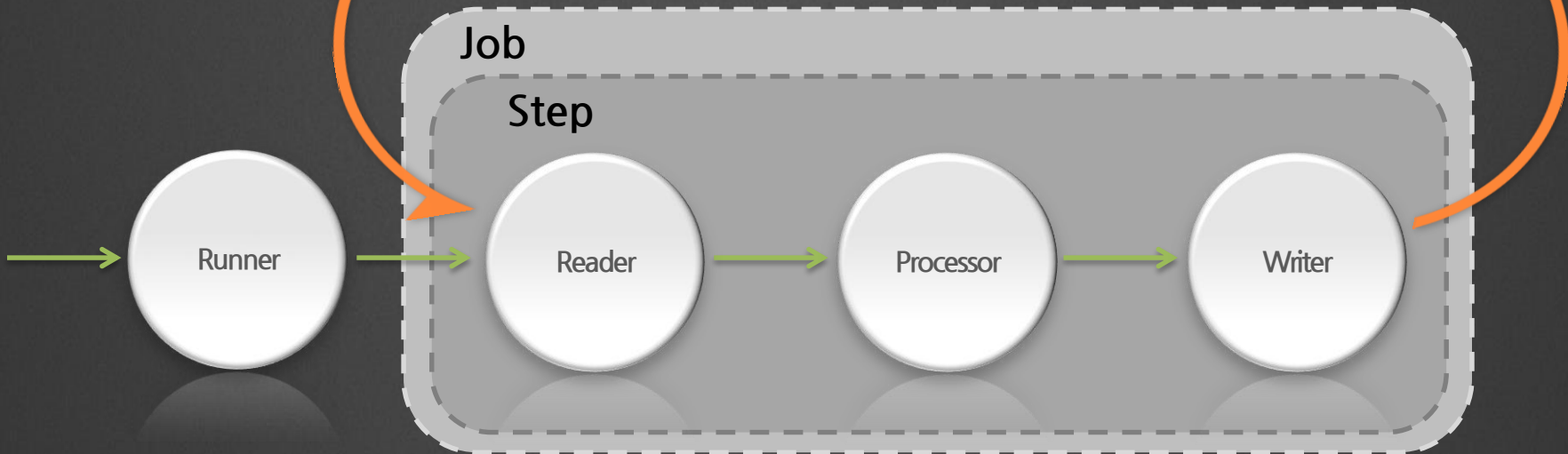
홍길동,23,회계팀  
김길동,27,기획팀  
이길동,30,개발팀

employee.csv

Name	Age	Dept
홍길동	23	회계팀
김길동	27	기획팀
이길동	30	개발팀



DB



# 일단 필요한 컴포넌트를 선택한 후,

AggregatItemReader

AmqpItemReader

FlatFileItemReader

HibernateCursorItemReader

HibernatePagingItemReader

IbatisPagingItemReader

JmsItemReader

JpaPagingItemReader

ListItemReader

외 5개 Reader 中

AmqpItemWriter

CompositItemWriter

FlatFileItemWriter

GemfireItemWriter

HibernateItemWriter

IbatisBatchItemWriter

ItemWriterAdapter

JdbcBatchItemWriter

JmsItemWriter

외 7개 Writer 中



# XML 설정합니다

Job/Step 설정

```
<job id="employeeJob" parent="eGovBaseJob" xmlns="http://www.springframework.org/schema/batch">
  <step id="dlimitedToJdbcStep" parent="eGovBaseStep">
    <tasklet>
      <chunk reader="delimitedItemReader" processor="itemProcessor" writer="jdbcItemWriter" commit-interval="2" />
    </tasklet>
  </step>
</job>
```

Reader 설정

```
<bean id="delimitedItemReader" class="org.springframework.batch.item.file.FlatFileItemReader" scope="step">
  <property name="resource" value="./employee.csv" />
  <property name="lineMapper">
    <bean class="egovframework.rte.bat.core.item.file.mapping.EgovDefaultLineMapper">
      <property name="lineTokenizer">
        <bean class="egovframework.rte.bat.core.item.file.transform.EgovDelimitedLineTokenizer">
          <property name="delimiter" value="," />
        </bean>
      </property>
      <property name="objectMapper">
        <bean class="egovframework.rte.bat.item.file.mapping.EgovObjectMapper">
          <property name="type" value="egovframework.rte.bat.sample.Employee" />
          <property name="names" value="name,age,dept" />
        </bean>
      </property>
    </bean>
  </property>
</bean>
```

Writer 설정

```
<bean id="jdbcItemWriter" class="egovframework.rte.bat.core.item.database.EgovJdbcBatchItemWriter">
  <property name="assertUpdates" value="true" />
  <property name="itemPreparedStatementSetter">
    <bean class="egovframework.rte.bat.core.item.database.support.EgovMethodMapItemPreparedStatementSetter" />
  </property>
  <property name="sql" value="UPDATE EMPLOYEE set AGE =?, DEPT =? WHERE NAME =?" />
  <property name="params" value="name" />
  <property name="dataSource" ref="dataSource" />
</bean>
```

Processor 설정

```
<bean id="itemProcessor" class="egovframework.rte.bat.sample.domain.trade.CustomerCreditIncreaseProcessor" />
```

# But, 이중에 필수 설정은?

Job/Step 설정

```
<job id="employeeJob" parent="eGovBaseJob" xmlns="http://www.springframework.org/schema/batch">
  <step id="dlimitedToJdbcStep" parent="eGovBaseStep">
    <tasklet>
      <chunk reader="delimitedItemReader" processor="itemProcessor" writer="jdbcItemWriter" commit-interval="2" />
    </tasklet>
  </step>
</job>
```

Reader 설정

```
<bean id="delimitedItemReader" class="org.springframework.batch.item.file.FlatFileItemReader" scope="step">
  <property name="resource" value="./employee.csv" />
  <property name="lineMapper">
    <bean class="egovframework.rte.bat.core.item.file.mapping.EgovDefaultLineMapper">
      <property name="lineTokenizer">
        <bean class="egovframework.rte.bat.core.item.file.transform.EgovDelimitedLineTokenizer">
          <property name="delimiter" value="," />
        </bean>
      </property>
      <property name="objectMapper">
        <bean class="egovframework.rte.bat.core.item.file.mapping.EgovObjectMapper">
          <property name="type" value="egovframework.rte.bat.sample.Employee" />
          <property name="names" value="name,age,dept" />
        </bean>
      </property>
    </bean>
  </property>
</bean>
```

Writer 설정

```
<bean id="jdbcItemWriter" class="egovframework.rte.bat.core.item.database.EgovJdbcBatchItemWriter">
  <property name="assertUpdates" value="true" />
  <property name="itemPreparedStatementSetter">
    <bean class="egovframework.rte.bat.core.item.database.support.EgovMethodMapItemPreparedStatementSetter" />
  </property>
  <property name="sql" value="UPDATE EMPLOYEE set AGE =?, DEPT =? WHERE NAME =?" />
  <property name="params" value="name" />
  <property name="dataSource" ref="dataSource" />
</bean>
```

Processor 설정

```
<bean id="itemProcessor" class="egovframework.rte.bat.sample.domain.trade.CustomerCreditIncreaseProcessor" />
```

# 다른 Reader/Writer도 마찬가지로입니다

## Jdbc Reader 설정

```
<bean id="jdbcItemReader" class="org.springframework.batch.item.database.JdbcCursorItemReader" scope="step">
  <property name="dataSource" ref="dataSource" />
  <property name="sql" value="select ID, NAME, CREDIT from CUSTOMER" />
  <property name="verifyCursorPosition" value="true" />
  <property name="rowMapper">
    <bean class="egovframework.rte.bat.sample.domain.trade.CustomerCreditRowMapper" />
  </property>
</bean>
```

## FixedLength File Writer 설정

```
<bean id="fixedLengthItemWriter" class="org.springframework.batch.item.file.FlatFileItemWriter" scope="step">
  <property name="resource" value="./target/employee(2).txt" />
  <property name="lineAggregator">
    <bean class="egovframework.rte.bat.core.item.file.transform.EgovFixedLengthLineAggregator">
      <property name="fieldExtractor">
        <bean class="egovframework.rte.bat.core.item.file.transform.EgovFieldExtractor">
          <property name="names" value="name,age,dept" />
        </bean>
      </property>
      <property name="fieldRanges" value="9,2" />
    </bean>
  </property>
</bean>
```

# 생각해 보니...

매번 우리는 Reader/Writer 관련하여,

- 많은 것들 중에서 **선택**해야 하고,
- 필수 정보량 대비 **많은 설정**을 해야 하며,
- 작업의 수가 많아지면 **더** 그래야 한다

# 실제로도 그렇습니다

- 약 **30**여 개의 Reader/Writer 와  
각각 **2~3**개의 관련 Bean 들이 있으며,
- 이 설정이 전체 설정의 약 **60**% 이상을 차지한다

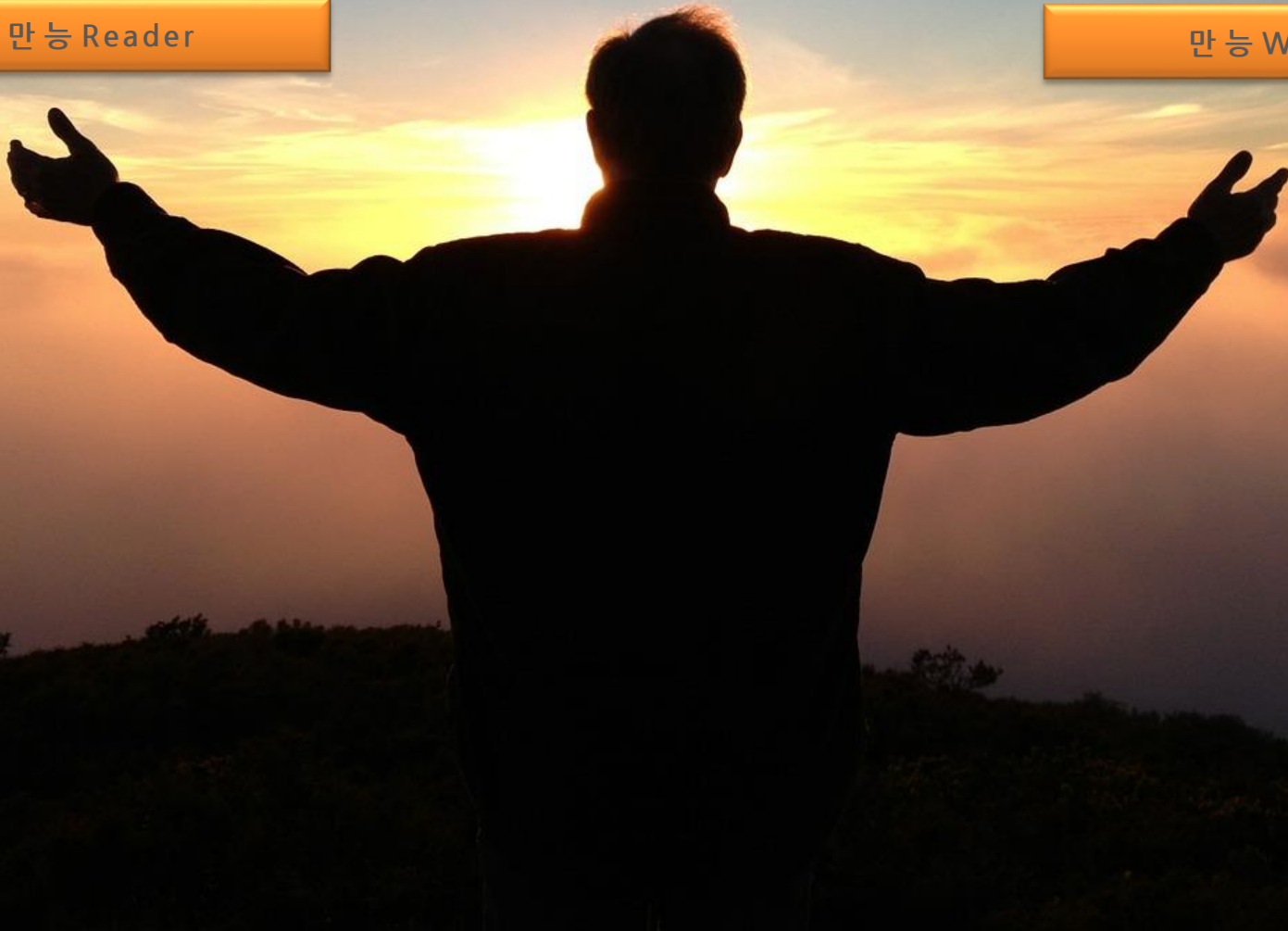


생각보다 쉽지 않아요

# 그래서 만들었습니다

만능 Reader

만능 Writer



# 실제 이름은 이렇습니다

- ~~만능 Reader, 만능 Writer~~
- DefaultItemReader, DefaultItemWriter



# 만능Reader, Writer 사용법 1

- 만능Reader/Writer 를 설정한다

```
<job id="employeeJob" parent="eGovBaseJob" xmlns="http://www.springframework.org/schema/batch">  
  <step id="dlimitedToJdbcStep" parent="eGovBaseStep">  
    <tasklet>  
      <chunk reader="defaultReader" writer="defaultWriter" commit-interval="2" />  
    </tasklet>  
  </step>  
</job>
```

```
<bean id="defaultReader" class="egovframework.rte.bat.item.DefaultItemReader" scope="step">  
  <property name="dataSource" ref="dataSource" />  
</bean>  
  
<bean id="defaultWriter" class="egovframework.rte.bat.item.DefaultItemWriter" scope="step">  
  <property name="dataSource" ref="dataSource" />  
</bean>
```

```
<bean id="itemProcessor" class="egovframework.rte.bat.sample.domain.trade.CustomerCreditIncreaseProcessor"  
</>
```

employee\_job.xml

# 만능Reader, Writer 사용법 2

- 실행한다

```
bash$ java EgovCommandLineJobRunner employee_job.xml employee date= 2014/10/31
```

# 만능Reader, Writer 사용법 3

## • 콘솔 Log 상의 가이드에 따른다

가이드내용  
적용

```
Caused by: egovframework.rte.bat.item.ItemReaderWriterConfCheckException:
    testStep1.reader.resource.type=delimitedFile'처럼, 입력 리소스 타입을 Job 파라미터로 입력하세요.
    리소스 타입 종류) delimitedFile, fixedLengthFile, jdbcDb
    at egovframework.rte.bat.item.DefaultItemReader.makeReaderConfigValue(DefaultItemReader.java:193)
    at egovframework.rte.bat.item.DefaultItemReader.beforeStep(DefaultItemReader.java:92)
```

실행 후  
가이드내용  
확인

```
bash$ java EgovCommandLineJobRunner employee_job.xml employee date= 2014/10/31
    testStep1.reader.resource.type=delimitedFile
```

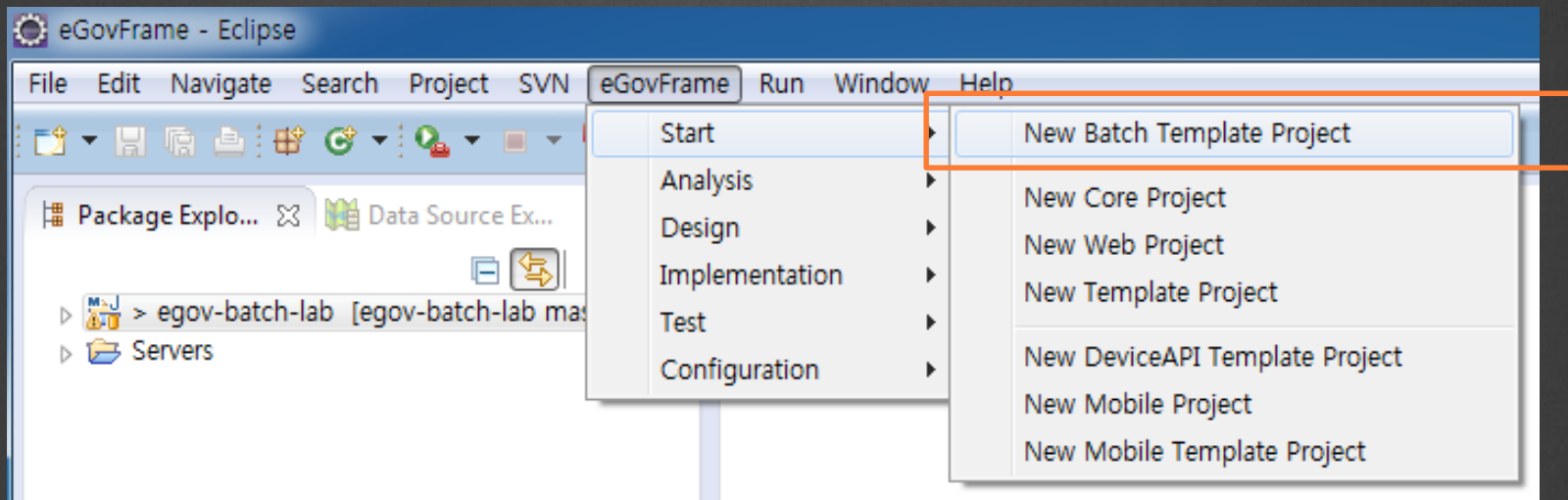
가이드내용  
적용

```
Caused by: egovframework.rte.bat.item.ItemReaderWriterConfCheckException:
    testStep1스텝의 Reader 설정에서 resourceName, delimiter, names, type 은 필수입니다. 다음처럼 설정하세요.
    testStep1.reader.resource.name=./inputs/csvData.csv
    testStep1.reader.delimiter=,
    testStep1.reader.field.names=name,age
    testStep1.reader.vo.type=aa.bb.TestVo
    at egovframework.rte.bat.item.DefaultItemReader.makeReaderConfigValue(DefaultItemReader.java:141)
    at egovframework.rte.bat.item.DefaultItemReader.beforeStep(DefaultItemReader.java:92)
```

```
bash$ java EgovCommandLineJobRunner employee_job.xml employee date= 2014/10/31
    testStep1.reader.resource.type=delimitedFile
    testStep1.reader.resource.name=./inputs/employee.csv
    testStep1.reader.delimiter=,
    testStep1.reader.field.names=name,age,dept
    testStep1.reader.vo.type= egovframework.rte.bat.sample.Employee
```

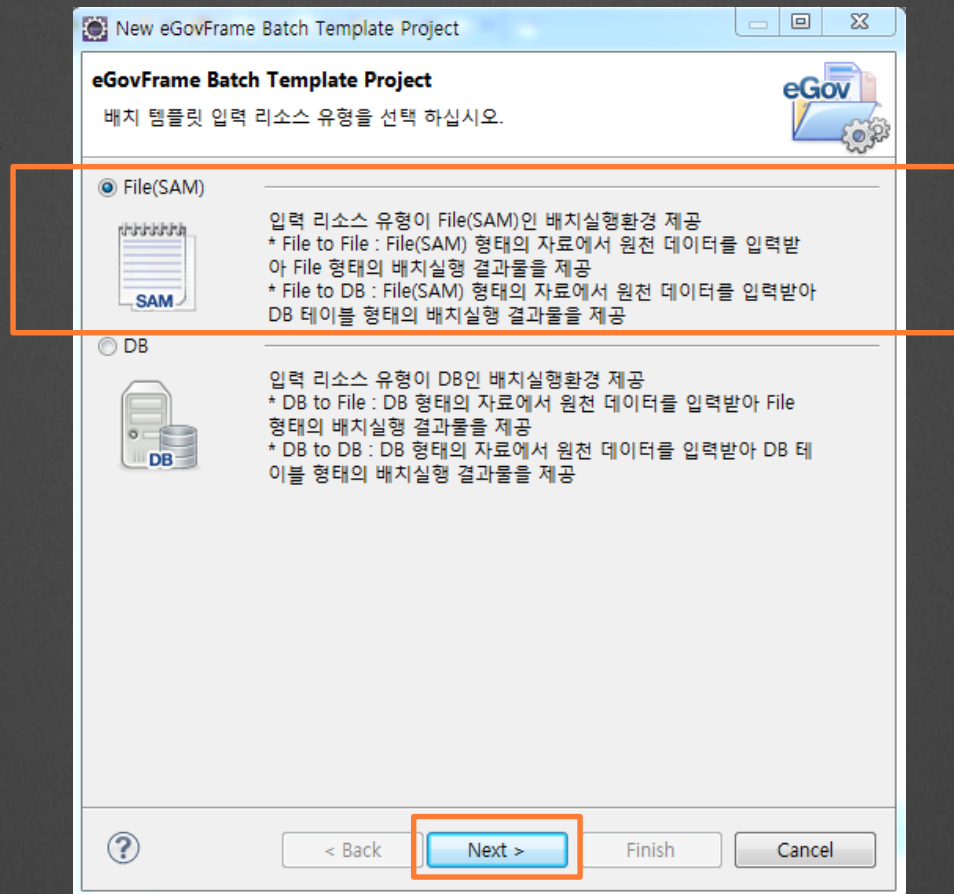
# 시연(1/13)

- new Batch Template Project



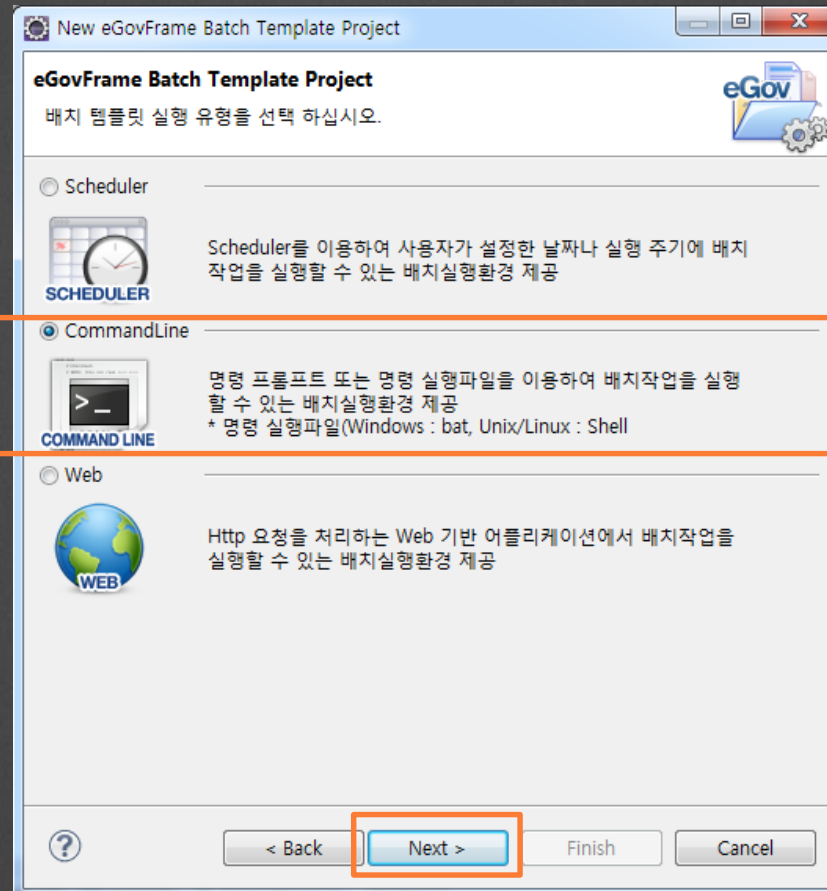
# 시연(2/13)

## • 입력 리소스 유형 선택



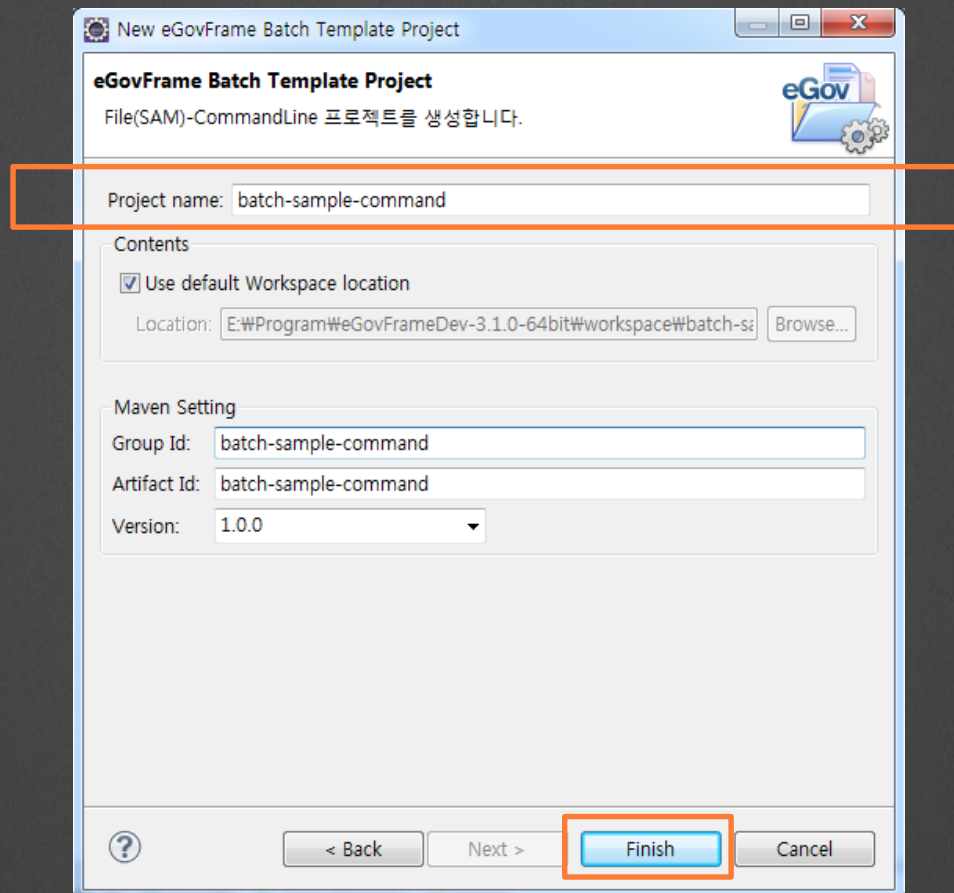
# 시연(3/13)

## • 실행 유형 선택



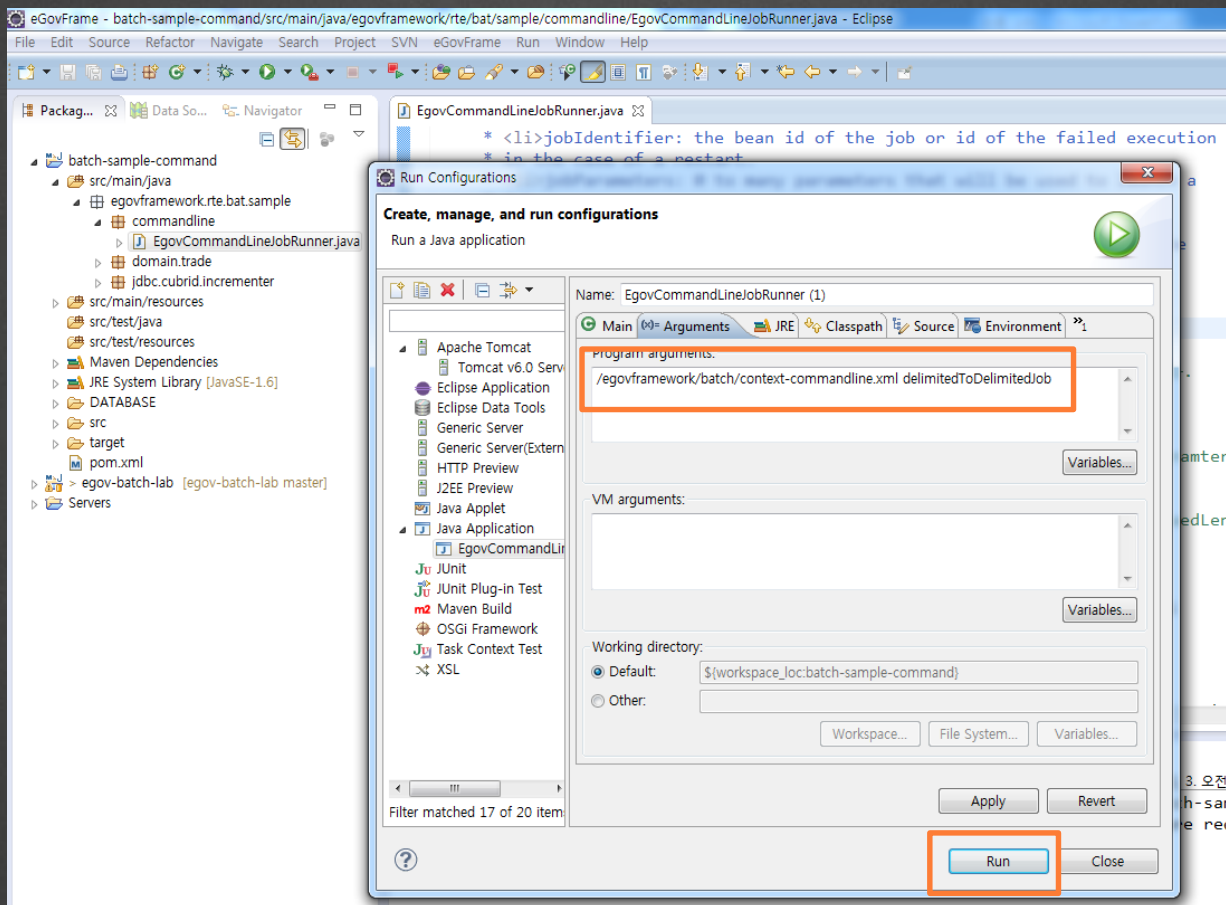
# 시연(4/13)

- Project 생성



# 시연(5/13)

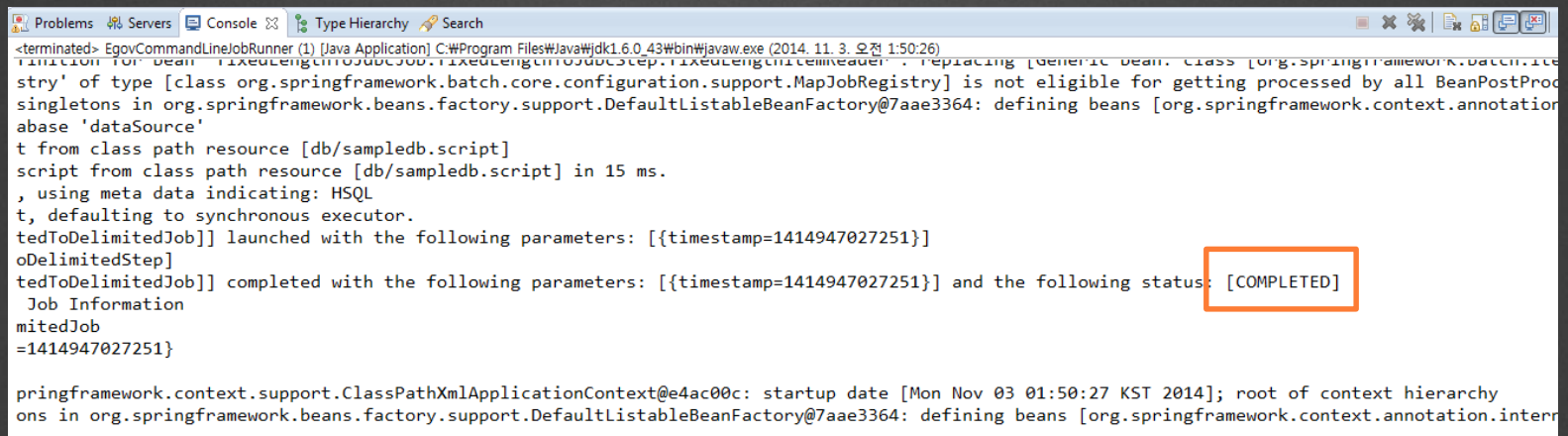
- Job 설정 XML & Job 명을 파라미터로 주고 실행





# 시연(6/13)

## • 실행 결과 확인



```
<terminated> EgovCommandLineJobRunner (1) [Java Application] C:\Program Files\Java\jdk1.6.0_43\bin\javaw.exe (2014. 11. 3. 오전 1:50:26)
...
' of type [class org.springframework.batch.core.configuration.support.MapJobRegistry] is not eligible for getting processed by all BeanPostPro
singletons in org.springframework.beans.factory.support.DefaultListableBeanFactory@7aae3364: defining beans [org.springframework.context.annotation.interr
abase 'dataSource'
t from class path resource [db/sampled.db.script]
script from class path resource [db/sampled.db.script] in 15 ms.
, using meta data indicating: HSQL
t, defaulting to synchronous executor.
tedToDelimitedJob]] launched with the following parameters: [{timestamp=1414947027251}]
oDelimitedStep
tedToDelimitedJob]] completed with the following parameters: [{timestamp=1414947027251}] and the following status: [COMPLETED]
Job Information
mitedJob
=1414947027251}

pringframework.context.support.ClassPathXmlApplicationContext@e4ac00c: startup date [Mon Nov 03 01:50:27 KST 2014]; root of context hierarchy
ons in org.springframework.beans.factory.support.DefaultListableBeanFactory@7aae3364: defining beans [org.springframework.context.annotation.interr
```

# 시연(7/13)

## • XML 확인해 보기

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.springframework.org/schema/beans http://www.springframework.org/schema/beans/spr
http://www.springframework.org/schema/batch http://www.springframework.org/schema/batch/spring-batch-2.1.xsd

<import resource="abstract/eGovBase.xml" />

<job id="delimitedToDelimitedJob" parent="eGovBaseJob" xmlns="http://www.springframework.org/schema/batch">
<step id="delimitedToDelimitedStep" parent="eGovBaseStep">
<tasklet>
<chunk reader="delimitedToDelimitedJob.delimitedToDelimitedStep.delimitedItemReader"
processor="delimitedToDelimitedJob.delimitedToDelimitedStep.itemProcessor"
writer="delimitedToDelimitedJob.delimitedToDelimitedStep.delimitedItemWriter"
commit-interval="2" />
</tasklet>
</step>
</job>

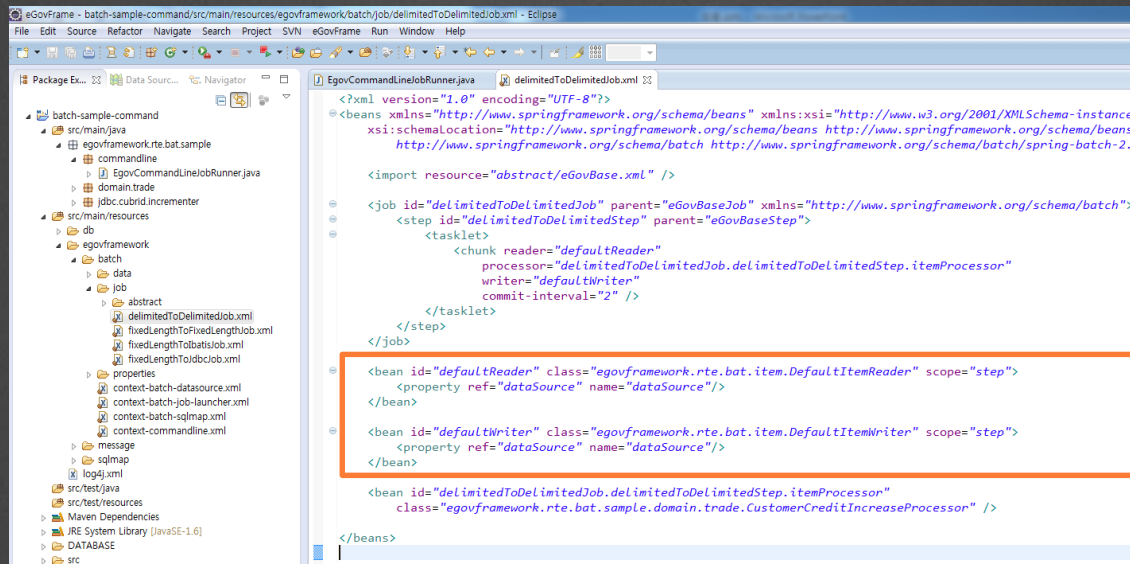
<bean id="delimitedToDelimitedJob.delimitedToDelimitedStep.delimitedItemReader"
class="org.springframework.batch.item.file.FlatFileItemReader" scope="step">
<property name="resource" value="file:./src/main/resources/egovframework/batch/data/inputs/csvData.csv" />
<property name="lineMapper">
<bean class="egovframework.rte.bat.core.item.file.mapping.EgovDefaultLineMapper">
<property name="lineTokenizer">
<bean class="egovframework.rte.bat.core.item.file.transform.EgovDelimitedLineTokenizer">
<property name="delimiter" value="," />
</bean>
</property>
<property name="objectMapper">
<bean class="egovframework.rte.bat.core.item.file.mapping.EgovObjectMapper">
<property name="type"
value="egovframework.rte.bat.sample.domain.trade.CustomerCredit" />
<property name="names" value="name,credit" />
</bean>
</property>
</bean>
</property>
</bean>
<bean id="delimitedToDelimitedJob.delimitedToDelimitedStep.delimitedItemWriter"
class="org.springframework.batch.item.file.FlatFileItemWriter" scope="step">
<property name="resource" value="file:./target/test-outputs/csvOutput.csv" />
<property name="lineAggregator">
<bean class="org.springframework.batch.item.file.transform.DelimitedLineAggregator">
<property name="delimiter" value="," />
<property name="fieldExtractor">
<bean class="egovframework.rte.bat.core.item.file.transform.EgovFieldExtractor">
<property name="names" value="name,credit" />
</bean>
</property>
</bean>
</property>
</bean>

<bean id="delimitedToDelimitedJob.delimitedToDelimitedStep.itemProcessor"
class="egovframework.rte.bat.sample.domain.trade.CustomerCreditIncreaseProcessor" />

</beans>
```

# 시연(8/13)

## • DefaultItemReader/Writer 사용하기



```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.springframework.org/schema/beans http://www.springframework.org/schema/beans/
http://www.springframework.org/schema/batch http://www.springframework.org/schema/batch/spring-batch-2.1

<import resource="abstract/egovBase.xml" />

<job id="delimitedToDelimitedJob" parent="egovBaseJob" xmlns="http://www.springframework.org/schema/batch">
  <step id="delimitedToDelimitedStep" parent="egovBaseStep">
    <tasklet>
      <chunk reader="defaultReader"
processor="delimitedToDelimitedJob.delimitedToDelimitedStep.itemProcessor"
writer="defaultWriter"
commit-interval="2" />
    </tasklet>
  </step>
</job>

<bean id="defaultReader" class="egovframework.rte.bat.item.DefaultItemReader" scope="step">
  <property ref="dataSource" name="dataSource"/>
</bean>

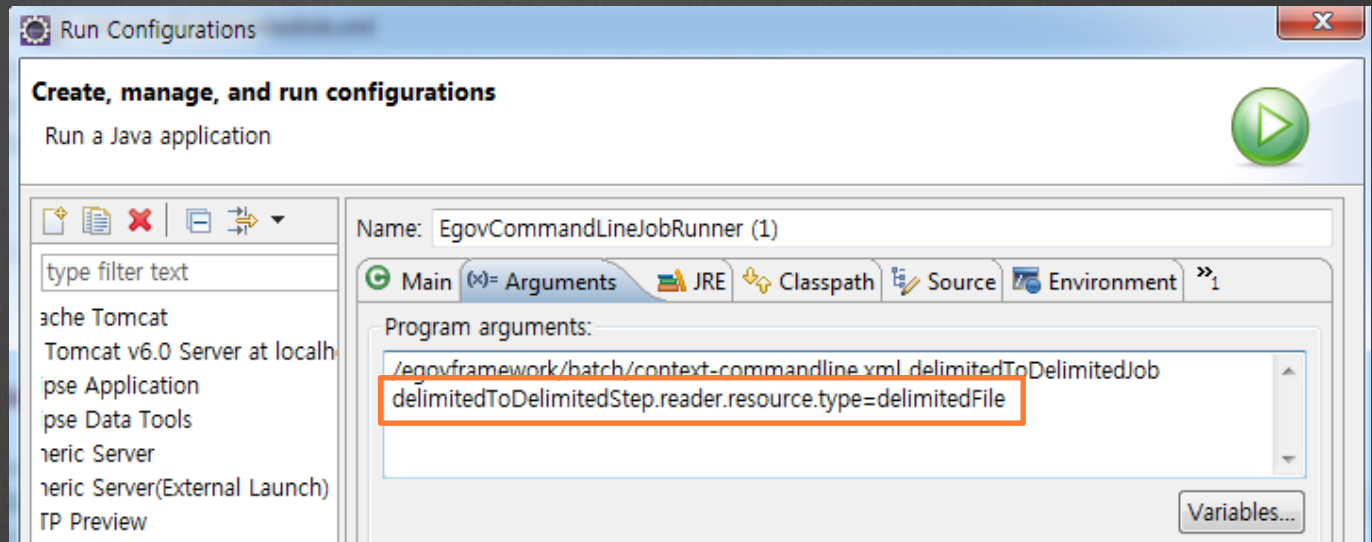
<bean id="defaultWriter" class="egovframework.rte.bat.item.DefaultItemWriter" scope="step">
  <property ref="dataSource" name="dataSource"/>
</bean>

<bean id="delimitedToDelimitedJob.delimitedToDelimitedStep.itemProcessor"
class="egovframework.rte.bat.sample.domain.trade.CustomerCreditIncreaseProcessor" />
</beans>
```

# 시연(9/13)

- 실행 후 가이드에 따름(입력 리소스 타입 선택)

```
Problems Servers Console Type Hierarchy Search
<terminated> EgovCommandLineJobRunner (1) [Java Application] C:#Program Files#Java#jdk1.6.0_43#bin#javaw.exe (2014. 11. 3. 오전 2:00:03)
  at java.lang.reflect.Method.invoke(Method.java:597)
  at org.springframework.batch.support.SimpleMethodInvoker.invokeMethod(SimpleMethodInvoker.java:105)
  ... 18 more
Caused by: egovframework.rte.bat.item.ItemReaderWriterConfCheckException:
delimitedToDelimitedStep.reader.resource.type=delimitedFile'처럼, 입력 리소스 타입을 Job 파라미터로 입력하세요.
리소스 타입 종류) delimitedFile, fixedLengthFile, jdbcDb
  at egovframework.rte.bat.item.DefaultItemReader.makeReaderConfigValue(DefaultItemReader.java:193)
  at egovframework.rte.bat.item.DefaultItemReader.beforeStep(DefaultItemReader.java:92)
  ... 23 more
02:00:05,303 INFO main SimpleJobLauncher:121 - Job: [FlowJob: [name=delimitedToDelimitedJob]] completed with
```



The image shows the 'Run Configurations' dialog box in an IDE. The 'Name' field is 'EgovCommandLineJobRunner (1)'. The 'Main' tab is selected, and the 'Program arguments' field contains the following text: `/egovframework/batch/context-commandline.xml delimitedToDelimitedJob delimitedToDelimitedStep.reader.resource.type=delimitedFile`. The last part of the argument is highlighted with an orange box. An orange arrow points from the error message in the console above to this configuration field.

# 시연(10/13)

- 실행 후 가이드에 따름(Reader 필수 항목 입력)

```
Problems Servers Console Type Hierarchy Search
<terminated> EgovCommandLineJobRunner (1) [Java Application] C:\Program Files\Java\jdk1.6.0_43\bin\javaw.exe (2014. 11. 3. 오전 2:02:18)
  at java.lang.reflect.Method.invoke(Method.java:597)
  at org.springframework.batch.support.SimpleMethodInvoker.invokeMethod(SimpleMethodInvoker.java:105)
  18 more
Caused by: egovframework.rte.bat.item.ItemReaderWriterConfCheckException:
delimitedToDelimitedStep스텝의 Reader 설정에서 resourceName, delimiter, names, type 은 필수입니다. 다음 처럼 설정하세요.
delimitedToDelimitedStep.reader.resource.name=./inputs/csvData.csv
delimitedToDelimitedStep.reader.delimiter=,
delimitedToDelimitedStep.reader.field.names=name,age
delimitedToDelimitedStep.reader.vo.type=aa.bb.TestVo
at egovframework.rte.bat.item.DefaultItemReader.makeReaderConfigValue(DefaultItemReader.java:141)
```

Run Configurations

Create, manage, and run configurations

Run a Java application

Name: EgovCommandLineJobRunner (1)

Main Arguments JRE Classpath Source Environment Common

Program arguments:

```
/egovframework/batch/context-commandline.xml delimitedToDelimitedJob
delimitedToDelimitedStep.reader.resource.type=delimitedFile
delimitedToDelimitedStep.reader.resource.name=./src/main/resources/egovframework/batch/data/inputs/csvData.csv
delimitedToDelimitedStep.reader.delimiter=,
delimitedToDelimitedStep.reader.field.names=name,credit
delimitedToDelimitedStep.reader.vo.type=egovframework.rte.bat.sample.domain.trade.CustomerCredit
```

# 시연(11/13)

- 실행 후 가이드에 따름(출력 리소스 타입 선택)

```
Problems Servers Console Type Hierarchy Search
<terminated> EgovCommandLineJobRunner (1) [Java Application] C:\Program Files\Java\jdk1.6.0_43\bin\javaw.exe (2014. 11. 3. 오전 2:07:14)
  at org.springframework.batch.support.SimpleMethodInvoker.invokeMethod(SimpleMethodInvoker.java:105)
  ... 18 more
Caused by: egovframework.rte.bat.item.ItemReaderWriterConfCheckException:
delimitedToDelimitedStep.writer.resource.type=delimitedFile'처럼, 출력 리소스 타입을 Job 파라미터로 입력하세요.
리소스 타입 종류) delimitedFile, fixedLengthFile, jdbcDb
  at egovframework.rte.bat.item.DefaultItemWriter.makeWriterConfigValue(DefaultItemWriter.java:169)
  at egovframework.rte.bat.item.DefaultItemWriter.beforeStep(DefaultItemWriter.java:88)
  ... 23 more
02:07:16,130 INFO main SimpleJobLauncher:121 - Job: [FlowJob: [name=delimitedToDelimitedJob]] completed with
```

Run Configurations

Create, manage, and run configurations

Run a Java application

Name: EgovCommandLineJobRunner (1)

Main Arguments JRE Classpath Source Environment Common

Program arguments:

```
/egovframework/batch/context-commandline.xml delimitedToDelimitedJob
delimitedToDelimitedStep.reader.resource.type=delimitedFile
delimitedToDelimitedStep.reader.resource.name=file:./src/main/resources/egovframework/batch/data/inputs/txtData.txt
delimitedToDelimitedStep.reader.delimiter=,
delimitedToDelimitedStep.reader.field.names=name,credit
delimitedToDelimitedStep.reader.resource.type=egovframework.rte.bat.simple.domain.trade.CustomerCredit
delimitedToDelimitedStep.writer.resource.type=delimitedFile
```

Variables...

# 시연(12/13)

- 실행 후 가이드에 따름(Writer 필수 항목 입력)

```
Problems Servers Console Type Hierarchy Search
<terminated> EgovCommandLineJobRunner (1) [Java Application] C:\Program Files\Java\jdk1.6.0_43\bin\javaw.exe (2014. 11. 3. 오전 2:09:50)
  at java.lang.reflect.Method.invoke(Method.java:597)
  at org.springframework.batch.support.SimpleMethodInvoker.invokeMethod(SimpleMethodInvoker.java:105)
  ... 18 more
Caused by: egovframework.rte.bat.item.ItemReaderWriterConfCheckException:
delimitedToDelimitedStep시스템의 Writer 설정에서 resourceName, delimiter, names는 필수입니다. 다음 처럼 설정하세요.
delimitedToDelimitedStep.writer.resourceName=file:./inputs/csvData.csv
delimitedToDelimitedStep.writer.delimiter=,
delimitedToDelimitedStep.writer.fieldNames=name,age
at egovframework.rte.bat.item.DefaultItemWriter.makeWriterConfigValue(DefaultItemWriter.java:136)
```

Run Configurations

Create, manage, and run configurations

Run a Java application

Name: EgovCommandLineJobRunner (1)

Main Arguments

Program arguments:

```
/egovframework/batch/context-commandline.xml delimitedToDelimitedJob
delimitedToDelimitedStep.reader.resource.type=delimitedFile
delimitedToDelimitedStep.reader.resource.name=file:./src/main/resources/egovframework/batch/data/inputs/csvData.csv
delimitedToDelimitedStep.reader.delimiter=,
delimitedToDelimitedStep.reader.field.names=name,credit
delimitedToDelimitedStep.reader.vo.type=egovframework.rte.bat.sample.domain.trade.CustomerCredit
delimitedToDelimitedStep.writer.resource.type=delimitedFile
delimitedToDelimitedStep.writer.resource.name=c:/csvData.csv
delimitedToDelimitedStep.writer.delimiter=,
delimitedToDelimitedStep.writer.field.names=name,credit
```

# 시연(13/13)

- 결과 확인

```
<terminated> EgovCommandLineJobRunner (1) [Java Application] C:\#Program Files\Java\jdk1.6.0_43\bin\javaw.exe (2014. 11. 3. 오전 2:19:08)
yBean]; scope=; abstract=false; lazyInit=false; autowireMode=0; dependencyCheck=0; autowireCandidate=true; primary
ope=; abstract=false; lazyInit=false; autowireMode=0; dependencyCheck=0; autowireCandidate=true; primary=false; f
abstract=false; lazyInit=false; autowireMode=0; dependencyCheck=0; autowireCandidate=true; primary=false; factory

g.springframework.batch.core.configuration.support.JobRegistryBeanPostProcessor#0, jobRepository, jobOperator, jobEx

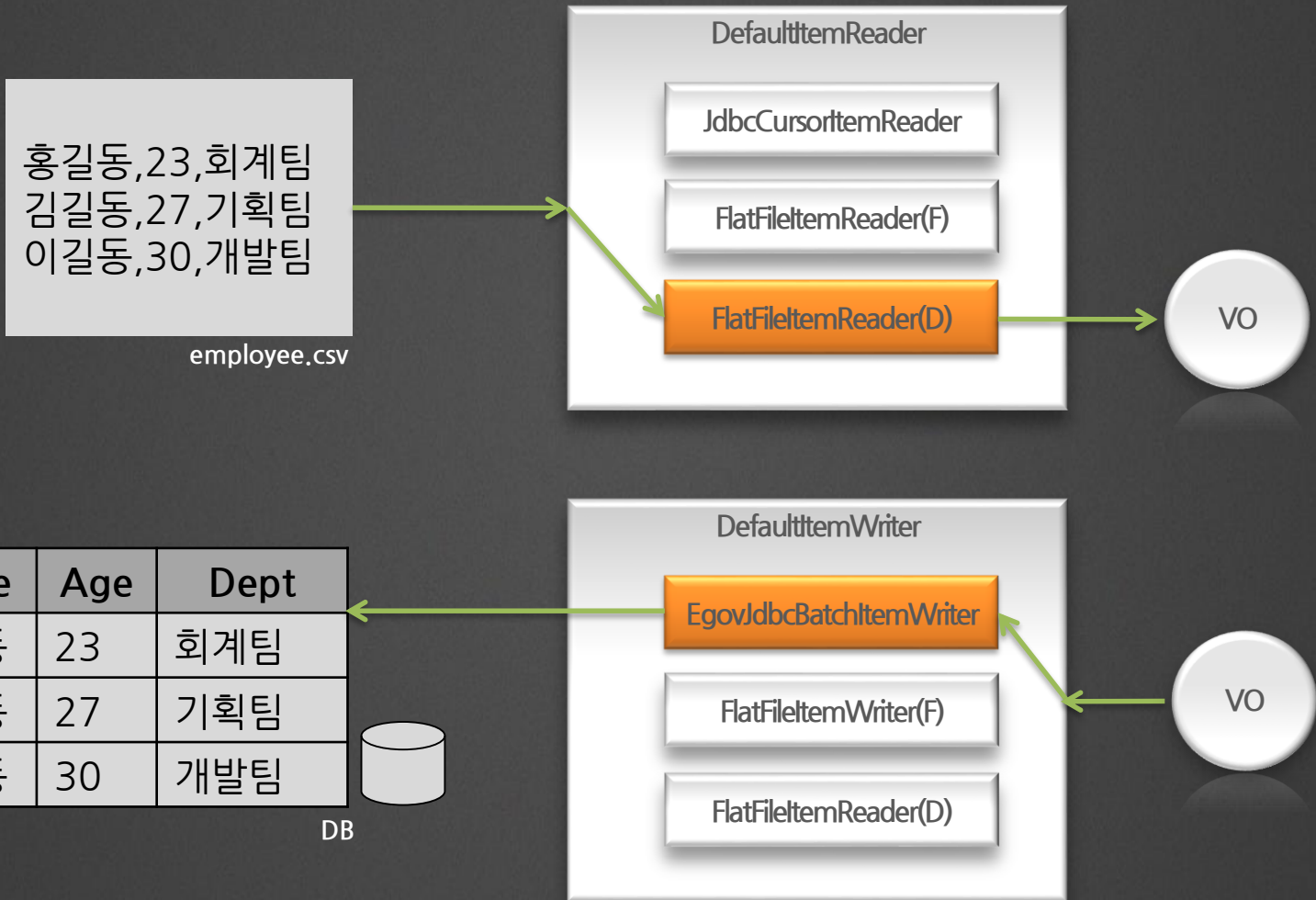
e=e:\csvData.csv, delimitedToDelimitedStep.writer.delimiter=,}]

me=e:\csvData.csv, delimitedToDelimitedStep.writer.delimiter=,} and the following status: [COMPLETED]

gframework.batch.core.configuration.support.JobRegistryBeanPostProcessor#0, jobRepository, jobOperator, jobExplorer,
```



# 만능Reader, Writer 구조



# 긍정적인 효과 1 (고민하지 않는다)

30개 VS

2개

AggregateItemReader

AmqpItemWriter

AmqpItemReader

CompositeItemWriter

FlatFileItemReader

FlatFileItemWriter

HibernateCursorItemReader

GemfireItemWriter

HibernatePagingItemReader

HibernateItemWriter

IbatisPagingItemReader

IbatisBatchItemWriter

JmsItemReader

ItemWriterAdapter

JpaPagingItemReader

JdbcBatchItemWriter

DefaultItemReader

DefaultItemWriter

# 긍정적인 효과 2(없어도 되는 설정 OUT)

100%

VS

40%

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.springframework.org/schema/beans http://www.springframework.org/schema/beans/spring-beans-3.0.xsd
http://www.springframework.org/schema/batch http://www.springframework.org/schema/batch/spring-batch-2.1.xsd">

<import resource="abstract/egovBase.xml" />

<job id="fixedLengthJob" parent="egovBaseJob" xmlns="http://www.springframework.org/schema/batch">
  <step id="fixedLengthJobStep" parent="egovBaseStep">
    <tasklet>
      <chunk reader="fixedLengthItemReader"
processor="itemProcessor"
writer="formatItemWriter"
commit-interval="2" />
    </tasklet>
  </step>
</job>

<bean id="fixedLengthItemReader" class="org.springframework.batch.item.file.FlatFileItemReader" scope="step">
  <property name="resource" value="file:./src/main/resources/egovframework/batch/data/inputs/txtData.txt" />
  <property name="lineMapper">
    <bean class="egovframework.rte.bat.core.item.file.mapping.EgovDefaultLineMapper">
      <property name="lineTokenizer">
        <bean class="egovframework.rte.bat.core.item.file.transform.EgovFixedLengthTokenizer">
          <property name="columns" value="1-9,10-11" />
        </bean>
      </property>
      <property name="objectMapper">
        <bean class="egovframework.rte.bat.core.item.file.mapping.EgovObjectMapper">
          <property name="type" value="egovframework.rte.bat.sample.domain.trade.CustomerCredit" />
          <property name="names" value="name,credit" />
        </bean>
      </property>
    </bean>
  </property>
</bean>

<bean id="formatItemWriter" class="org.springframework.batch.item.file.FlatFileItemWriter" scope="step">
  <property name="resource" value="file:./target/test-outputs/txtOutput.txt" />
  <property name="lineAggregator">
    <bean class="egovframework.rte.bat.core.item.file.transform.EgovFixedLengthLineAggregator">
      <property name="fieldExtractor">
        <bean class="egovframework.rte.bat.core.item.file.transform.EgovFieldExtractor">
          <property name="names" value="name,credit" />
        </bean>
      </property>
      <property name="fieldRanges" value="9,2" />
    </bean>
  </property>
</bean>

<bean id="itemProcessor" class="egovframework.rte.bat.sample.domain.trade.CustomerCreditIncreaseProcessor" />
</beans>
```

```
<job id="employeeJob" parent="egovBaseJob" xmlns="http://www.springframework.org/schema/batch">
  <step id="dlimitedToJdbcStep" parent="egovBaseStep">
    <tasklet>
      <chunk reader="defaultReader" writer="defaultWriter" commit-interval="2" />
    </tasklet>
  </step>
</job>
<bean id="itemProcessor" class="egovframework.rte.bat.sample.domain.trade.CustomerCreditIncreaseProcessor" />
```

# 그로 인하여

- 잘 몰라도,
- 쉽게,
- 편리하게,
- 바로 실행 하고,
- 유지보수도 편하게,
- 대용량 Batch 를 할 수 있다

# 우려하지 않아도 되는 우려사항

- 러닝커브? NO
- 초보자용? NO
- 성능저하? NO
- 상세하게 설정 하려면 어차피 원래대로 작업? NO

```
bash$ java EgovCommandLineJobRunner employee_job.xml employee
testStep1.reader.resource.type=delimitedFile
testStep1.reader.resource.name=./inputs/employee.csv
testStep1.reader.delimiter=,
testStep1.reader.field.names=name,age,dept
testStep1.reader.vo.type=egovframework.rte.bat.sample.Employee
testStep1.reader.xml.conf.flag=true
```

# 발전 방식

- 모두의 지혜를 GitHub에!

The screenshot shows a GitHub repository page for 'egov-batch-lab'. At the top, there are navigation buttons for 'Unwatch' (1), 'Star' (0), and 'Fork' (0). Below this, there are input fields for 'Description' and 'Website', with 'Save' and 'Cancel' buttons. A summary bar shows '2 commits', '1 branch', '0 releases', and '1 contributor'. The main content area displays a commit history table and a file list.

Commit Hash	Author	Time	Files
36d37317dd	Seo Kyung-Seok	7 minutes ago	egov-batch-lab
			readme.txt

File	Commit	Time
egov-batch-lab	Default Reader/Writer Create	7 minutes ago
readme.txt	test commit	15 minutes ago

readme.txt

First Create

HTTPS clone URL: <https://github.com/l>

You can clone with [HTTPS](#), [SSH](#), or [Subversion](#).

# 마무리 요약

- 일괄 작업은 Batch F/W를 사용하자
- Batch F/W 는 Egov Batch F/W 를 사용하자
- 고민 없이 **만능 Reader/Writer** 를 사용하자
- 편리함을 만끽하자





감사합니다