






Report on Identified Refactoring Opportunities for (SC/ST) Refactoring

The tool identifies the Control-Fields and conditional constructs (Switch/If) that use these Control-Fields to simulate the (SC / ST) refactoring. It prioritizes the Control-Fields (refactoring opportunities) based on the following criteria:

1. Number of conditional constructs that switch on Control-Field
Group i represents i different conditional constructs where the Control-Field is used
2. Average size of the conditional body
3. Number of control values
2-3 control values 
3-6 control values 
6-n control values 
4. Presence of conditional constructs with respect to the class of declaration (COD) of Control-Field
In COD (A)
Outside (B)
Mixed (C)
5. Qualified for SC or ST
6. Static Field 
7. Have subclasses already 

Input Benchmark Statistics:

No. Of Classes: 185
No. Of Primitive Fields: 506
No. Of Control-Fields for Subclass Pattern: 6
No. Of Control-Fields for State pattern: 10
Total No. Of Control-Fields: 16

Uses	Replace Type Code with Subclass (SC)	Uses	Replace Type Code with State (ST)
17	<org.sunflow.core.ParameterList.FloatParameter,interp> (B)	5	<org.sunflow.system.UI, canceled> (C)
5	<org.sunflow.core.ShadingState, includeSpecular> (B)	4	<org.sunflow.core.Geometry, builtTess> (A)
4	<org.sunflow.core.ShadingState, includeLights> (B)	3	<org.sunflow.core.tesselatable.BezierMesh, smooth> (A)
3	<org.sunflow.core.primitive.TriangleMesh.WaldTriangle,k> (A)	2	<org.sunflow.core.Geometry, builtAccel> (A)
2	<org.sunflow.RenderObjectMap.RenderObjectHandle,type> (B)		<org.sunflow.core.photonmap.CausticPhotonMap, storedPhotons> (A)
	<org.sunflow.core.primitive.Plane,k> (A)		<org.sunflow.core.Texture, loaded> (A)
			<org.sunflow.core.photonmap.GlobalPhotonMap, storedPhotons> (A)
			<org.sunflow.core.ShadingState, behind> (B)
			<org.sunflow.core.tesselatable.BezierMesh, quads> (A)
			<org.sunflow.core.shader.UberShader, glossyness> (A)