

What's new in

Xtext

A Language Development Framework

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STATE MACHINES

The image shows two Eclipse IDE windows. The left window, titled `*FowlerDsl.xtext`, contains the following Xtext DSL code:

```
grammar org.eclipse.xtext.example.FowlerDsl with org.eclipse.xtext.common.Terminals

generate fowlerdsl "http://example.xtext.org/FowlerDsl"

State :
  {State}
  'events'
  (events+=Event)*
  'end'
  'commands'
  (commands+=Command)*
  'end'
  (states+=State)*;

Event :
  (resetting?='resetting')? name=ID code=ID;

Command :
  name=ID code=ID;

State :
  'state' name=ID
  ('actions' '{' (actions+=[Command])+ '}')?
  (transitions+=Transition)*
  'end';

Transition :
  event=[Event] '=>' state=[State];
```

The right window, titled `*sample.fowlerdsl`, shows the generated state machine code:

```
events
  startEvent START1
  stopEvent STOP2
end

commands
end

state start
  startEvent => unknown
end

state stop
  stopEvent =>
end

state emptyState
  No transitions
end
```

A context menu is open over the `unknown` reference in the `start` state, offering the following options:

- Change to 'emptyState'
- Change to 'start'
- Change to 'stop'

The bottom of the IDE shows the `Problems` view with the following error messages:

Description	Resource
Errors (2 items)	
Couldn't resolve reference to State 'unknown'. sample.fowlerdsl	sample.fowlerdsl
No transitions	sample.fowlerdsl

CONFIGURATION

The screenshot shows an IDE window titled `*GenerateMyDsl.mwe2` containing the following configuration code:

```
var grammarURI = "classpath:/org.xtext.example.mydsl/MyDsl.xtext"  
var file.extensions = "mydsl"  
var projectName = "org.xtext.example.mydsl"  
var runtimeProject = "../${projectName}"  
var unusedProperty = "unused"  
  
Workflow {  
  bean = StandaloneSetup {  
    platformUri = "${runtimeProject}/.."  
  }  
  bean = MyDslRuntimeMo  
  
  component = Directory {  
    directory = "${ru  
  }  
  
  component = Directory {  
    directory = "${runtimeProject}.ui/src-gen"  
  }  
  
  component = Generator {  
    pathRtProject = runtimeProject  
    pathUiProject = "${runtimeProject}.ui"  
    projectNameRt = file  
    projectNameUi  
  
    language = {  
      uri = gra  
      fileExten  
  
      // Java A  
      fragment  
  
      // genera  
      fragment  
      // refere  
    }  
  
    // the serialization component  
    fragment = parseTreeConstructor.ParseTreeConstructorFragment {}  
  }  
}
```

A warning message is displayed: "The var 'unusedProperty' is never read locally." A quick outline is open over the `Workflow` block, showing a tree structure:

- file.extensions
- grammarURI
- projectName
- runtimeProject
- unusedProperty
- Workflow
- component
- language
- fragment

Another quick outline is open over the `language` block, showing a tree structure:

- org.xtext.example.mydsl.MyDsl
- property declarations
- file.extensions
- Workflow
- component
- language
- fileExtensions
- fragment
- fileExtensions

The Outline window on the right shows a tree structure:

- property declarations
 - grammarURI
 - file.extensions
 - projectName
 - runtimeProject
 - unusedProperty
- Workflow
 - bean
 - platformUri
 - bean
 - component
 - directory
 - component
 - directory
 - component
 - pathRtProject
 - pathUiProject
 - projectNameRt
 - projectNameUi
 - language
 - uri
 - fileExtensions
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment
 - fragment

PL / SQL

The image shows a screenshot of an IDE with several windows and a problem list. The main window displays the following PL/SQL code:

```
app_message_pkg.sql
-- create or replace
package body app_message_pkg
is
-----
-- Create a new message
-----
procedure createAppMessage (
    p_mesg_type      in
    p_mesg_name      in
    p_mesg_text      in
)
is
begin
insert into app_messages
values (
exception
when others
then
    if sqlcode = -1
    then
        null;
    end if;
end createAppMessage;

end app_message_pkg;
/
show errors
```

The `install.sql` window contains:

```
start sequences
start app_messages
start app_message_pkg

exec app_message_pkg.createAppMessage('ERROR', 'NAME_NOT_UNIQUE', 'The name must be unique.');
```

The `*app_messages.sql` window contains:

```
drop table app_messages cascade constraints;

create table app_messages (
    mesg_id      number(10),
    mesg_type    varchar2(30) constraint mesg_mesg_type_nn not null,
    mesg_name    varchar2(30) constraint mesg_mesg_name_nn not null,
    mesg_text    varchar2(200) constraint mesg_mesg_text_nn not null
);

comment on table app_messages is 'Application messages';
comment on column app_messages.mesg_id is 'Primary Key';
comment on column app_messages.mesg_type is 'Type of message';
comment on column app_messages.mesg_name is 'Unique name of the message';
comment on column app_messages.mesg_text is 'Message text';

alter table app_messages
add constraint mesg_pk
primary key (mesg_id)
using index;

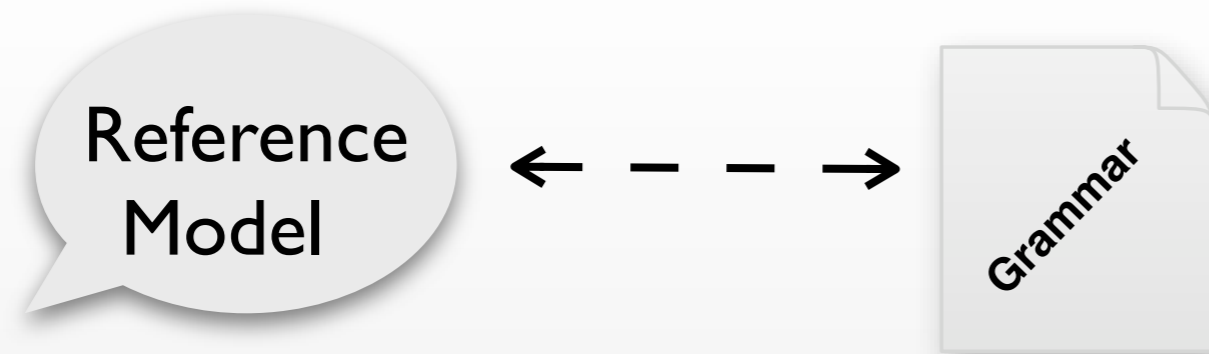
alter table app_messages
add constraint mesg_u
unique (mesg_name)
using index;
```

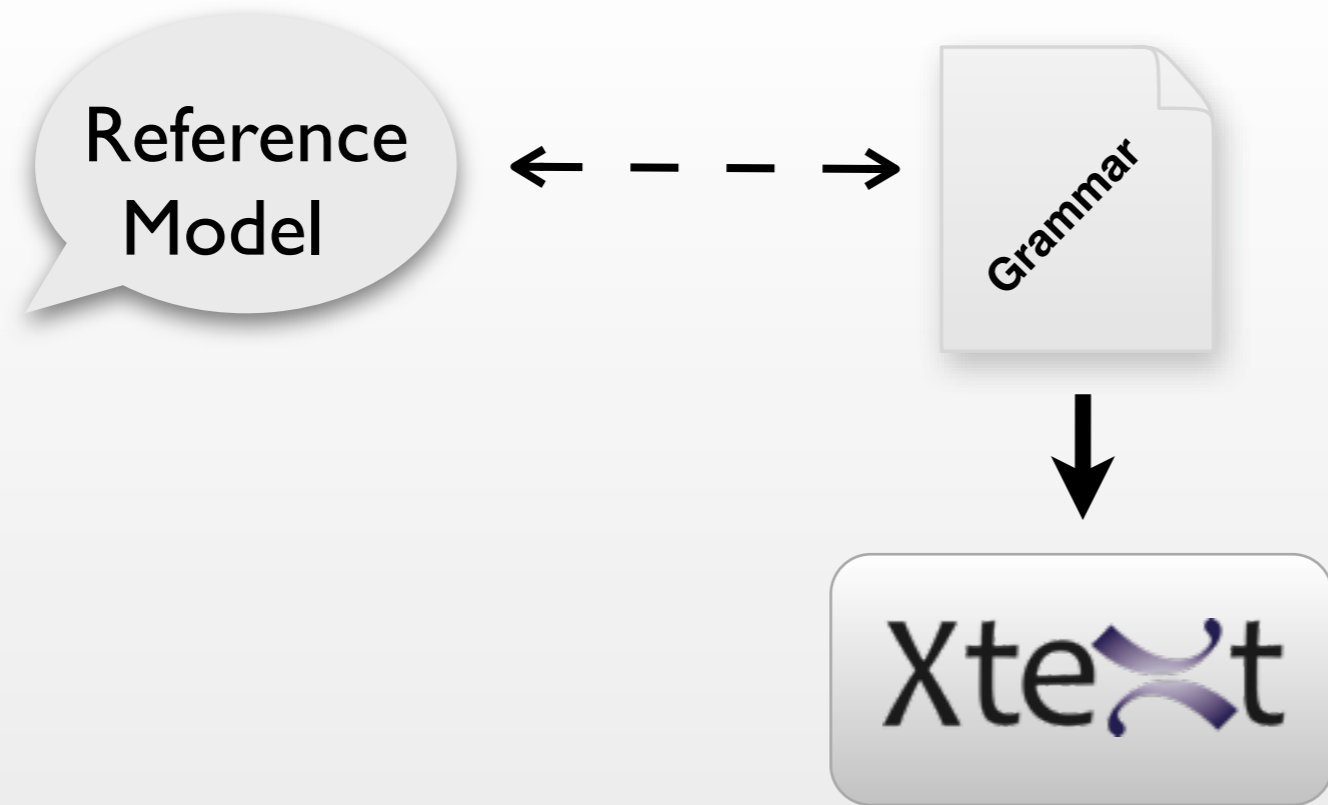
A tooltip message reads: "Guideline 25 violated: Always specify the target columns when executing an insert command."

The Problems window shows 3 errors:

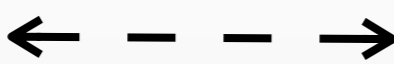
- Guideline 25 violated: Always specify the target columns when executing an insert command.
- Guideline 47 violated: Never handle unnamed exceptions using the others clause.
- Guideline 54 violated: Always use a string variable to execute dynamic SQL.



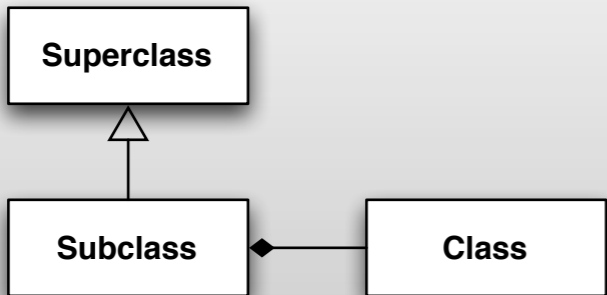




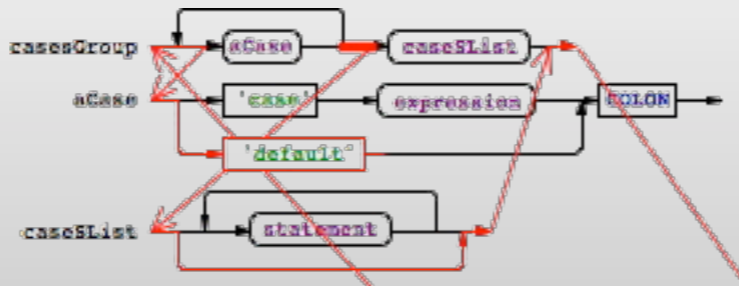
Reference Model



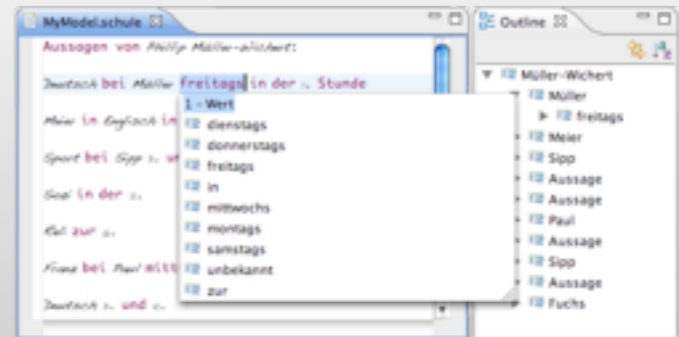
Xtext Runtime



ecore meta model



LL(*) Parser



editor

The image features a pair of red, vertically pleated curtains that are pulled back to reveal a solid black background. The word "Showtime" is written in a large, white, sans-serif font across the center of the black area. The lighting on the curtains is soft, highlighting their texture and the way they are gathered.

Showtime

Index

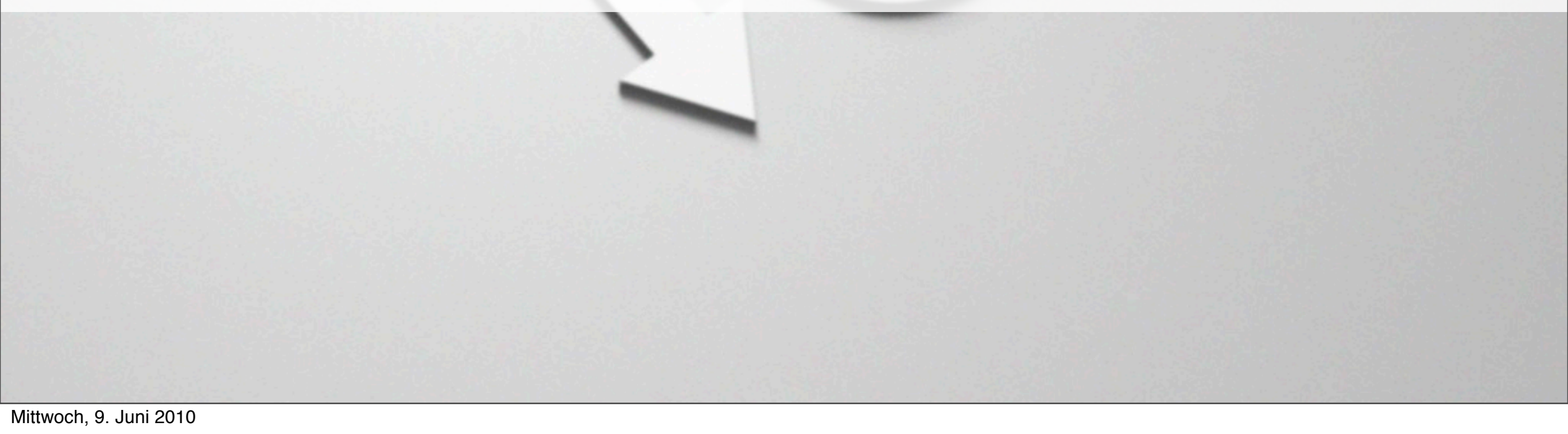


Builder





Quickfixes



Referring to Java™ Types

AutoEditing

QuickOutline

BracketMatching

ConcreteSyntaxValidator

Ecore2XtextWizard

CaseInsensitiveFolding

Performance

SerializerImprovements

UnorderedGroups



Questions?

find out more at
<http://www.xtext.org>