





# 15 EMF projects in 25 minutes

A guided tour in the EMF EcoSystem

Cédric Brun

# Rules

- Same amount of time per project
  - 1min30
- EMF Related
  - Tools for Ecore or working with EMF Core
  - Framework on top of EMF Core
- Same structure for each project
  - Scope and where to find it
  - An example (mostly code)
  - My feedback



<http://thenounproject.com/einfachein/#>

#EclipseCon

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# EcoreTools

Graphical Modeler for Ecore



<http://download.eclipse.org/releases/juno>

#EclipseCon

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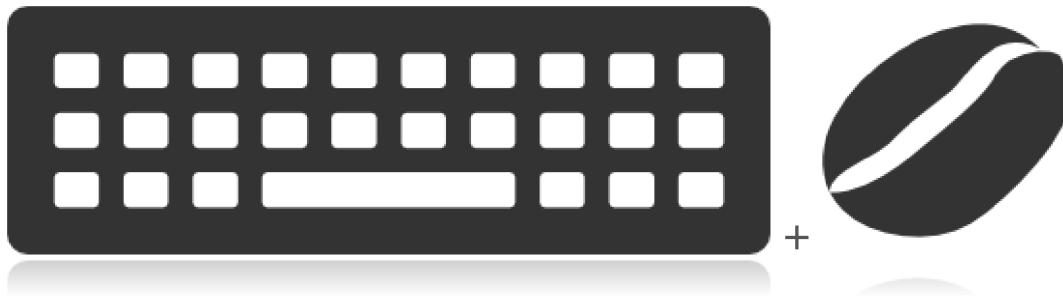
# EcoreTools

## ChocoApp domain model

- Feedback

# Xcore

Textual Ecore with Java binding



 <http://wiki.eclipse.org/Xcore>

 <http://download.eclipse.org/releases/juno>

#EclipseCon

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```
@Ecore(nsURI="http://www.eclipse.org/econ/choco", nsPrefix="choco")
@GenModel(fileExtensions="choco", editDirectory="/org.eclipse.econ.xcore.edit/src-gen")
package org.eclipse.econ.xcore.choco
```

```
import java.util.Date
```

```
class Choco
```

```
{
    String name
    Date [0..1] expiration
    refers User [1] culprit opposite chocos
    refers User [1] issuedBy opposite proposals
    refers Reason [1] reason
    refers Up [] upVotes opposite choco
    refers Down [] downVotes opposite choco
    derived ChocoState state get {
        if (expiration != null) {
            if (expiration.after(new Date())){
                return ChocoState::CONSUMED
            } else {
                return ChocoState::PENDING
            }
        }
        if (upVotes.size() > downVotes.size()) {
            return ChocoState::ACCEPTED
        }
    }
}
```

```
enum ChocoState
```

```
{
    pending
    'accepted
    'consumed
}
```

```
; Feedback
```

```
consumed
```

```
accepted
```

```
#EclipseCon
```

```
/**
 * <!-- begin-user-doc -->
 * <!-- end-user-doc -->
 * @generated
 */
public ChocoState getState()
{
    Date _expiration = this.getExpiration();
    boolean _notEquals = (!Objects.equal(_expiration, null));
    if (_notEquals)
    {
        Date _expiration_1 = this.getExpiration();
        Date _date = new Date();
        boolean _after = _expiration_1.after(_date);
        if (_after)
        {
            return ChocoState.CONSUMED;
        }
        else
        {
            return ChocoState.PENDING;
        }
    }
    EList<Up> _upVotes = this.getUpVotes();
    int _size = _upVotes.size();
    EList<Down> _downVotes = this.getDownVotes();
    int _size_1 = _downVotes.size();
    boolean _greaterThan = (_size > _size_1);
    if (_greaterThan)
    {
        return ChocoState.ACCEPTED;
    }
    return null;
}

return null;
return ChocoState.ACCEPTED;
```

# Extended Editing Framework (EEF)

Rich properties and dialogs



 <http://www.eclipse.org/modeling/emft/?project=eef>

 <http://download.eclipse.org/releases/juno>

#EclipseCon

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platform:/resource/org.eclipse.econ.ecoretools/model/choco.eefgen

Model /org.eclipse.econ.ecoretools/src-gen

Gen Edition Context org.eclipse.econ.ecor

Gen Views Repository org.eclipse.econ.ecc

platform:/resource/org.eclipse.econ.ecoretools/

Properties Edition Context Edition Context for

Repository choco

Category choco

View Choco

Container properties

Element Editor name

Element Editor expiration

Element Editor culprit

Element Editor upVotes

Element Editor downVotes

Element Editor issuedBy

Element Editor reason

View BuildFail

View Other

View Up

View Down

View User

• Feedback

eclipsecon.ch... x

Resource Set

platform:/resource/choco-eef/eclipsecon.choco

Board

User Cédric Brun

Choco I know from reliable sources that Etienne missed the deadline

User Etienne Juliot

Up

Down

User Mikaël Barbero

Choco Broke the build !

User Alex Lagarde

User Stéphane Begaudeau

Build Fail Fri Oct 12 00:02:13 CEST 2012

Build Fail Wed Oct 03 00:03:19 CEST 2012

Selection Parent List Tree Table Tree with Columns

Ta... Properties x

Choco Broke the build !

Base

Properties

Name: Broke the build !

Expiration:

Culprit: User Mikaël Barbero

Up Votes

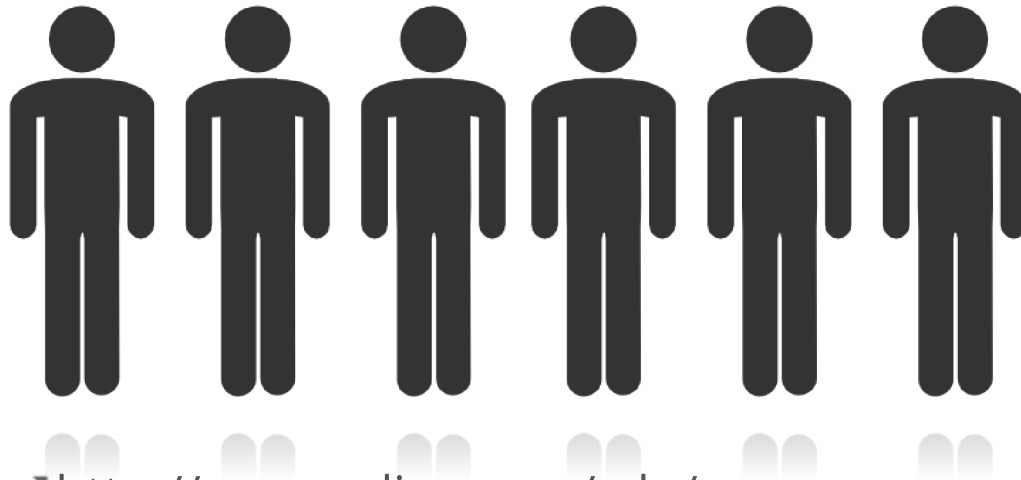
Up

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# CDO

Share and Distribute



 <http://www.eclipse.org/cdo/>

 <http://download.eclipse.org/releases/juno>

#EclipseCon

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## Transaction, History ...

JAVA

```
//changing stuff
CDOTransaction tx = session.openTransaction();
CDOResource res = tx.getResource("allChocos.choco", true);
Board board = (Board) res.getContents().get(0);
BuildFail newFailure = ChocoFactory.eINSTANCE.createBuildFail();
newFailure.setDate(new Date());
newFailure
    .setFailedLogURI("http://build.eclipse.org/hudson/somejob/23/build.log");
board.getReasons().add(newFailure);
tx.commit();

// using history

CDOView view = session.openView(aLongRepresentingSomeDate);
Board board = (Board) view.getResource("allChocos.choco").getContents()
    .get(0);
// I'll get the result from the past
board.getChocos();
board.getReasons();

session.getCommitInfoManager().getCommitInfo(aLongRepresentingSomeDate)
    .getComment();
```

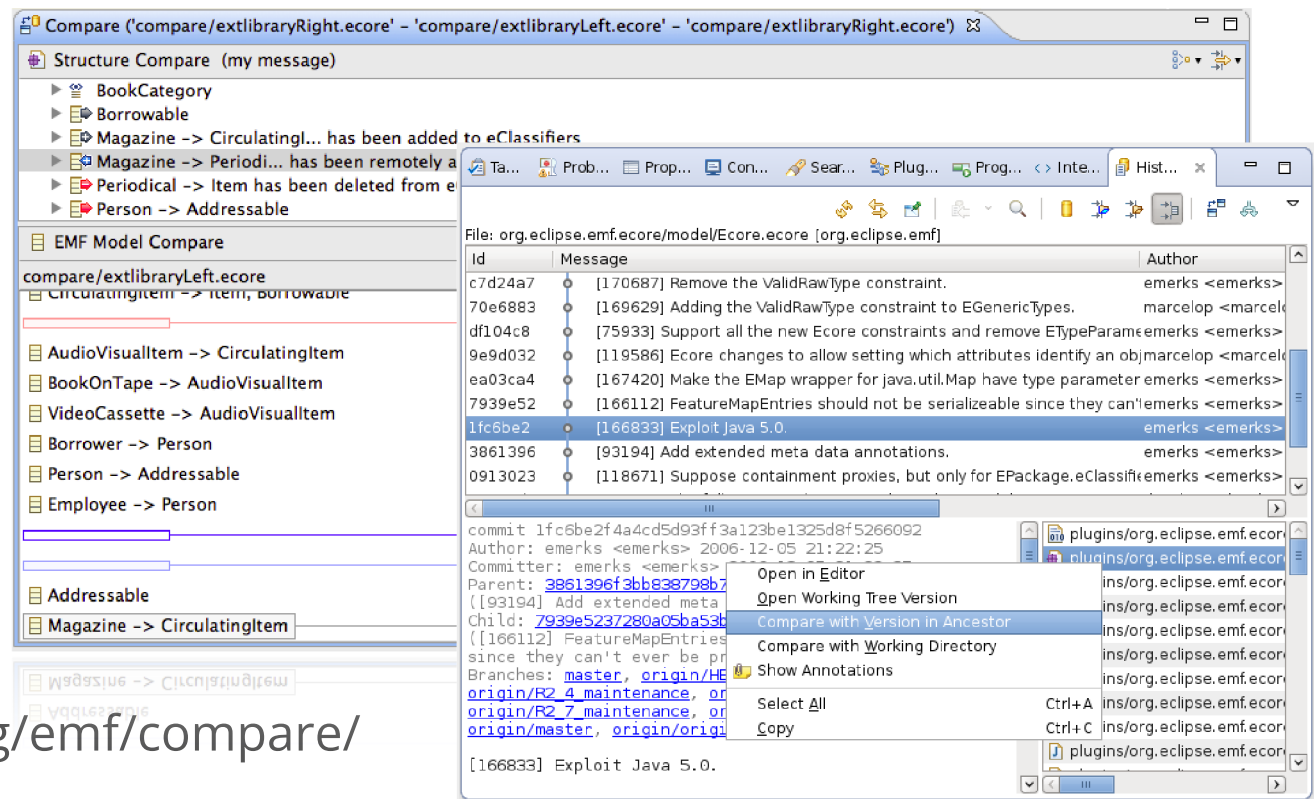
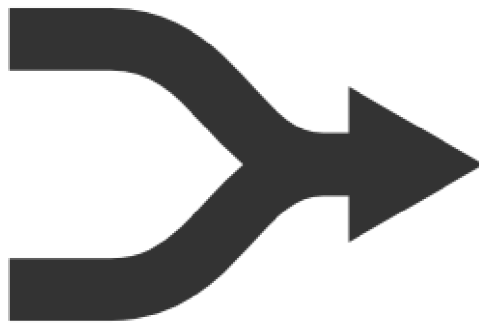
- "Now that I've Got a Model - Where's My Application?" in Theater/ Thursday 10:30am

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# Compare 2.x

Team, Match, Diff and Merge



<http://www.eclipse.org/emf/compare/>

<http://download.eclipse.org/modeling/emf/compare/updates/interim/2.1>

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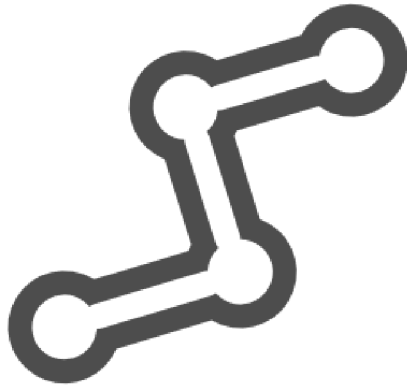
## Detecting conflict during REST operations

```
public Resource put(Uri resourcePath, Resource putFromRemoteClient, long ancestorTimestamp, Resource ancestorFromDB = data.getResourcePerRevision(resourcePath, ancestorTimestamp); IComparisonScope scope = EMFCompare.createDefaultScope(putFromRemoteClient, latestFromDB.getResource(), ancestorFromDB); Comparison comp = EMFCompare.builder().build().compare(scope); for (Conflict conflict : comp.getConflicts()) { // How do you want to handle a conflict ? } for (Diff diff : comp.getDifferences()) { diff.copyLeftToRight(); } return latestFromDB.getResource(); }
```

- EMF Compare 2.0 : Scaling to Millions / 2pm today

# EMFPath

Mixing Guava and EMF



 <http://code.google.com/a/eclipselabs.org/p/emfpath/>

 <http://svn.codespot.com/a/eclipselabs.org/emfpath/trunk/repository/>

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# Querying with Java

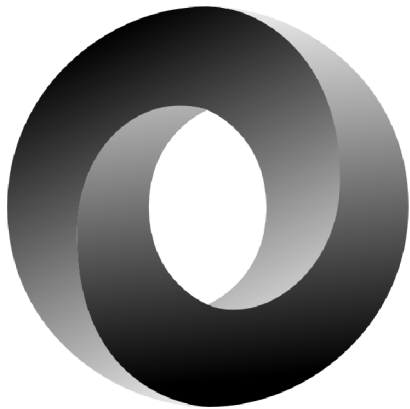
JAVA

```
public class UserQuery {  
    private User user;  
    public UserQuery(User user) {  
        this.user = user;  
    }  
    public Iterable allPendingChocos() {  
        Predicate isPending = Having.feature(ChocoPackage.Literals.CHOCO__STATE, Equals.to(ChocoStat  
        return adapt(user).descendant().filter(Choco.class)  
                                   .filter(isPending);  
    }  
}
```

- Feedback

# emfjson

EObjects to Json, Json to EObjects



 <https://github.com/ghillairet/emfjson>

 <http://ghillairet.github.com/p2/emfjson/releases/0.5.0p>>

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# A generic JSON API

JAVA

```
public void get(Uri resourcePath, OutputStream writer) throws IOException {
    Resource resource = this.dataAccess.get(resourcePath);
    JsResourceImpl jsRes = new JsResourceImpl(resourcePath); // put content from original resource to the json one.
    jsRes.getContents().addAll(resource.getContents());
    Map options = new HashMap();
    options.put(EMFJs.OPTION_INDENT_OUTPUT, true);
    options.put(EMFJs.OPTION_SERIALIZE_TYPE, false);
    jsRes.save(writer, options);
}

public void put(Uri resourcePath, InputStream in) throws IOException {
    Map options = new HashMap();
    options.put(EMFJs.OPTION_ROOT_ELEMENT, ChocoPackage.eINSTANCE.getBoard());
    JsResourceImpl jsRes = new JsResourceImpl(resourcePath);
    jsRes.load(options);
    this.dataAccess.put(resourcePath, jsRes, 0);

    /*
     * You could retrieve the instance with :
     */
    Board root = (Board) jsRes.getContents().get(0);
}
```

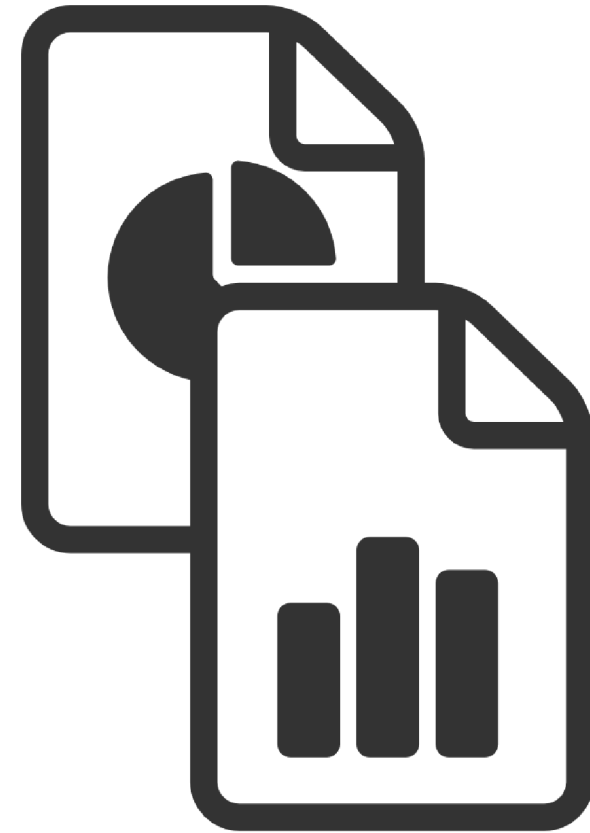
- Feedback

#EclipseCon

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# Gendoc2

Generate (\*)Office docs from models

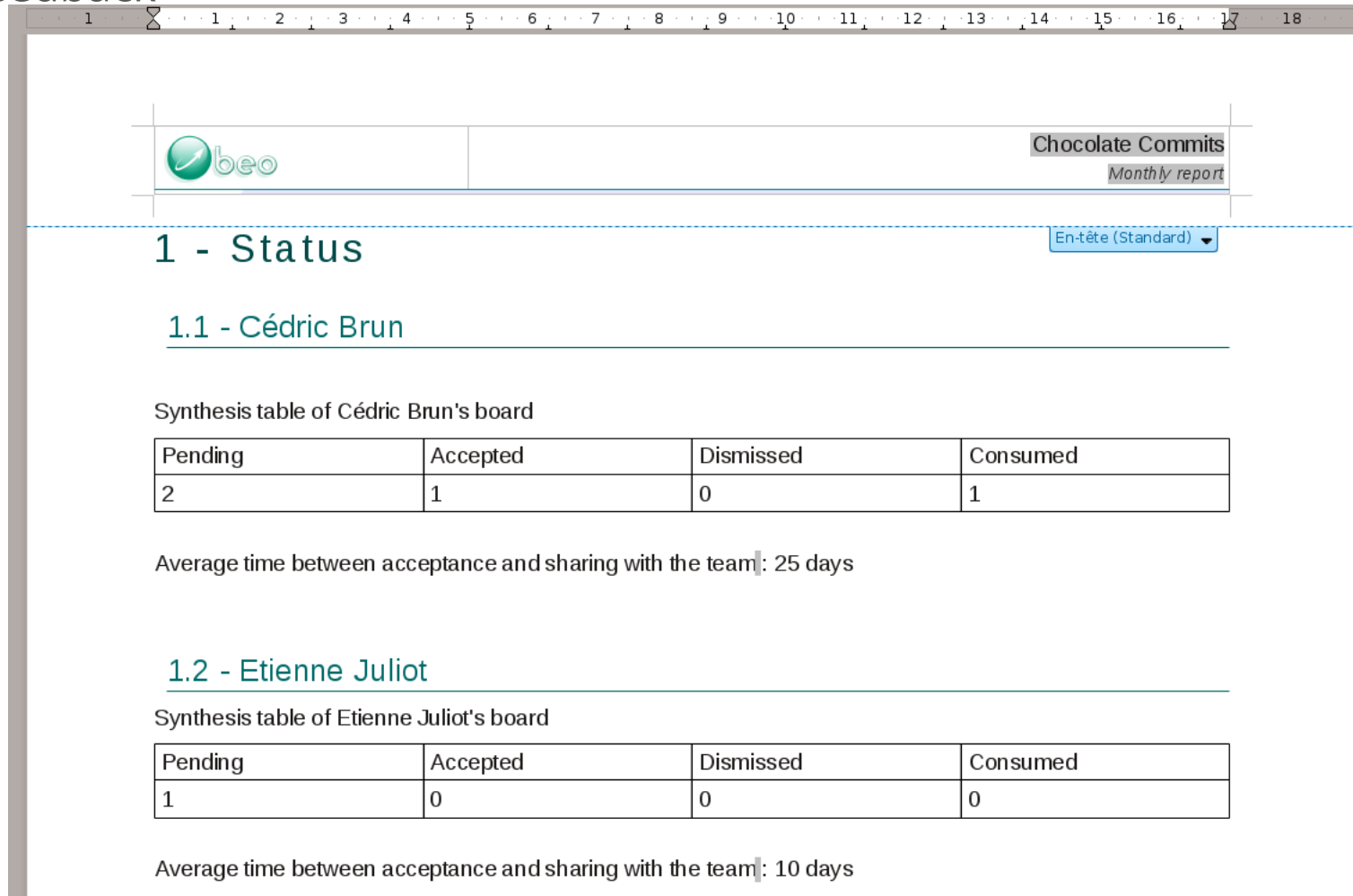


 [http://www.topcased.org/index.php?id\\_projet\\_pere=102](http://www.topcased.org/index.php?id_projet_pere=102)

 <http://topcased-gendoc.gforge.enseeiht.fr/releases/1.6.0/>

# Monthly Report

- Feedback



The screenshot shows a presentation slide with a header bar containing the 'beo' logo and the text 'Chocolate Commits Monthly report'. The slide is titled '1 - Status' and has a dropdown menu set to 'En-tête (Standard)'. It contains two sections: '1.1 - Cédric Brun' and '1.2 - Etienne Juliot'. Each section includes a 'Synthesis table of [Name]'s board' with a table showing 'Pending', 'Accepted', 'Dismissed', and 'Consumed' counts. For Cedric Brun, the counts are Pending: 2, Accepted: 1, Dismissed: 0, Consumed: 1. For Etienne Juliot, the counts are Pending: 1, Accepted: 0, Dismissed: 0, Consumed: 0. Below each table, the 'Average time between acceptance and sharing with the team' is given as 25 days for Cedric and 10 days for Etienne.

## 1 - Status

### 1.1 - Cédric Brun

Synthesis table of Cédric Brun's board

Pending	Accepted	Dismissed	Consumed
2	1	0	1

Average time between acceptance and sharing with the team: 25 days

### 1.2 - Etienne Juliot

Synthesis table of Etienne Juliot's board

Pending	Accepted	Dismissed	Consumed
1	0	0	0

Average time between acceptance and sharing with the team: 10 days

# mongoEMF

MongoDB and EMF



 <https://github.com/BryanHunt/mongo-emf>

 <http://bryanhunt.github.com/mongo-emf/>

#EclipseCon

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# Database backend

JAVA

```
User user = ChocoFactory.eINSTANCE.createUser();
user.setName("Etienne Juliot");
user.setEmail("etienne.juliot@obeo.fr");
```

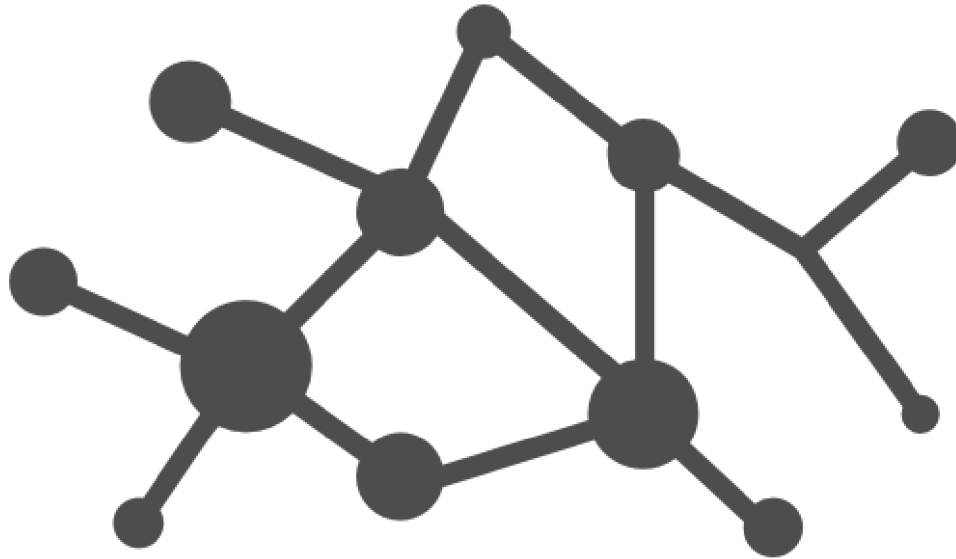
```
Resource resource = resourceSet.createResource(URI.createURI("mongodb://localhost/db/users/"));
resource.getContents().add(user);
try
{
    user.eResource().save(null);
}
catch(IOException e)
{
    e.printStackTrace();
}
```

```
Resource resource = resourceSet.getResource(URI.createURI("mongodb://localhost/app/users/4d6dc268t .472c"));
User etienne = (User) resource.getContents().get(0);
```


JAVA

- Feedback

# blueprints-emf



 <https://github.com/ghillairet/blueprints-emf>

 `mvn clean package`

# Database backend

JAVA

```
EPackage.Registry.INSTANCE.put(ChocoPackage.eNS_URI, ChocoPackage.eINSTANCE);
ResourceSet resourceSet = new ResourceSetImpl();
Resource.Factory.Registry.INSTANCE.getProtocolToFactoryMap().put("graph",
                                                                    new XMIResourceFactoryImpl());

Neo4jGraph graph = new Neo4jGraph("data/neo4j/chocos");
GraphURIHandler.Registry.INSTANCE.put("graph://data/neo4j/chocos/", graph);

EList uriHandlers = resourceSet.getURIConverter().getURIHandlers();
uriHandlers.add(0, new GraphURIHandlerImpl());

Board board = ChocoFactory.eInstance.createBoard();
User user = ChocoFactory.eINSTANCE.createUser();
user.setName("Etienne Juliot");
board.getUsers().add(user);

Resource resource = resourceSet.createResource(URI.createURI("graph://data/neo4j/chocos/"));
resource.getContents().add(board);
resource.save(null);
```

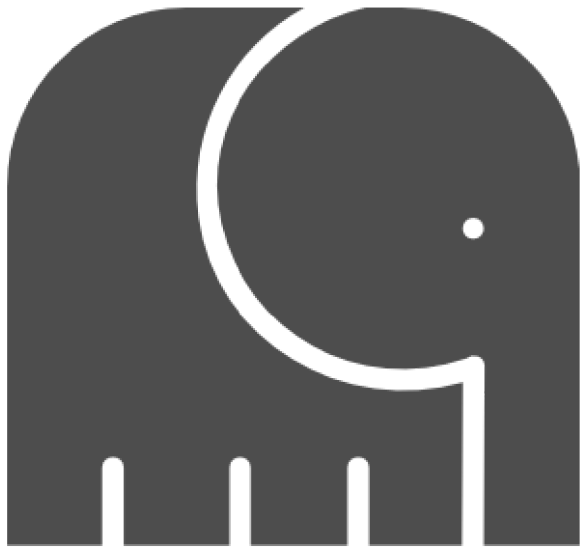
- Feedback

#EclipseCon

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# EMF Specimen

Grow your models



 <https://github.com/Obeo/emf.specimen>

 mvn clean install

#EclipseCon

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## JAVA

```
// ChocoClass
public class ChocoSpecimenConfiguration implements ISpecimenConfiguration {

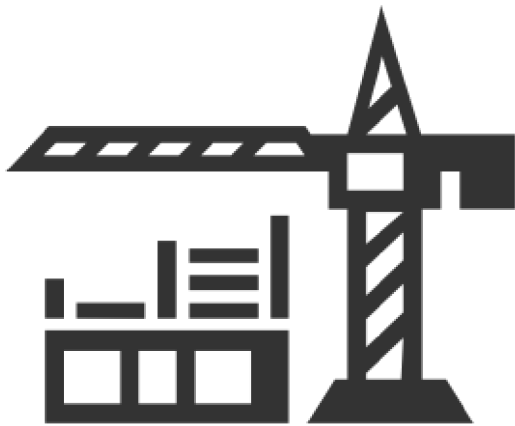
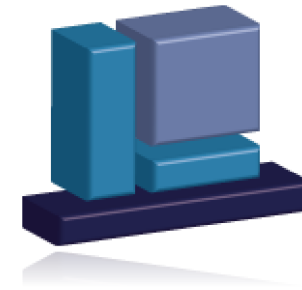
    public IntegerDistribution getDepthDistributionFor(EClass eClass) {
        if (eClass == ChocoPackage.eINSTANCE.getChoco()) {
            return new BinomialDistribution(10, 0.5);
        } else if (eClass == ChocoPackage.eINSTANCE.getBuildFail()) {
            return new BinomialDistribution(100, 0.8);
        } else if (eClass == ChocoPackage.eINSTANCE.getUp()) {
            return new BinomialDistribution(5, 0.8);
        } else if (eClass == ChocoPackage.eINSTANCE.getDown()) {
            return new BinomialDistribution(2, 0.8);
        } else if (eClass == ChocoPackage.eINSTANCE.getChoco()) {
            return new BinomialDistribution(30, 0.3);
        }
        return new BinomialDistribution(100, 0.5);
    }

    // [...]
    SpecimenGenerator generator = new SpecimenGenerator(
        new ChocoSpecimenConfiguration());
    List result = generator.generate(new ResourceSetImpl());
}
```

- Feedback

# Client Platform

RCP application framework



 <http://www.eclipse.org/emfclient/>

 <http://download.eclipse.org/emf-store/releases/latest>

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# Rich Editor

The screenshot displays the 'Rich Editor' interface for a task card. The card is titled 'Choco I know from reliable sou[...]' and is currently in a 'pending' state. The 'Name' field contains the text 'I know from reliable sources that Etienne missed the deadline'. The 'Expiration' is set for '10/17/2012' at '9:03 PM'. The 'Culprit' is listed as 'User Etienne Juliot'. The 'Reason' is '? Other Missed the EclipseCon ea[...]'. The card has two 'Up Votes' and two 'Down Votes'. The interface includes a 'Standard View' tab and a 'Navigator' pane on the left showing a tree structure of the project.

Choco I know from reliable sou... x

Choco I know from reliable sou[...] [Choco]

Name I know from reliable sources that Etienne missed the deadline

Expiration 10/17/2012 9:03 PM

Culprit User Etienne Juliot

Up Votes

Down Votes

State pending

Reason ? Other Missed the EclipseCon ea[...]

Standard View

Navigator x Properties

- test(Not shared)
  - Board
    - User Cédric Brun
      - Up
      - Choco I know from reliable sources that Etienne missed the deadline
      - User Etienne Juliot
      - User Mikaël Barbero
      - User Alex Lagarde

- #EclipseCon Building a Tool based on EMF in 20 minutes / Thursday 2pm

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# Texo

## Enterprise Application Stack for EMF



<http://wiki.eclipse.org/Texo>

<http://download.eclipse.org/modeling/emft/txo/updates/interim>

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# JPA + DAO

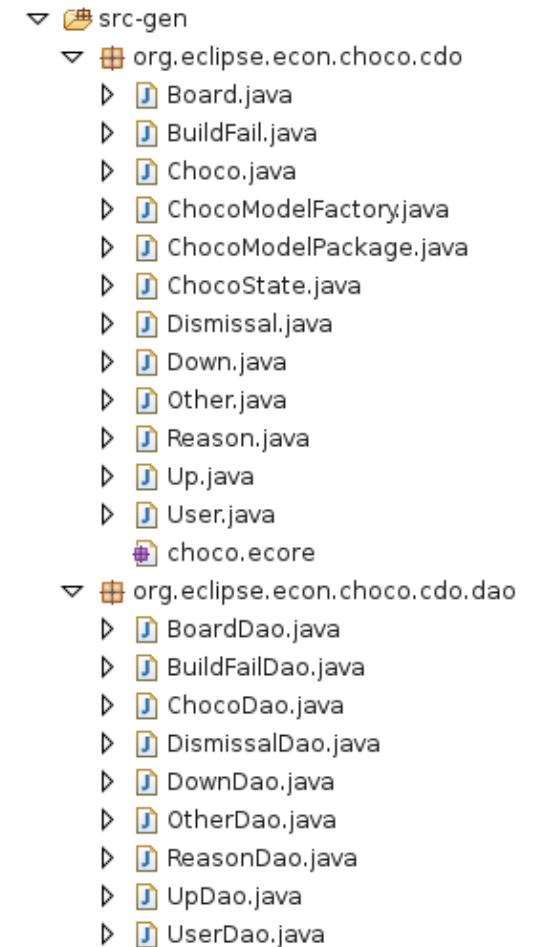
```
/**
 * A representation of the model object 'Choco'.
 * @generated
 */
@Entity(name = "choco_Choco")
public class Choco {

    @Basic()
    private String name = null;

    @Basic()
    @Temporal(TemporalType.DATE)
    private Date expiration = null;

    @ManyToOne(cascade = { CascadeType.MERGE, CascadeType.PERSIST,
        CascadeType.REFRESH }, optional = false)
    @JoinColumn({ @JoinColumn() })
    private User culprit = null;
```

- Taking EMF to the Mobile Web / Theater at 4.30pm



# Sonar Regex File Filter

Exclude generated code from your analysis



 <https://github.com/Obeo/fr.obeo.sonar.plugin.regexfilefilter>

 mvn clean package

#EclipseCon

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# Sonar

## Settings

### Category

- [Cobertura](#)
- [Code Coverage](#)
- [Database Cleaner](#)
- [Differential Views](#)
- [Duplications](#)
- [Findbugs](#)
- [General](#)
- [JaCoCo](#)
- [Java](#)
- [JIRA](#)
- [Localization](#)
- [Regex File Filter](#)
- [SCM Activity](#)
- [Security](#)
- [Surefire](#)

### Regex File Filter

#### File Exclusion Filter

sonar.filefilter.filter

Source files that contains this regex will be excluded from the analysis. A typical example would be "@generated" to exclude all files that contain "@generated".



Save Regex File Filter Settings

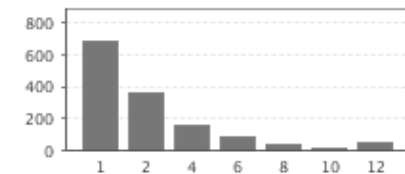
#### Complexity

**3,0** /method

**19,7** /class ▲

**23,2** /file ▲

Total: 4 192 ▲



☒ Methods ☐ Files

#### Code coverage

**41,1%** ▲

39,7% line coverage ▲

43,5% branch coverage ▲

#### Unit test success

**96,8%** ▼

18 failures ▲

0 errors

566 tests ▲

9.8 sec ▼

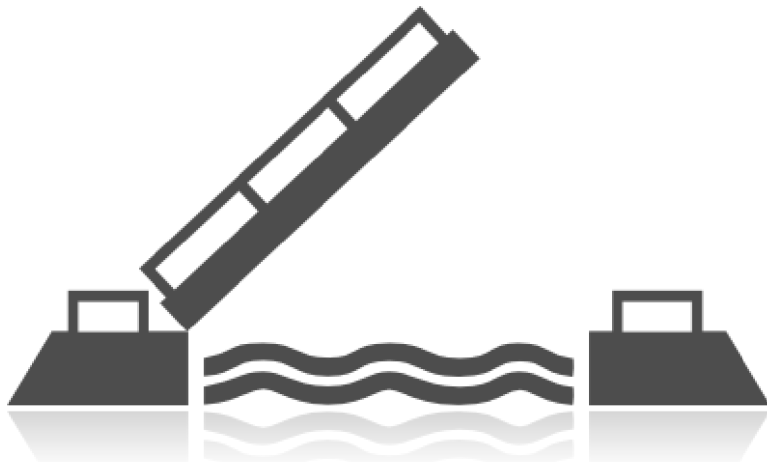
- Feedback

#EclipseCon

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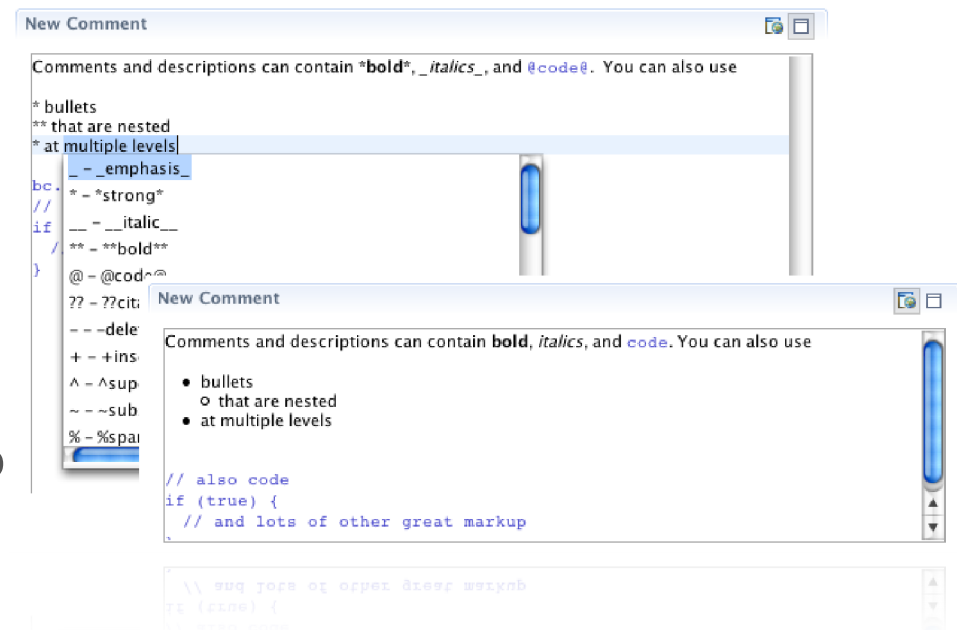
# Wikitext Bridge (Mylyn Intent)

Get a model from a wiki page



<http://www.eclipse.org/intent/>

<http://download.eclipse.org/releases/juno>





# Aggregate Wiki pages in a Single HTML document

JAVA

```
private static void loadWikiPageAsModel() throws IOException {  
  
    Document userGuide = getDocumentFromWiki(URI  
        .createURI("http://wiki.eclipse.org/EMF_Compare/User_Guide"));  
    Document developerGuide = getDocumentFromWiki(URI  
        .createURI("http://wiki.eclipse.org/EMF_Compare/Developer_Guide"));  
    Document faq = getDocumentFromWiki(URI  
        .createURI("http://wiki.eclipse.org/EMF_Compare/FAQ"));  
  
    Section userGuideSec = transformToSection(userGuide, "User Guide");  
    Section developerGuideSec = transformToSection(developerGuide,  
        "Developer Guide");  
    Section faqSec = transformToSection(faq, "Frequently Asked Questions");  
  
    Document aggregated = newDocument("EMF Compare");  
    aggregated.getContent().add(userGuideSec);  
    aggregated.getContent().add(developerGuideSec);  
    aggregated.getContent().add(faqSec);  
  
    Html generator = new Html(aggregated, new File("/tmp/wikiout"),  
        Collections.EMPTY_LIST);  
    generator.doGenerate(new BasicMonitor());  
}
```

- Feedback

#EclipseCon

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# <Thank You!>



g+      [www.google.com/profiles/cedric.brun](http://www.google.com/profiles/cedric.brun)  
twitter   [@bruncedric](https://twitter.com/bruncedric)  
www   [model-driven-blogging.blogspot.fr/](http://model-driven-blogging.blogspot.fr/)  
github   [github.com/cbrun](https://github.com/cbrun)