# 定义bpmn20及其扩展的schema对应的java实体类

当前（2013-03-13），X3系统在对流程定义的xml文件的操作，有很多地方是直接使用Dom4j进行xml的文件解析，通过xpath进行信息抽取。而取得的信息通过Map保存，如下面的代码片段：

@SuppressWarnings("unchecked")

**public** **static** Map<String, Map<String, String>> getTaskActivitys(

String defXml, Boolean flag) {

Map<String, Map<String, String>> rtnMap = **new** HashMap<String, Map<String, String>>();

defXml = defXml.replace(*BPM\_XML\_NS*, "");

Document doc = Dom4jUtil.*loadXml*(defXml);

Element root = doc.getRootElement();

List<Node> list = root.selectNodes("./process//userTask");

Map<String, String> taskMap = **new** HashMap<String, String>();

*addToMap*(list, taskMap);

// rtnMap.put("任务节点", taskMap);

// 约定，将CallActivity当作任务节点看待

List<Node> callActivityList = root

.selectNodes("./process//callActivity");

**if** (callActivityList.size() > 0) {

*addToMap*(callActivityList, taskMap);

}

rtnMap.put("任务节点", taskMap);

这样的代码编写有不少缺点：

1 方面看起来不够严谨整洁

从xml文件中抽取某个节点信息时，编程人员需要对解析到xml节点进行跟踪。

2 不利于维护和扩展

从xml文件中抽取某些信息时，需要使用xpath查询dom树。如果xml的结构发生变化，需要修改的地方很多。另外，使用map保存信息不够直观。

……

究其原因，在X3中，并未使用面向对象的思想，对bpmn2.0规范的文档进行数据建模。

## 定义Java实体类

对bpmn2.0规范的文档进行数据建模，从编码的角度看，就是根据bpmn2.0规范定义相应的Java实体类。

因为bpmn2.0规范定义完整的xml schema文件，而非为方便对bpmn2.0规范的xml文件进行操作，可以使用JAXB2 技术。

通过JDK的自带的xjc实用工具，可以快速在从schema文件生成相应的java实体类和ObjecFactory。

对bpmn2.0 schema定义到Java实体类的转换，使用的配置见附录1

对activiti定义到Java实体类的转换，使用的配置见附录2

## 使用JAXB对bpmn2.0规范文件操作

JAXB对xml文档的操作主要有以下几个步骤

1 创建JAXB上下文对象

JAXBContext jAXBContext = JAXBContext.*newInstance*(classes);

2 创建Unmarshaller对象，Unmarshaller对象用于加载和解析xml文件。

Unmarshaller unmarshaller = jctx.createUnmarshaller();

3 加载xml文件

Object obj = unmarshaller.unmarshal(is);

JAXB的使用，具体表参考JAXB相关的文档。

# 附录

## 附录1

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## 附录2

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