

Base Language - Bug #7135

NPE in conversion of OO looking for oldtype annotation

02/20/2023 01:26 PM - Roger Borrello

Status:	Closed	Start date:	
Priority:	High	Due date:	
Assignee:	Roger Borrello	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:		case_num:	
billable:	No	version:	
vendor_id:	GCD		
Description			

History

#1 - 02/20/2023 01:30 PM - Roger Borrello

- Subject changed from NPE in conversion of OO looking for oldtyp annotation to NPE in conversion of OO looking for oldtype annotation

Using this testcase (placed in uast/oo:

```

USING Progress.Lang.*.
CLASS oo.roger:
  USING com.goldencode.p2j.ui.chart.* FROM java.
  DEFINE PRIVATE VARIABLE ultraChartHandle          AS HANDLE NO-UNDO.
  DEFINE PRIVATE VARIABLE ultraChart                AS com.goldencode.p2j.ui.ChartWidget NO-UNDO.
  CONSTRUCTOR PUBLIC roger ( ):
    CREATE chart ultraChartHandle.
    ASSIGN
      ultraChart = com.goldencode.p2j.util.handle:getResource(ultraChartHandle).
  END CONSTRUCTOR.
  METHOD PUBLIC VOID CreateTable ( ):
    ASSIGN
      ultraChart:labelHash = NEW java.util.HashMap().           // <--- This is the error line
  END METHOD.
END CLASS.
```

The conversion throws this error:

```

./uast/oo/roger.cls
Elapsed job time: 00:00:01.084
ERROR:
com.goldencode.p2j.pattern.TreeWalkException: ERROR! Active Rule:
-----
RULE REPORT
-----
Rule Type : WALK
Source AST: [ = ] BLOCK/CLASS_DEF/BLOCK/METHOD_DEF/BLOCK/STATEMENT/KW_ASSIGN/ASSIGN/ @13:30 {292057776248}
Copy AST : [ = ] BLOCK/CLASS_DEF/BLOCK/METHOD_DEF/BLOCK/STATEMENT/KW_ASSIGN/ASSIGN/ @13:30 {292057776248}
Condition : oldtype = #(int) (#(long) ref.getAnnotation("oldtype"))
Loop : false
--- END RULE REPORT ---

at com.goldencode.p2j.pattern.PatternEngine.run(PatternEngine.java:1093)
at com.goldencode.p2j.convert.TransformDriver.processTrees(TransformDriver.java:586)
at com.goldencode.p2j.convert.ConversionDriver.back(ConversionDriver.java:585)
at com.goldencode.p2j.convert.TransformDriver.executeJob(TransformDriver.java:998)
at com.goldencode.p2j.convert.ConversionDriver.main(ConversionDriver.java:1284)
Caused by: java.lang.NullPointerException
at com.goldencode.expr.CE10330.execute(Unknown Source)
```

```

at com.goldencode.expr.Expression.execute(Expression.java:373)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:500)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.RuleContainer.apply(RuleContainer.java:590)
at com.goldencode.p2j.pattern.RuleSet.apply(RuleSet.java:98)
at com.goldencode.p2j.pattern.RuleContainer.apply(RuleContainer.java:590)
at com.goldencode.p2j.pattern.RuleSet.apply(RuleSet.java:98)
at com.goldencode.p2j.pattern.AstWalker.walk(AstWalker.java:262)
at com.goldencode.p2j.pattern.AstWalker.walk(AstWalker.java:210)
at com.goldencode.p2j.pattern.PatternEngine.apply(PatternEngine.java:1685)
at com.goldencode.p2j.pattern.PatternEngine.processAst(PatternEngine.java:1571)
at com.goldencode.p2j.pattern.PatternEngine.processAst(PatternEngine.java:1504)
at com.goldencode.p2j.pattern.PatternEngine.run(PatternEngine.java:1056)
... 4 more

```

At the beginning of the conversion, there are several warnings:

```

-----
Scanning Progress Source (preprocessor, lexer, parser, persist ASTs)
-----

```

```

uast/oo/roger.cls
  Lvl01 parse: ./uast/skeleton/oo4gl/Progress/Lang/Object.cls
Feb 20, 2023 1:25:25 PM org.reflections.Reflections scan
INFO: Reflections took 85 ms to scan 1 urls, producing 99 keys and 910 values
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Object:set-next-sibling(KW_INPUT obj
ect<? extends progress.lang.object>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Object:set-prev-sibling(KW_INPUT obj
ect<? extends progress.lang.object>)'
  Lvl02 parse: | ./uast/skeleton/oo4gl/Progress/Lang/Class.cls
Feb 20, 2023 1:25:26 PM org.reflections.Reflections scan
INFO: Reflections took 37 ms to scan 1 urls, producing 99 keys and 910 values
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Class:set-package(KW_INPUT character
)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Class:set-superclass(KW_INPUT object
<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Class:set-typename(KW_INPUT characte
r)'
  Lvl03 parse: | | ./uast/skeleton/oo4gl/Progress/Lang/ParameterList.cls
  Lvl03 parse: | | ./uast/skeleton/oo4gl/Progress/Reflect/Constructor.cls
  Lvl04 parse: | | | ./uast/skeleton/oo4gl/Progress/Reflect/AccessMode.cls
  Lvl05 parse: | | | | ./uast/skeleton/oo4gl/Progress/Lang/Enum.cls
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-accessmode(KW_INP
UT object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-originatingclass(
KW_INPUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-name(KW_INPUT cha
racter)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-numparameters(KW_
INPUT integer)'
  Lvl04 parse: | | | ./uast/skeleton/oo4gl/Progress/Reflect/Parameter.cls
  Lvl05 parse: | | | | ./uast/skeleton/oo4gl/Progress/Reflect/DataType.cls
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-datatype(KW_INPUT o
bject<? extends progress.reflect.datatype>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-datatypename(KW_INP
UT character)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-extent(KW_INPUT int
eger)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-name(KW_INPUT chara
cter)'
  Lvl05 parse: | | | | ./uast/skeleton/oo4gl/Progress/Reflect/ParameterMode.cls
  Lvl06 parse: | | | | | ./uast/skeleton/oo4gl/Progress/Lang/FlagsEnum.cls
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-mode(KW_INPUT objec

```

```

t<? extends progress.reflect.parametermode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-position(KW_INPUT i
nteger)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-datatype(KW_INPUT o
bject<? extends progress.reflect.datatype>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-datatype(KW_INP
UT character)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-extent(KW_INPUT int
eger)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-name(KW_INPUT chara
cter)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-mode(KW_INPUT objec
t<? extends progress.reflect.parametermode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Parameter:set-position(KW_INPUT i
nteger)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-accessmode(KW_INP
UT object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-originatingclass(
KW_INPUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-name(KW_INPUT cha
racter)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Constructor:set-numparameters(KW_
INPUT integer)'
```

```

    Lvl03 parse: | | ./uast/skeleton/oo4gl/Progress/Reflect/Flags.cls
    Lvl03 parse: | | ./uast/skeleton/oo4gl/Progress/Reflect/Event.cls
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-accessmode(KW_INPUT obj
ect<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-declaringclass(KW_INPUT
object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-isabstract(KW_INPUT log
ical)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-isoverride(KW_INPUT log
ical)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-isstatic(KW_INPUT logic
al)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-name(KW_INPUT character
)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-numhandlerparameters(KW
_INPUT integer)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-originatingclass(KW_INP
UT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-accessmode(KW_INPUT obj
ect<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-declaringclass(KW_INPUT
object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-isabstract(KW_INPUT log
ical)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-isoverride(KW_INPUT log
ical)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-isstatic(KW_INPUT logic
al)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-name(KW_INPUT character
)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-numhandlerparameters(KW
_INPUT integer)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Event:set-originatingclass(KW_INP
UT object<? extends progress.lang.class>)'
    Lvl03 parse: | | ./uast/skeleton/oo4gl/Progress/Reflect/Method.cls
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-accessmode(KW_INPUT ob
ject<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-declaringclass(KW_INPU
T object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isabstract(KW_INPUT lo
gical)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isfinal(KW_INPUT logic
al)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isoverride(KW_INPUT lo
gical)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isstatic(KW_INPUT logi
cal)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-name(KW_INPUT characte
r)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-numparameters(KW_INPUT
integer)'
```

```

WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-originatingclass(KW_IN
```

```

PUT object<? extends progress.lang.class>'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-returnnextent (KW_INPUT
integer)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-returnnextent (KW_INPUT ob
ject<? extends progress.reflect.datatype>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-returnnextent (KW_INPU
T character)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-accessmode (KW_INPUT ob
ject<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-declaringclass (KW_INPU
T object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isabstract (KW_INPUT lo
gical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isfinal (KW_INPUT logic
al)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isoverride (KW_INPUT lo
gical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-isstatic (KW_INPUT logi
cal)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-name (KW_INPUT characte
r)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-numparameters (KW_INPUT
integer)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-originatingclass (KW_IN
PUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-returnnextent (KW_INPUT
integer)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-returnnextent (KW_INPUT ob
ject<? extends progress.reflect.datatype>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Method:set-returnnextent (KW_INPU
T character)'
    Lvl03 parse: || ./uast/skeleton/oo4gl/Progress/Reflect/Property.cls
    Lvl04 parse: || | ./uast/skeleton/oo4gl/Progress/Reflect/Variable.cls
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPUT
object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPUT ob
ject<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPUT ob
ject<? extends progress.reflect.datatype>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPU
T character)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-declaringclass (KW_IN
PUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-extent (KW_INPUT inte
ger)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-isstatic (KW_INPUT lo
gical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-name (KW_INPUT charac
ter)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-originatingclass (KW_
INPUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPUT
object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPUT ob
ject<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPUT ob
ject<? extends progress.reflect.datatype>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-accessmode (KW_INPU
T character)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-declaringclass (KW_IN
PUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-extent (KW_INPUT inte
ger)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-isstatic (KW_INPUT lo
gical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-name (KW_INPUT charac
ter)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Variable:set-originatingclass (KW_
INPUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-getteraccessmode (KW_
INPUT object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-canread (KW_INPUT log
ical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-canwrite (KW_INPUT lo
gical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-isabstract (KW_INPUT
logical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-isindexed (KW_INPUT 1
logical)'

```

```
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-isoverride(KW_INPUT logical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-setteraccessmode(KW_INPUT object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-getteraccessmode(KW_INPUT object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-canread(KW_INPUT logical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-canwrite(KW_INPUT logical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-isabstract(KW_INPUT logical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-isindexed(KW_INPUT logical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-isoverride(KW_INPUT logical)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Reflect.Property:set-setteraccessmode(KW_INPUT object<? extends progress.reflect.accessmode>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Class:set-package(KW_INPUT character)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Class:set-superclass(KW_INPUT object<? extends progress.lang.class>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Class:set-typename(KW_INPUT character)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Object:set-next-sibling(KW_INPUT object<? extends progress.lang.object>)'
WARNING: Could not find legacy builtin method javaname for 'Progress.Lang.Object:set-prev-sibling(KW_INPUT object<? extends progress.lang.object>)'
    Lvl01 DONE: ./uast/skeleton/oo4gl/Progress/Lang/Object.cls
    Lvl01 parse: ./uast/oo/roger.cls
    Lvl01 DONE: ./uast/oo/roger.cls
Can not initialize handle's invalid access proxy:null
```

#2 - 02/20/2023 01:32 PM - Roger Borrello

- File *roger.cls.ast* added

The AST is attached:

#3 - 02/20/2023 01:47 PM - Constantin Asofiei

Roger, please try this patch (on top of trunk rev 14484):

```
=== modified file 'rules/convert/assignments.rules'
--- old/rules/convert/assignments.rules 2022-06-02 13:02:58 +0000
+++ new/rules/convert/assignments.rules 2023-02-20 18:47:40 +0000
@@ -428,7 +428,7 @@
     </rule>

    <!-- setters for assignable global vars -->
-    <rule>evalLib("vartype", ref.type) and ref.type != prog.sys_handle
+    <rule>evalLib("vartype", ref.type) and ref.type != prog.sys_handle and not evalLib("is_java_cls", re
f)

    <!-- global variables are the only VAR_ types that don't have a refid -->
    <rule>!ref.isAnnotation("refid")
```

#4 - 02/20/2023 02:12 PM - Roger Borrello

That results in a successful conversion. So those warnings are just red-herrings?

Is this a fix I should try against the customer's code?

#5 - 02/20/2023 02:17 PM - Constantin Asofiei

Roger Borrello wrote:

Is this a fix I should try against the customer's code?

Yes.

#6 - 02/20/2023 02:44 PM - Roger Borrello

- % Done changed from 0 to 50
- Status changed from New to WIP
- Assignee set to Roger Borrello

Running conversion. Should I create a branch 7135a?

#7 - 02/20/2023 04:05 PM - Greg Shah

Yes

#8 - 02/20/2023 06:54 PM - Roger Borrello

- Status changed from WIP to Review

- % Done changed from 50 to 100

Branch 7135a rev 14485 ready for review.

#9 - 02/21/2023 07:13 AM - Greg Shah

- Status changed from Review to Test

Code Review Task Branch 7135a Revision 14485

No objections.

#10 - 02/21/2023 07:13 AM - Greg Shah

If this passes testing, we will merge it to trunk.

#11 - 02/21/2023 09:27 AM - Roger Borrello

- Status changed from Test to WIP

- % Done changed from 100 to 70

Greg Shah wrote:

If this passes testing, we will merge it to trunk.

There was an issue later in the conversion of the customer application:

```
[java] EXPRESSION EXECUTION ERROR:
[java] -----
[java] rvalueType = ecw.expressionType(rvalueExp, false)
[java]                ^ { Unknown METH_POLY with oldtype of KW_GET_MOP }
[java] -----
[java] Elapsed job time: 00:07:56.534
[java] ERROR:
[java] com.goldencode.p2j.pattern.TreeWalkException: ERROR! Active Rule:
[java] -----
[java]         RULE REPORT
[java] -----
[java] Rule Type : WALK
[java] Source AST: [ = ] BLOCK/PROCEDURE/BLOCK/STATEMENT/KW_ASSIGN/ASSIGN/ @7065:17 {876173354066}
[java] Copy AST : [ = ] BLOCK/PROCEDURE/BLOCK/STATEMENT/KW_ASSIGN/ASSIGN/ @7065:17 {876173354066}
[java] Condition : rvalueType = ecw.expressionType(rvalueExp, false)
[java] Loop      : false
[java] --- END RULE REPORT ---
[java]
[java]
[java]
[java] at com.goldencode.p2j.pattern.PatternEngine.run(PatternEngine.java:1093)
[java] at com.goldencode.p2j.convert.TransformDriver.processTrees(TransformDriver.java:586)
[java] at com.goldencode.p2j.convert.ConversionDriver.back(ConversionDriver.java:585)
[java] at com.goldencode.p2j.convert.TransformDriver.executeJob(TransformDriver.java:998)
[java] at com.goldencode.p2j.convert.ConversionDriver.main(ConversionDriver.java:1284)
[java] Caused by: com.goldencode.expr.ExpressionException: Expression execution error @1:18 [ASSIGN id=87
6173354066]
```

I will see if it is related to the change, versus a different issue.

#12 - 02/21/2023 10:40 AM - Roger Borrello

- % Done changed from 70 to 90

Roger Borrello wrote:

I will see if it is related to the change, versus a different issue.

I see that issue when I tried with the unpatched trunk_14484 revision, so it's a separate issue. Should I log a new error, or encapsulate both under the client's area of Redmine (or just morph this one to cover both)?

#13 - 02/21/2023 10:50 AM - Constantin Asofiei

Please work on a standalone test and lets use this task for the customer's app issues with trunk (conversion or runtime).

#14 - 02/21/2023 11:49 AM - Roger Borrello

Constantin Asofiei wrote:

Please work on a standalone test and lets use this task for the customer's app issues with trunk (conversion or runtime).

Working on it... I crashed because I was out of disk space.

#15 - 02/21/2023 01:55 PM - Roger Borrello

This testcase:

```
PROCEDURE getMousePoint :  
  DEFINE INPUT  PARAMETER pcObject AS HANDLE NO-UNDO.  
  
  DEFINE VARIABLE iMouseLoc AS INTEGER NO-UNDO EXTENT 2.  
  
  ASSIGN  
    iMouseLoc = pcObject:FRAME:GET-MOUSE-POSITION().  
END PROCEDURE.
```

creates the same error:

Core Code Conversion


```
-----
Optional rule set [customer_specific_conversion] not found.
./uast/roger.w
Elapsed job time: 00:00:00.966
ERROR:
com.goldencode.p2j.pattern.TreeWalkException: ERROR! Active Rule:
```

RULE REPORT

```
Rule Type : WALK
Source AST: [ = ] BLOCK/PROCEDURE/BLOCK/STATEMENT/KW_ASSIGN/ASSIGN/ @7:17 {347892351023}
Copy AST : [ = ] BLOCK/PROCEDURE/BLOCK/STATEMENT/KW_ASSIGN/ASSIGN/ @7:17 {347892351023}
Condition : rvalueType = ecw.expressionType(rvalueExp, false)
Loop : false
--- END RULE REPORT ---
```

```
at com.goldencode.p2j.pattern.PatternEngine.run(PatternEngine.java:1093)
at com.goldencode.p2j.convert.TransformDriver.processTrees(TransformDriver.java:586)
at com.goldencode.p2j.convert.ConversionDriver.back(ConversionDriver.java:585)
at com.goldencode.p2j.convert.TransformDriver.executeJob(TransformDriver.java:998)
at com.goldencode.p2j.convert.ConversionDriver.main(ConversionDriver.java:1284)
Caused by: java.lang.UnsupportedOperationException: Unknown METH_POLY with oldtype of KW_GET_MOP
at com.goldencode.p2j.convert.ExpressionConversionWorker.expressionType(ExpressionConversionWorker.java:20
85)
at com.goldencode.p2j.convert.ExpressionConversionWorker.expressionType(ExpressionConversionWorker.java:14
23)
at com.goldencode.p2j.convert.ExpressionConversionWorker.expressionType(ExpressionConversionWorker.java:11
83)
at com.goldencode.p2j.convert.ExpressionConversionWorker$ExpressionHelper.expressionType(ExpressionConvers
ionWorker.java:3691)
at com.goldencode.expr.CE10013.execute(Unknown Source)
at com.goldencode.expr.Expression.execute(Expression.java:373)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:500)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.Rule.executeActions(Rule.java:751)
at com.goldencode.p2j.pattern.Rule.coreProcessing(Rule.java:717)
at com.goldencode.p2j.pattern.Rule.apply(Rule.java:537)
at com.goldencode.p2j.pattern.RuleContainer.apply(RuleContainer.java:590)
at com.goldencode.p2j.pattern.RuleSet.apply(RuleSet.java:98)
at com.goldencode.p2j.pattern.RuleContainer.apply(RuleContainer.java:590)
at com.goldencode.p2j.pattern.RuleSet.apply(RuleSet.java:98)
at com.goldencode.p2j.pattern.AstWalker.walk(AstWalker.java:262)
at com.goldencode.p2j.pattern.AstWalker.walk(AstWalker.java:210)
at com.goldencode.p2j.pattern.PatternEngine.apply(PatternEngine.java:1685)
at com.goldencode.p2j.pattern.PatternEngine.processAst(PatternEngine.java:1571)
at com.goldencode.p2j.pattern.PatternEngine.processAst(PatternEngine.java:1504)
at com.goldencode.p2j.pattern.PatternEngine.run(PatternEngine.java:1056)
... 4 more
```

Tree looks:

```
<ast col="0" id="347892351020" line="0" text="statement" type="STATEMENT">
  <ast col="5" id="347892351021" line="6" text="ASSIGN" type="KW_ASSIGN">
    <annotation datatype="java.lang.Long" key="support_level" value="16400"/>
    <annotation datatype="java.lang.Boolean" key="bracket" value="false"/>
    <ast col="17" id="347892351023" line="7" text="=" type="ASSIGN">
      <ast col="7" id="347892351026" line="7" text="iMouseLoc" type="VAR_INT">
        <annotation datatype="java.lang.Long" key="oldtype" value="2947"/>
        <annotation datatype="java.lang.Long" key="extent" value="2"/>
```

```

        <annotation datatype="java.lang.Long" key="refid" value="347892351003"/>
        <annotation datatype="java.lang.Long" key="support_level" value="16400"/>
    </ast>
    <ast col="0" id="347892351027" line="0" text="expression" type="EXPRESSION">
        <annotation datatype="java.lang.Long" key="support_level" value="16400"/>
        <ast col="33" id="347892351028" line="7" text=":" type="COLON">
            <ast col="27" id="347892351029" line="7" text=";" type="COLON">
                <ast col="19" id="347892351030" line="7" text="pcObject" type="VAR_HANDLE">
                    <annotation datatype="java.lang.Long" key="oldtype" value="2947"/>
                    <annotation datatype="java.lang.Long" key="refid" value="347892350987"/>
                    <annotation datatype="java.lang.Long" key="support_level" value="16400"/>
                </ast>
                <ast col="28" id="347892351031" line="7" text="FRAME" type="ATTR_HANDLE">
                    <annotation datatype="java.lang.Long" key="oldtype" value="660"/>
                    <annotation datatype="java.lang.Long" key="support_level" value="16400"/>
                </ast>
            </ast>
            <ast col="34" id="347892351032" line="7" text="GET-MOUSE-POSITION" type="METH_POLY">
                <annotation datatype="java.lang.Long" key="oldtype" value="1503"/>
            </ast>
        </ast>
    </ast>
</ast>
</ast>
</ast>
</ast>

```

#16 - 02/21/2023 02:06 PM - Constantin Asofiei

Roger, please try this patch:

```

=== modified file 'src/com/goldencode/p2j/convert/ExpressionConversionWorker.java'
--- old/src/com/goldencode/p2j/convert/ExpressionConversionWorker.java 2023-01-12 15:38:22 +0000
+++ new/src/com/goldencode/p2j/convert/ExpressionConversionWorker.java 2023-02-21 19:05:57 +0000
@@ -1898,6 +1898,11 @@
         jcls = "memptr";
         break;

+
+     case KW_GET_MOP:
+         // TODO: check if we can improve on this
+         jcls = "integer[]";
+         break;
+
+     case KW_IF:
+         // by default return the same type as the second operand
+         jcls = expressionType(source.getChildAt(1), false, fuzzy);

```

Greg, I don't see something cleaner - GET-MOUSE-POSITION is marked as METH_POLY in progress.g and SignatureHelper, I think because it returns integer[].

#17 - 02/21/2023 02:10 PM - Greg Shah

It is fine for now.

#18 - 02/21/2023 02:34 PM - Roger Borrello

- Status changed from WIP to Review

- % Done changed from 90 to 100

Committed revision 7135a_14486. Re-running customer app conversion.

#19 - 02/22/2023 04:56 PM - Roger Borrello

- % Done changed from 100 to 90

- Status changed from Review to WIP

The app converted successfully with both changes in place!

But there were compilation errors:

```
[javac] Compiling 31406 source files to app_7135a-14486_20230215a/build/classes
[javac] Compiling 9108 source files to app_7135a-14486_20230215a/build/classes
[javac] Note: Some input files use or override a deprecated API.
[javac] Note: Recompile with -Xlint:deprecation for details.
[javac] Compiling 3203 source files to app_7135a-14486_20230215a/build/classes
[javac] app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelData.java:36: error: RenderLabelData is not abstract and does not override abstract method toLegacyString(jobject<? extends Map>) in LabelRenderer
[javac] public class RenderLabelData
[javac]     ^
[javac] app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelItemToDateShort.java:29: error: RenderLabelItemToDateShort is not abstract and does not override abstract method toLegacyString(jobject<? extends Map>) in LabelRenderer
[javac] public class RenderLabelItemToDateShort
[javac]     ^
[javac] app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelLegend.java:29: error: RenderLabelLegend is not abstract and does not override abstract method toLegacyString(jobject<? extends Map>) in LabelRenderer
[javac] public class RenderLabelLegend
[javac]     ^
[javac] app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelSeriesToDateShort.java:29: error: RenderLabelSeriesToDateShort is not abstract and does not override abstract method toLegacyString(jobject<? extends Map>) in LabelRenderer
[javac] public class RenderLabelSeriesToDateShort
[javac]     ^
[javac] app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelTooltip.java:36: error: RenderLabelTooltip is not abstract and does not override abstract method toLegacyString(jobject<? extends Map>) in LabelRenderer
[javac] public class RenderLabelTooltip
[javac]     ^
[javac] Note: Some input files use or override a deprecated API.
[javac] Note: Recompile with -Xlint:deprecation for details.
[javac] Note: app_7135a-14486_20230215a/src/.../ChartPopup.java uses unchecked or unsafe operations.
[javac] Note: Recompile with -Xlint:unchecked for details.
[javac] 5 errors
```

BUILD FAILED

Did the conversion changes contribute to these errors, or do I need to look for something else?

#20 - 02/23/2023 08:11 AM - Greg Shah

This is probably something different. The `toLegacyString(jobject<? extends Map>)` is our replacement name for `toString()` which conflicts with `Object.toString()` in Java. This version has a special signature that takes `jobject<? extends Map>` which would actually not conflict with the no-arg `Object` version. Anyway, look at the `LabelRenderer` and the non-abstract child classes as see what we are generating here and why.

#21 - 02/23/2023 09:18 AM - Roger Borrello

For this class:

```
USING Progress.Lang.*.
                                /* FWD mode */
    USING com.goldencode.p2j.ui.chart.* FROM java.
    USING java.util.*                  FROM java.

CLASS sy.UltraChart.RenderLabelData
                                /* FWD mode */
    IMPLEMENTS com.goldencode.p2j.ui.chart.LabelRenderer:

    DEFINE PRIVATE VARIABLE id AS CHARACTER NO-UNDO
        INITIAL "x".

                                /* FWD mode */
    METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
        DEFINE VARIABLE fValue AS DECIMAL NO-UNDO.

        ASSIGN fValue = DECIMAL(pChartHash:get("DATA_VALUE"):toString()) NO-ERROR.
        CASE pChartHash:get("DATA_VALUE_TYPE"):toString():
            WHEN "Â£" THEN
                RETURN "Â£ " + TRIM(STRING(fValue,"->>>,>>>,>>9")).
            WHEN "%" THEN
                RETURN STRING(ROUND(fValue,2)) + " %".
            OTHERWISE
                RETURN pChartHash:get("DATA_VALUE"):toString().
        END CASE.

    END METHOD.

END CLASS.
```

We are generating:

```
public class RenderLabelData
extends BaseObject
implements com.goldencode.p2j.ui.chart.LabelRenderer
{
    @LegacySignature(type = Type.VARIABLE, name = "id")
    private character id = TypeFactory.character("x");

    public void __client_clientnet_sy_ultrachart_RenderLabelData_execute__()
    {
        /* FWD mode */
        externalProcedure(RenderLabelData.class, RenderLabelData.this, new Block((Body) () ->
        {
            {
            }
        }));
        /* FWD mode */
    }

    @LegacySignature(type = Type.CONSTRUCTOR)
    public void __client_clientnet_sy_ultrachart_renderLabelData_constructor__()
    {
        internalProcedure(RenderLabelData.class, this, "__client_clientnet_sy_ultrachart_renderLabelData_constru
ctor__", new Block((Body) () ->
        {
            __lang_BaseObject_constructor__();
        }));
    }
}
```

```

    }

    @LegacySignature(type = Type.METHOD, name = "ToString", returns = "CHARACTER", parameters =
    {
        @LegacyParameter(name = "pChartHash", type = "JOBJECT", qualified = "java.util.Map", mode = "INPUT")
    })
    /* FWD mode */
    public character toString_(final jobject<? extends java.util.Map> _pChartHash)
    {
        jobject<? extends java.util.Map> pChartHash = TypeFactory.initInput(_pChartHash);
        decimal fValue = TypeFactory.decimal();

        return function(RenderLabelData.class, this, "ToString", character.class, new Block((Body) () ->
        {
            silent(() -> fValue.assign(new decimal(pChartHash.ref().get("DATA_VALUE").toString())));

            switch (StringHelper.safeTrimTrailing(pChartHash.ref().get("DATA_VALUE_TYPE").toString()))
            {
                case "Âf":
                {
                    storeReturnValue(concat("Âf ", trim(valueOf(fValue, "->>>, >>>, >>9"))));
                    return;
                }
                case "%":
                {
                    storeReturnValue(concat(valueOf(round(fValue, 2)), " %"));
                    return;
                }
                default:
                {
                    storeReturnValue(pChartHash.ref().get("DATA_VALUE").toString());
                    return;
                }
            }
        }
        )))
    }
}

```

LabelRenderer class is:

```

public interface LabelRenderer
{
    public character toLegacyString(jobject<? extends Map> formats);
}

```

#22 - 02/23/2023 09:25 AM - Greg Shah

We are choosing to emit `toString_()` name instead of `toLegacyString()` in the child classes.

The `com.goldencode.p2j.ui.chart.LabelRenderer` does not include the normal legacy signature annotations (at either the class or method levels). I suspect that is at least part of the problem.

#23 - 02/23/2023 10:29 AM - Roger Borrello

Greg Shah wrote:

The `com.goldencode.p2j.ui.chart.LabelRenderer` does not include the normal legacy signature annotations (at either the class or method levels). I suspect that is at least part of the problem.

Is there a good example which I could follow to address that? In looking through some of the `com.goldencode.p2j.ui.chart` classes, there aren't any annotations to model after.

#24 - 02/23/2023 10:35 AM - Greg Shah

Look at anything in `com.goldencode.p2j.oo`.

#25 - 02/23/2023 10:39 AM - Constantin Asofiei

Greg, adding the `LegacySignature` at a Java interface method will not work.

Before 6129c, `toString` I think had a special meaning during conversion, that it got converted to `toLegacyString`. For now, I propose for the 4GL method name to match exactly the overridden Java method name, `toLegacyString`.

I think for Java inheritance in the 4GL code, we need to hard-code the method names, and do not convert them at all - treat them as their Java counterpart.

#26 - 02/23/2023 12:31 PM - Greg Shah

You are proposing that we just hand-edit the 4GL source code to change the names?

#27 - 02/23/2023 12:31 PM - Constantin Asofiei

Greg Shah wrote:

You are proposing that we just hand-edit the 4GL source code to change the names?

Correct. If a 4GL-style class is inherited from a Java class, then the method names must be treated as Java names.

So the 4GL would need to be patched to have toString become toLegacyString:

```
&IF DEFINED(FWD-VERSION) = 0 &THEN /* NOT FWD */
    METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS System.Collections.Hashtable):

        DEFINE VARIABLE fValue AS DECIMAL NO-UNDO.

        ASSIGN fValue = DECIMAL(pChartHash["DATA_VALUE"]:ToString()) NO-ERROR.
        CASE pChartHash["DATA_VALUE_TYPE"]:ToString():
            WHEN "E" THEN
                RETURN "E " + TRIM(STRING(fValue,"->>>, >>>, >>9")).
            WHEN "%" THEN
                RETURN STRING(ROUND(fValue,2)) + " %".
            OTHERWISE
                RETURN pChartHash["DATA_VALUE"]:ToString().
        END CASE.

    END METHOD.
&ELSE /* FWD mode */
    METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
        DEFINE VARIABLE fValue AS DECIMAL NO-UNDO.

        ASSIGN fValue = DECIMAL(pChartHash:get("DATA_VALUE"):toLegacyString()) NO-ERROR.
        CASE pChartHash:get("DATA_VALUE_TYPE"):toString():
            WHEN "E" THEN
                RETURN "E " + TRIM(STRING(fValue,"->>>, >>>, >>9")).
            WHEN "%" THEN
                RETURN STRING(ROUND(fValue,2)) + " %".
            OTHERWISE
                RETURN pChartHash:get("DATA_VALUE"):toLegacyString().
        END CASE.

    END METHOD.
&ENDIF
```

#29 - 02/23/2023 12:40 PM - Greg Shah

Yes

#30 - 02/23/2023 12:44 PM - Constantin Asofiei

Roger, sorry, in this case rename toLegacyString in the Java class to toString. That name was chosen because of the way FWD hard coded that name at the time.

#31 - 02/23/2023 12:53 PM - Roger Borrello

Constantin Asofiei wrote:

Roger, sorry, in this case rename toLegacyString in the Java class to toString. That name was chosen because of the way FWD hard coded that name at the time.

OK... so you mean change FWD's LabelRenderer method:

```
public interface LabelRenderer
{
    /**
     * Get the string representation for a certain value from format map.
     *
     * @param    formats
     *          The map holding the values and formats.
     *
     * @return   The string representation.
     */
    public character toString(jobject<? extends Map> formats);
}
```

Is that the only rename necessary?

#32 - 02/23/2023 01:08 PM - Constantin Asofiei

Roger, is a little more tricky than this, NameConverter will automatically append an underscore because toString belongs to java.lang.Object and is a reserved name.

I think for this case of Java inheritance from within 4GL code, FWD needs to preserve the method name if this is an override; so, if we mark the

method with OVERRIDE (although 4GL doesn't require it...) in the 4GL code, this will also allow the Java compiler to force the override, and for the FWD conversion to know to preserve this method name because it matches a super-method.

In our ToString case, the other problem is that if you use ToString from the 4GL code, you actually really need to use toString, because this is the 'real Java method name inherited from the LabelRenderer interface'. In the customer's app, can you easily identify and replace ToString with toString in the 4GL code?

Greg, if we start going with LegacySignature, we are adding a binding only for Java code from within FWD, which does not solve the problem if the interface/class is from another Java library.

#33 - 02/23/2023 01:19 PM - Constantin Asofiei

Roger, as a fast way to solve it: in the 4GL code, can we change all RenderLabelData.ToString(INPUT pChartHash AS java.util.Map) references + definition to be renamed asString, and the same with FWD's LabelRenderer.toString, renamed to LabelRenderer.asString?

This will move out of the way all the problems we have with toString, and I'll create a task to deal with the points discussed in previous notes.

#34 - 02/23/2023 01:39 PM - Roger Borrello

So the five 4GL procedures that had issues with LabelRenderer.toLegacyString:

1. app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelData.java
2. app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelItemToDateShort.java
3. app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelLegend.java
4. app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelSeriesToDateShort.java
5. app_7135a-14486_20230215a/src/.../ultrachart/RenderLabelTooltip.java

to be modified similar to:

```
&ELSE                                /* FWD mode */
METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
  DEFINE VARIABLE fValue AS DECIMAL NO-UNDO.

  ASSIGN fValue = DECIMAL(pChartHash:get("DATA_VALUE"):asString()) NO-ERROR.
  CASE pChartHash:get("DATA_VALUE_TYPE"):asString():
    WHEN "Â£" THEN
      RETURN "Â£ " + TRIM(STRING(fValue,"->>>,>>>,>>9")).
    WHEN "%" THEN
      RETURN STRING(ROUND(fValue,2)) + " %".
    OTHERWISE
      RETURN pChartHash:get("DATA_VALUE"):asString().
  END CASE.

END METHOD.
&ENDIF
```

And src/com/goldencode/p2j/ui/chart/LabelRenderer.java to be modified:

```
=== modified file 'src/com/goldencode/p2j/ui/chart/LabelRenderer.java'
--- src/com/goldencode/p2j/ui/chart/LabelRenderer.java      2020-03-04 19:24:49 +0000
+++ src/com/goldencode/p2j/ui/chart/LabelRenderer.java      2023-02-23 18:33:22 +0000
@@ -2,10 +2,11 @@
  ** Module      : LabelRenderer.java
  ** Abstract    : Definition for a label renderer.
  **
- ** Copyright (c) 2020, Golden Code Development Corporation.
+ ** Copyright (c) 2020-2023, Golden Code Development Corporation.
  **
```

```

** --#- -I- --Date-- -----Description-----
** 001 CA  20200304 Created initial version.
+** 002 RFB 20230223 Changed method name from toLegacyString to asString. Ref. #TBD.
*/

/*
@@ -84,5 +85,5 @@
    *
    * @return The string representation.
    */
- public character toLegacyString(jobject<? extends Map> formats);
+ public character asString(jobject<? extends Map> formats);
}

```

#35 - 02/23/2023 01:58 PM - Constantin Asofiei

Something like this, and ToString (INPUT pChartHash AS java.util.Map): needs to be asString (INPUT pChartHash AS java.util.Map):

But, I can't find who calls the original ToString(java.util.Map) method - can you look in the Java code for a previous conversion of the customer's app and find the toLegacyString(java.util.Map) calls? I don't have any converted code for the app, and looking through the abl/ code I have, I can't find any.

#36 - 02/23/2023 02:01 PM - Constantin Asofiei

I think LabelRenderer is part of the FWD's ChartWidget.LabelHash, which is not implemented at this time.

#37 - 02/23/2023 02:09 PM - Greg Shah

FYI, officially we do not support subclassing 4GL code from Java parent classes or implementing Java interfaces in 4GL code. I like the idea that we bypass this restriction for now.

#38 - 02/23/2023 02:13 PM - Roger Borrello

I see this:

```

rfb@rfb:~$ grep -R toLegacyString\(.
./client/clientnet/sy/ultrachart/RenderLabelSeriesToDateShort.java: public character toLegacyString(final jo
bje<? extends java.util.Map> _pChartHash)
./client/clientnet/sy/ultrachart/RenderLabelItemToDateShort.java: public character toLegacyString(final jobj
ect<? extends java.util.Map> _pChartHash)
./client/clientnet/sy/ultrachart/RenderLabelTooltip.java: public character toLegacyString(final jobject<? ex
tends java.util.Map> _pChartHash)
./client/clientnet/sy/ultrachart/RenderLabelData.java: public character toLegacyString(final jobject<? exten
ds java.util.Map> _pChartHash)
./client/clientnet/sy/ultrachart/RenderLabelLegend.java: public character toLegacyString(final jobject<? ext
ends java.util.Map> _pChartHash)

```

So should I make those changes? Or is there more to this?
That's the same list of errors.

#39 - 02/23/2023 02:15 PM - Constantin Asofiei

Roger, thanks, that confirms what you posted. Just change the 4GL method definitions in these classes to be asString and the same with LabelRenderer. This should solve the problem.

#40 - 02/23/2023 02:16 PM - Constantin Asofiei

I've just noticed something in your patch - I mean to change:

```
METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
```

to

```
METHOD PUBLIC CHARACTER asString (INPUT pChartHash AS java.util.Map):
```

Only the ToString which has an argument as java.util.Map needs to change. Do not touch plain ToString() calls. I don't know what those are.

#41 - 02/23/2023 02:31 PM - Roger Borrello

Constantin Asofiei wrote:

Only the ToString which has an argument as java.util.Map needs to change. Do not touch plain ToString() calls. I don't know what those are.

Got it... just the signatures:

```
diff -r old/abl/client/clientnet/sy/UltraChart/RenderLabelData.cls new/abl/client/clientnet/sy/UltraChart/RenderLabelData.cls
46c46
< METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS System.Collections.Hashtable):
---
> METHOD PUBLIC CHARACTER asString (INPUT pChartHash AS System.Collections.Hashtable):
diff -r old/abl/client/clientnet/sy/UltraChart/RenderLabelItemToDateShort.cls new/abl/client/clientnet/sy/UltraChart/RenderLabelItemToDateShort.cls
45c45
< METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
---
> METHOD PUBLIC CHARACTER asString (INPUT pChartHash AS java.util.Map):
diff -r old/abl/client/clientnet/sy/UltraChart/RenderLabelLegend.cls new/abl/client/clientnet/sy/UltraChart/RenderLabelLegend.cls
49c49
< METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
---
> METHOD PUBLIC CHARACTER asString (INPUT pChartHash AS java.util.Map):
diff -r old/abl/client/clientnet/sy/UltraChart/RenderLabelSeriesToDateShort.cls new/abl/client/clientnet/sy/UltraChart/RenderLabelSeriesToDateShort.cls
45c45
< METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
---
> METHOD PUBLIC CHARACTER asString (INPUT pChartHash AS java.util.Map):
```

```
diff -r old/abl/client/clientnet/sy/UltraChart/RenderLabelTooltip.cls new/abl/client/clientnet/sy/UltraChart/RenderLabelTooltip.cls
62c62
< METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
---
> METHOD PUBLIC CHARACTER asString (INPUT pChartHash AS java.util.Map):
```

#42 - 02/23/2023 04:35 PM - Roger Borrello

So the incremental build completed, including the compilation. I will need to do some testing, but this is committed to 7135 as revision 14487.

#43 - 02/23/2023 05:30 PM - Roger Borrello

There's a lot of issues. Noted one for the GUI application in #6851-203. The ChUI app gets ** LABEL is not a settable attribute for LITERAL ?. (4052) at one point.

#44 - 02/24/2023 05:57 AM - Greg Shah

Open bugs for these runtime issues. If conversion works now, we move on and close this task.

#45 - 02/24/2023 10:43 AM - Roger Borrello

- Status changed from WIP to Review

- % Done changed from 90 to 100

Opened task #7145 to handle the first of the runtime errors.

#48 - 03/01/2023 03:13 PM - Roger Borrello

Opened task #7146 for the other runtime issue.

Is the patching of the customer app procedures as noted in [#7135-34](#) (and show below) required to be ongoing? Or is there a FWD change that will render it unnecessary?

```
--- sy/UltraChart/RenderLabelData.cls
+++ sy/UltraChart/RenderLabelData.cls
@@ -59,7 +59,7 @@

    END METHOD.
    &ELSE /* FWD mode */
- METHOD PUBLIC CHARACTER ToString (INPUT pChartHash AS java.util.Map):
+ METHOD PUBLIC CHARACTER asString (INPUT pChartHash AS java.util.Map):
    DEFINE VARIABLE fValue AS DECIMAL NO-UNDO.

    ASSIGN fValue = DECIMAL(pChartHash:get("DATA_VALUE"):toString()) NO-ERROR.
```

#49 - 03/01/2023 03:15 PM - Constantin Asofiei

Roger Borrello wrote:

Opened task #7146 for the other runtime issue.

Is the patching of the customer app procedures as noted in [#7135-34](#) (and show below) required to be ongoing? Or is there a FWD change that will render it unnecessary?

[...]

The patch is permanent.

#50 - 03/01/2023 03:39 PM - Roger Borrello

Constantin Asofiei wrote:

The patch is permanent.

Thanks... I will pursue the customer checking the patched versions into their change control.

#51 - 03/02/2023 03:45 PM - Roger Borrello

7135a has been rebased to trunk_14490.

#52 - 03/02/2023 04:34 PM - Roger Borrello

Roger Borrello wrote:

7135a has been rebased to trunk_14490.

If there are other customers that might have the same type of code as the customer that found this issue, please let me know (or perhaps this branch has already been used to do a conversion for them).

#53 - 03/02/2023 04:35 PM - Greg Shah

Not at this time.

#54 - 03/06/2023 10:46 AM - Roger Borrello

- Status changed from Review to Test

7135a was merged to trunk as revision 14493. It was archived.

#55 - 03/06/2023 11:05 AM - Greg Shah

- Status changed from Test to Closed

Files

roger.cls.ast	41.6 KB	02/20/2023	Roger Borrello
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