ANNOTATION VS XML

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Annotation Vs Xml

Annotation and Xml both are meant for providing meta-data or information about our classes or program to another program or application, so they can start using our classes or program. These are just like documents which will be read by underlying application such as Servlet container or IOC container. Annotation is an alternate of xml configuration file. In early days there is only one way to configure the file which is through xml. There are some problems with xml for which java developers does not want to use xml.

Disadvantage of XML

1. Xml is verbose:-

   It means xml configurations are larger in length. To configure a single class also programmer has to write too many lines of xml file which is irritating.

2. Xml is to be written in external file. Xml syntax is completely different from java syntax so Java developer feels that they have been thrown out of java.

3. To configure in xml programmers have to remember all the tags of the xml and the syntaxes which are large in number. So, java developer feels difficulty in doing this.

4. There is no any intermediate compiler for Xml that's why configuration can be checked at run time only after the application is deployed. Now if any exception occurs at run time related to configuration then it will be very difficult for java developer to identify the exception and fix it. To fix the problem developers have to stop the server fix the problem redeploy it and restart the server. It kills the productivity of developer. These are the reasons xml is not suitable for rapid production.

5. There is no strong tools or IDE which helps developer in xml configuration. That is IDE support for xml is very less.

Due to above reasons java developer starts raising their voices against the xml. To solve all the above problems Sun Microsystem starts developing an alternate for xml in this way annotations comes into picture.

Xml Advantage

1. If any run time problems occur due to xml then programmer does not need to make change in the code

just go to external xml configuration file and do the required changes due to which application does not need to be recompiled, retested and redeployed on server which will prevent extra cost in developing application.

2. Xml gives the clear picture of the project in one single place. By looking at Xml configuration programmer can understand the flow of the application.

3. Xml support pojo class appication development. It means when we configure our class in xml configuration file we not need to extends or implement our classes from other application environment which are out of jdk environment.

Advantage of Annotation

1. Annotations are very small in length. Programmers have to write one word or one line of annotation to configure the class.

2. Annotations are Java related classes so java developers feel comfortable in working with annotations.

3. It is very easy for developer in remembering one word annotations.

4. Annotations are written as part of source code so Java compiler compiles it along with source code. So any errors in annotations is detected at compile time so developers can fix it at compile time only. This will speed up the productivity of programmer. Annotations are suitable for rapid production.

5. As annotations are java related classes there are number of IDE which helps programmer in writing configuration through annotations.

Above are the reasons annotations are used frequently in today's development.

Limitations of Annotation

1. If developer uses annotation and if any runtime exception occurs due to annotation then again developer has to make the change in code which will be very costlier.

2. Annotation does not give clear understanding about the flow of control in an application. Any new developer feels very difficult in understanding it.

3. To get the clear understanding of control flow of application using annotation programmer has to follow the stander rule. But there is no guarantee that everyone in a team will follow it.

Now we know that both Xml and Annotation has its own advantages and disadvantages then how to chose one of them in any project. Let's discuss based on nature of the Project-

When project is very big and complicated :

In complicated and big project the dependencies between classes are very high, so if we use annotation then managing the classes based on dependencies becomes very difficult. To understand the project new developer has to invest more time in understanding the project. To use annotation in this type of project we have to follow some naming and packaging convention for writing the classes. For example we have to write bean class in bean package or persistent classes in DAO package etc. If we follow the naming and packing convention for developing the project then new developer also can understand the project flow easily and they starts working on it. But, in bigger project number of people working is large so, there is no guarantee that every one will follow the naming convention.

If we use Xml configuration file in this case then all the classes dependencies are maintained at one place so, any developer can understand the project flow easily at one place. As all the classes are configured at one place so, maintaining the project will be easy. If any one in project is not following the naming convention than also understanding the project is not so difficult.

From the above point we can see that in bigger and complicated project Xml helping the programmer in understanding the dependencies but in case of annotation first programmer need to help the annotation by following naming and packaging convention in developing to understand the project.

When rapid project development is required:

In this case if we use Xml, then it will take more time in creating the configuration file. Developer will spend lot of time in writing configuration file due to which quality of business component may be poor.

If we use Annotation in this case then developer will give most of there time in developing the business component of the project because annotation will also be the part that component only so, project quality will also good.

In this case if we use annotation it will give more benefit than Xml.

In this way we can see that there are various factors which has to be considered while choosing Xml or Annotation.