Spring Batch Workshop

Arnaud Cogoluègnes

Consultant with Zenika, Co-author Spring Batch in Action

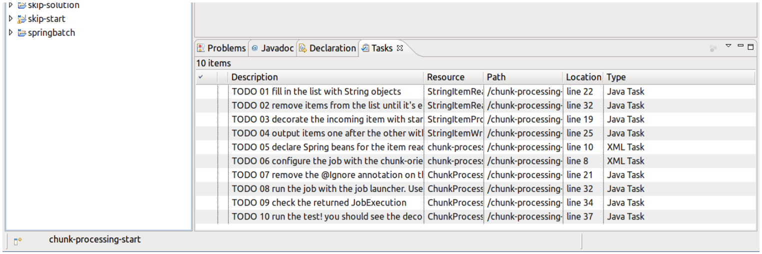
May 23, 2011

Overview

- This workshop highlights Spring Batch features
- Problem/solution approach
  - A few slides to cover the feature
  - A project to start from, just follow the TODOs
- Prerequisites
  - Basics about Java and Java EE
  - Spring: dependency injection, enterprise support
- https://github.com/acogoluegnes/Spring-Batch-Workshop

Follow the TODOs

- Track the TODO in the *-start projects!
- It's easier with support from the IDE



skip-solution
skip-start
springbatch

Problems | Javadoc | Declaration | Tasks

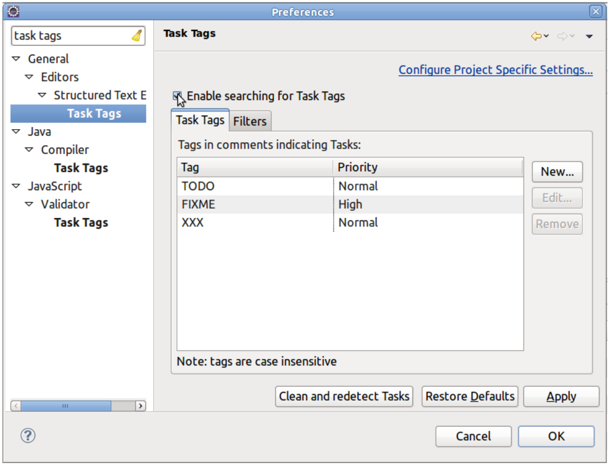
10 items

✓		Description	Resource	Path	Location	Type
		TODO 01 fill in the list with String objects	StringItemRe	/chunk-processing-	line 22	Java Task
		TODO 02 remove items from the list until it's e	StringItemRe	/chunk-processing-	line 32	Java Task
		TODO 03 decorate the incoming item with star	StringItemPrc	/chunk-processing-	line 19	Java Task
		TODO 04 output items one after the other witl	StringItemWr	/chunk-processing-	line 25	Java Task
		TODO 05 declare Spring beans for the item reac	chunk-proces	/chunk-processing-	line 10	XML Task
		TODO 06 configure the job with the chunk-orie	chunk-proces	/chunk-processing-	line 8	XML Task
		TODO 07 remove the @Ignore annotation on tl	ChunkProcess	/chunk-processing-	line 21	Java Task
		TODO 08 run the job with the job launcher. Use	ChunkProcess	/chunk-processing-	line 32	Java Task
		TODO 09 check the returned JobExecution	ChunkProcess	/chunk-processing-	line 34	Java Task
		TODO 10 run the test! you should see the deco	ChunkProcess	/chunk-processing-	line 37	Java Task

chunk-processing-start

TODO with Eclipse

- Window > Preferences > “tasks tag” in filter



Task Tags

[✓] Enable searching for Task Tags

Task Tags | Filters

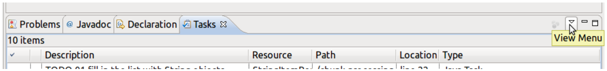
Tags in comments indicating Tasks:

Tag	Priority
TODO	Normal
FIXME	High
XXX	Normal

Note: tags are case insensitive

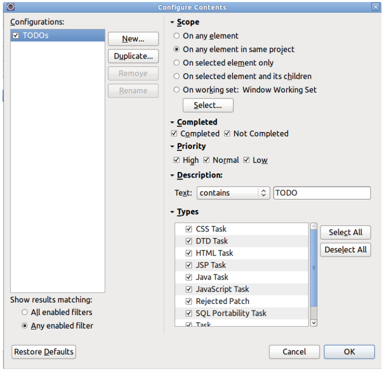
TODO with Eclipse

- Open the “Tasks” view
- click on the down arrow on the right
- “configure contents”



TODO with Eclipse

- Check “TODOs” on the left
- Check “On any element in the same project” on the right (scope)



Configure Contents

Configurations:
☑ TODOs

New... Duplicate... Remove Rename

Scope
○ On any element
● On any element in same project
○ On selected element only
○ On selected element and its children
○ On working set: Window Working Set

Select...

Completed
☑ Completed ☑ Not Completed

Priority
☑ High ☑ Normal ☑ Low

Description:
Text: contains TODO

Types
☑ CSS Task
☑ DTD Task
☑ HTML Task
☑ JSP Task
☑ Java Task
☑ JavaScript Task
☑ Rejected Patch
☑ SQL Portability Task
☑ Task

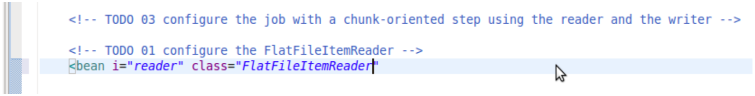
Select All Deselect All

Show results matching:
○ All enabled filters
● Any enabled filter

Restore Defaults Cancel OK

Spring support in IDE is a +

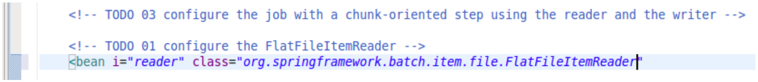
- e.g. code completion in SpringSource Tool Suite



```
<!-- TODO 03 configure the job with a chunk-oriented step using the reader and the writer -->

<!-- TODO 01 configure the FlatFileItemReader -->
<bean i="reader" class="FlatFileItemReader"
```

$\downarrow$



```
<!-- TODO 03 configure the job with a chunk-oriented step using the reader and the writer -->

<!-- TODO 01 configure the FlatFileItemReader -->
<bean i="reader" class="org.springframework.batch.item.file.FlatFileItemReader"
```

Basic features for batch applications

- Read – process – write large amounts of data, efficiently
- Ready-to-use components to read from/write to
  - Flat/XML files
  - Databases (JDBC, Hibernate, JPA, iBatis)
  - JMS queues
  - Emails
- Numerous extension points/hooks

Advanced features for batch applications

- Configuration to skip/retry items
- Execution metadata
  - Monitoring
  - Restart after failure
- Scaling strategies
  - Local/remote
  - Partitioning, remote processing

- Problem: getting started with Spring Batch
- Solution: writing a simple “Hello World” job

Structure of a job

- A Spring Batch job is made of steps
- The Hello World job has one step
- The processing is implemented in a `Tasklet`

The Hello World Tasklet

```
public class HelloWorldTasklet implements Tasklet {

  @Override
  public RepeatStatus execute(
      StepContribution contribution,
      ChunkContext chunkContext) throws Exception {
    System.out.println("Hello world!");
    return RepeatStatus.FINISHED;
  }

}
```

The configuration of the Hello World job

```
<batch:job id="helloWorldJob">
  <batch:step id="helloWorldStep">
    <batch:tasklet>
      <bean class="com.zenika.workshop.springbatch.HelloWorldTasklet" />
    </batch:tasklet>
  </batch:step>
</batch:job>
```

Spring Batch needs some infrastructure beans

- Let's use the typical test configuration

```
<bean id="transactionManager"
      class="o.s.b.support.transaction.ResourcelessTransactionManager" />

<bean id="jobRepository"
      class="o.s.b.core.repository.support.MapJobRepositoryFactoryBean" />

<bean id="jobLauncher"
      class="o.s.b.core.launch.support.SimpleJobLauncher">
  <property name="jobRepository" ref="jobRepository" />
</bean>
```

Running the test in a JUnit test

```
@RunWith(SpringJUnit4ClassRunner.class)
@ContextConfiguration("/hello-world-job.xml")
public class HelloWorldJobTest {

  @Autowired
  private Job job;

  @Autowired
  private JobLauncher jobLauncher;

  @Test public void helloWorld() throws Exception {
    JobExecution execution = jobLauncher.run(job, new JobParameters());
    assertEquals(ExitStatus.COMPLETED, execution.getExitStatus());
  }
```