



Braunhofer Matthias, Moling Omar, Strumpfloher Juri
mbraunhofer@unibz.it, omoling@unibz.it, jstrumpfloher@unibz.it



RSSOwl

Reader for RSS, RDF and Atom Newsfeeds

<http://www.rssowl.org>

Software Process Management

1st Semester 2008/2009

Free University of Bozen-Bolzano



- **Mission**
- **Competitive priorities**
- **Development process**
- **Implementation**
- **Metrics**
- **Lessons learned**
- **Demonstration**



Addition, modification and deletion of features of an Open Source project with at least 50,000 LOC



- **Written in Java, built on Eclipse RCP**
- **Licensed under the Eclipse Public License**
- **67,514 LOC**
- **Main features:**
 - Collect and display newsfeeds
 - Internal browser
 - Advanced search functionality
 - Label news items
 - Organize newsfeeds in categories
 - ...



- **Added features:**

- Statistics view: shows statistics about newsfeeds
(i.e. popularity, read percentage, last visit date, last update date)
- News item rating

- **Modified feature:**

- Filtering of news items according to their assigned labels

- **Deleted feature:**

- Internal browser



Competitive priorities that were excelled during development:

- Consistent quality
- On-time delivery
- Fast delivery
- Development speed
- Customization flexibility



Agile approach: XP

- Consistent quality ↔ Test-driven development (TDD), planning game, collective-code ownership, pair programming
- On-time delivery ↔ Continuous integration, sustainable pace
- Fast delivery ↔ Short releases
- Development speed ↔ Simple design, refactoring, on-site customer
- Customization flexibility ↔ On-site customer, simple design



Two aspects of testing:

- Acceptance tests
 - Ensure that user stories have been implemented correctly
- JUnit 4.0 tests (~376 unit test runs)
 - TDD cycle:
 - Add a test
 - Run all the tests and see if the new one fails
 - „Hack“ the code to make the test pass
 - Run automated tests and see them succeed
 - Refactor
 - *(run the tests again)*
 - Boundary value analysis: checking the source code at boundary conditions



- **Eclipse RCP-based application**
- **DB4O database for persistent store of the model**
- **Apache HttpClient for connections to the internet**
- **JDOM for transforming XML files into the object model**
- **Apache Lucene to provide search capabilities**



- **org.rssowl.core**

- org.rssowl.core.persist
- org.rssowl.core.internal.persist
- org.rssowl.core.persist.dao
- org.rssowl.core.internal.persist.dao

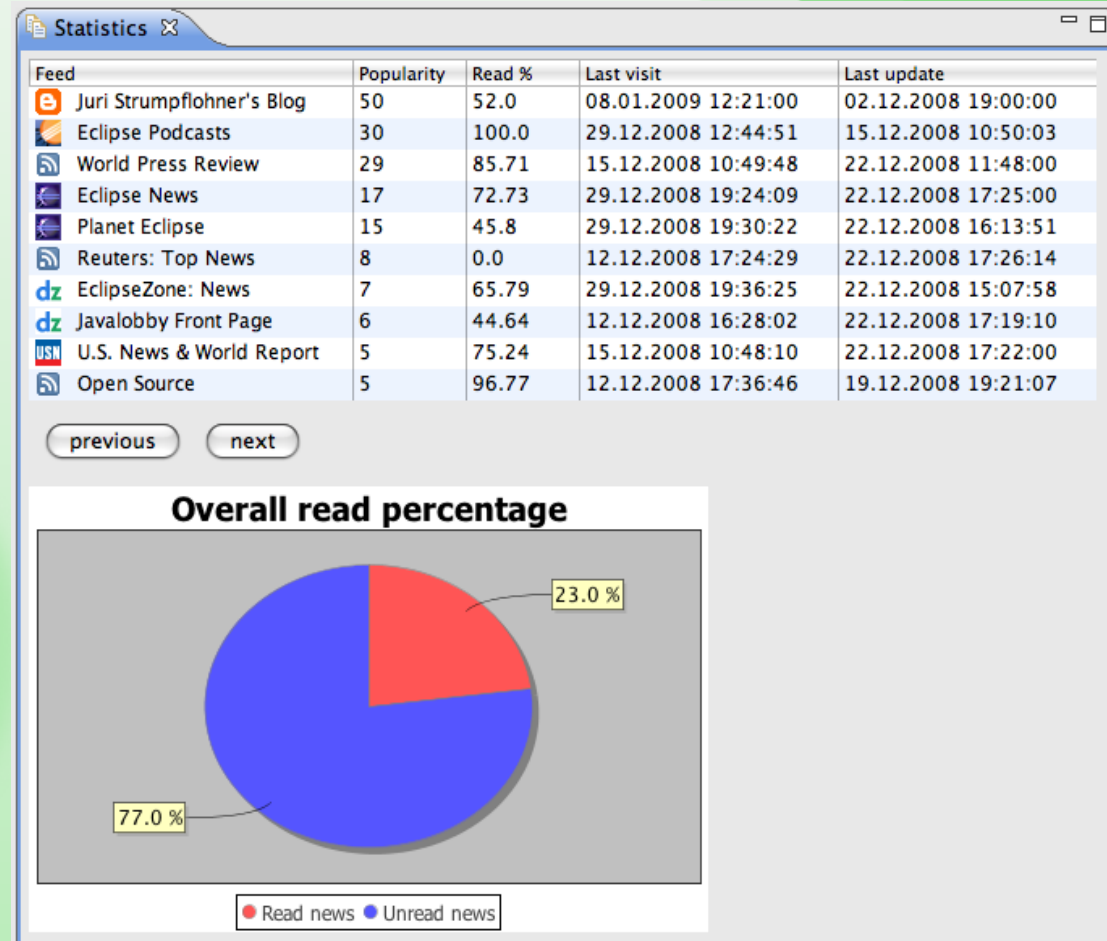
- **org.rssowl.ui**

- org.rssowl.ui.internal
- org.rssowl.ui.internal.actions
- org.rssowl.ui.internal.dialogs
- org.rssowl.ui.internal.editors.feed
- org.rssowl.ui.internal.views.*
 - Explorer, Statistics, Label

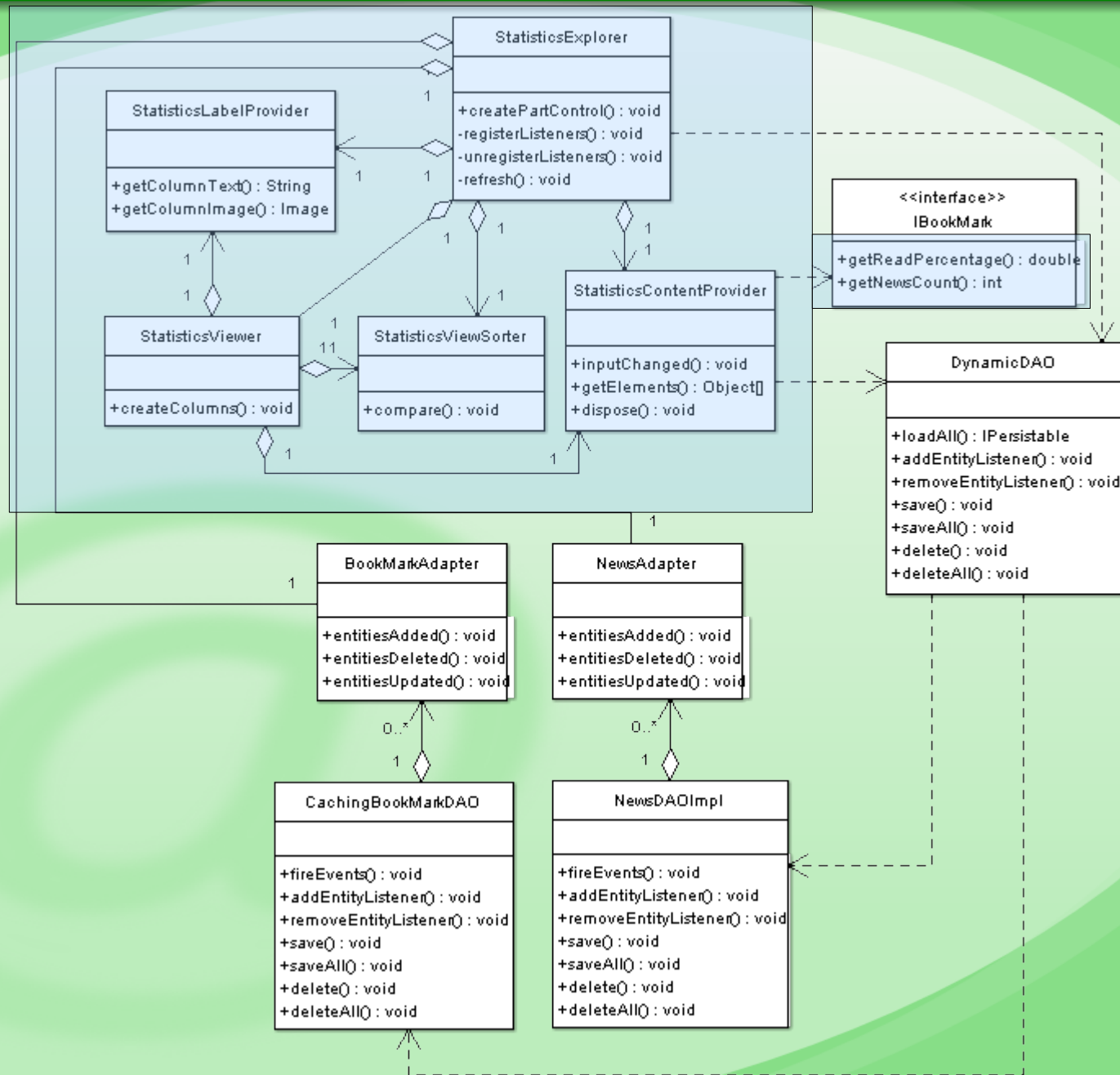


Statistics view

- Definition of a new view extension
- Statistics are calculated using attributes that are stored in BookMark and News objects
- JFreeChart for visualization of the statistics



Class diagram - Statistics view





News item rating

- Rating for each news item is stored inside News objects
- Graphical representation using star-images

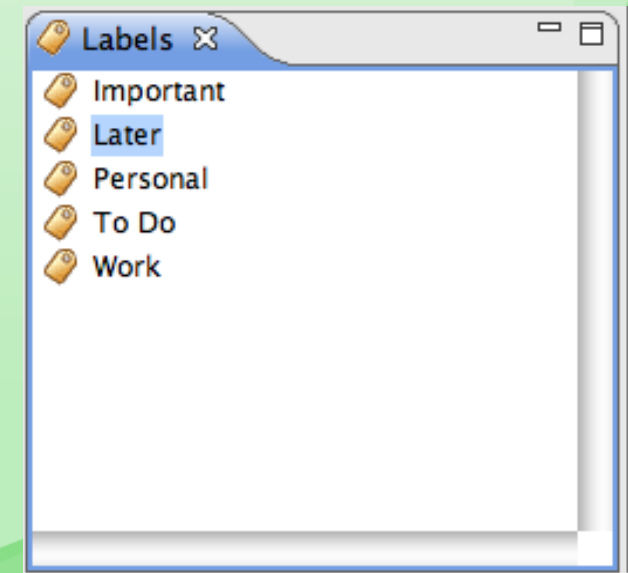
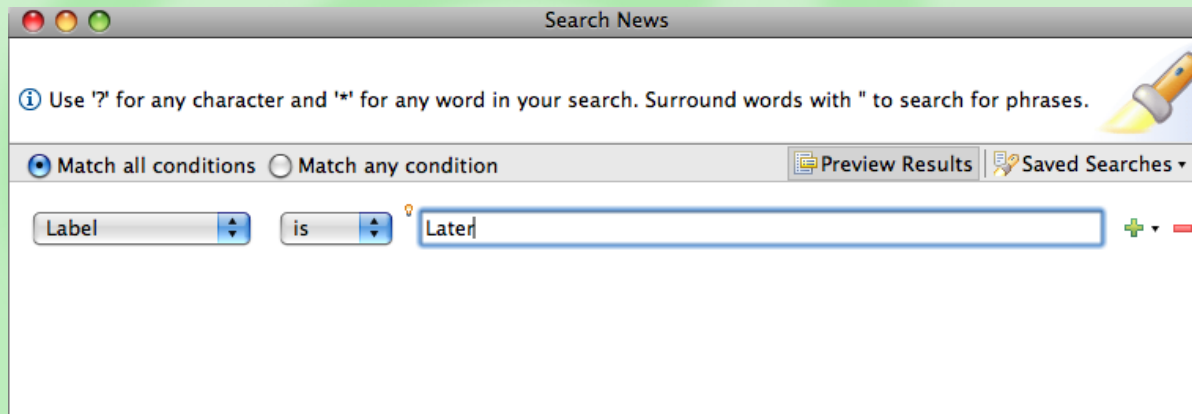
The screenshot shows a web browser window titled "dz Javalobby Front Page" displaying a list of news items. A context menu is open over the second item, "A Look Forward at Spring 3.0", showing options like "Open in Browser", "Move To", "Copy To", "Mark Label", "Rate", "Update", "Delete", "Copy Link", and "Send Link". The "Rate" option is selected, and a sub-menu shows five stars, with the first two filled yellow and the remaining three empty blue.

Title	Date	Author	Category	Rating
Groovy 1.6 Release Candidate is available	22.12.08 17:19	aalmiray	groovy ann	★★★★★
A Look Forward at Spring 3.0	22.12.08 15:24	nbharti78	Java	★★★★★
January 23: L	22.12.08 14:24	geertjan		★★★☆☆
The Top 5 Bo	22.12.08 14:04	meera	books	☆☆☆☆☆
TeamDev an	22.12.08 13:58	ak42382	comfyj	☆☆☆☆☆
Using XML i	22.12.08 04:00	jill		☆☆☆☆☆
A Rich Web	21.12.08 11:56	stoicflame	REST	☆☆☆☆☆
LongJump D	21.12.08 11:05	longjump	cloud com	☆☆☆☆☆
Atlassian Fis	21.12.08 10:49	bn68898		☆☆☆☆☆
Aspose.Pdf:	21.12.08 10:26	aspose_seo	API	☆☆☆☆☆
Syncro SVN	21.12.08 10:24	ss58719		☆☆☆☆☆
JtWizard 1.0	21.12.08 10:20	wwwfswcom	Design Pat	☆☆☆☆☆
zSaver: Ope	20.12.08 20:07	XoJImC	Design Tec	☆☆☆☆☆
Getting Rid	20.12.08 19:54	aminal	gwt	☆☆☆☆☆

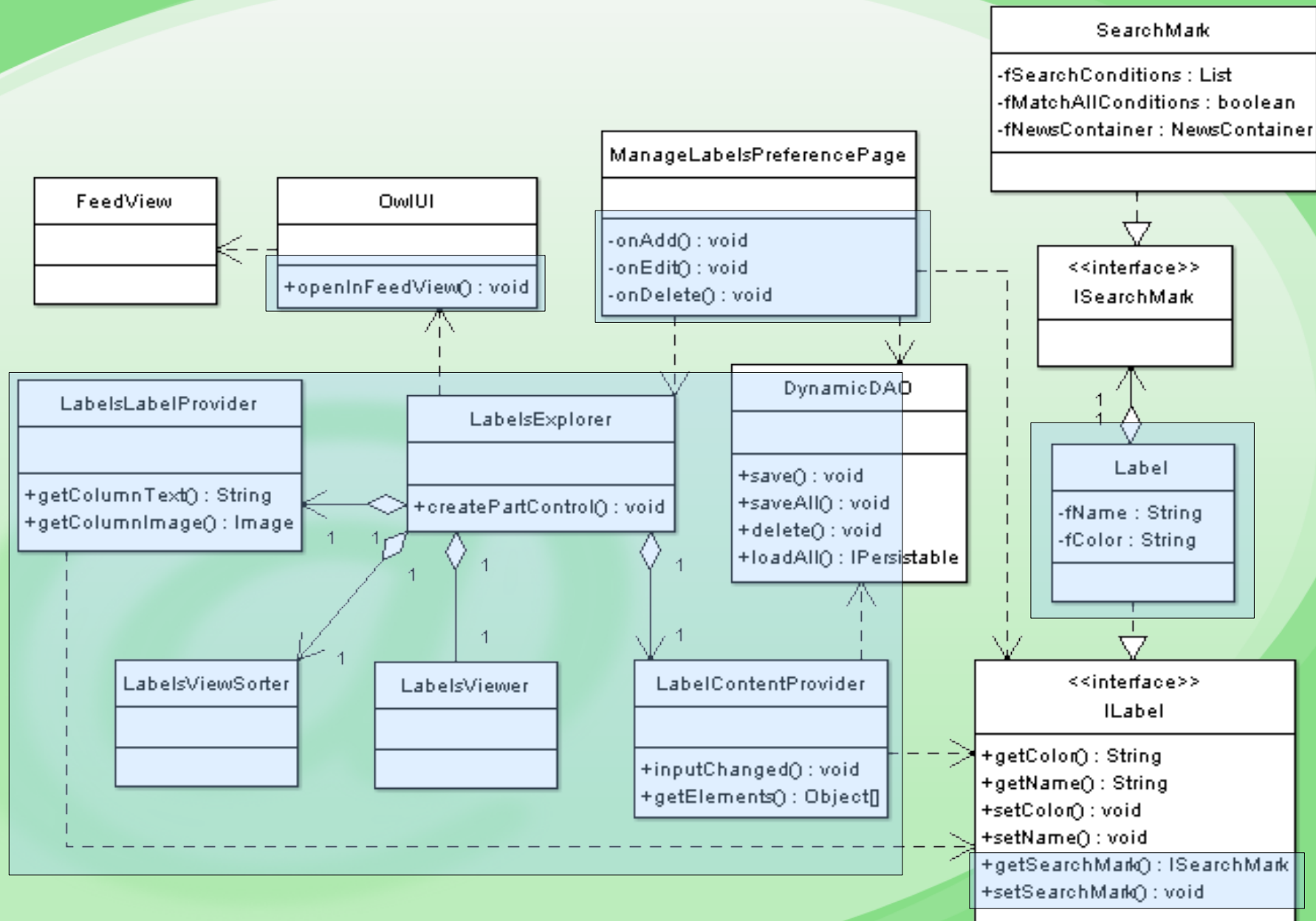


Filtering of news items according to their labels

- Definition of a new view extension
- By clicking on a label, all news items marked with the selected label are being displayed
- Originally, labelled news items could only be filtered by performing a search



Class diagram - Labels view / labels filtering



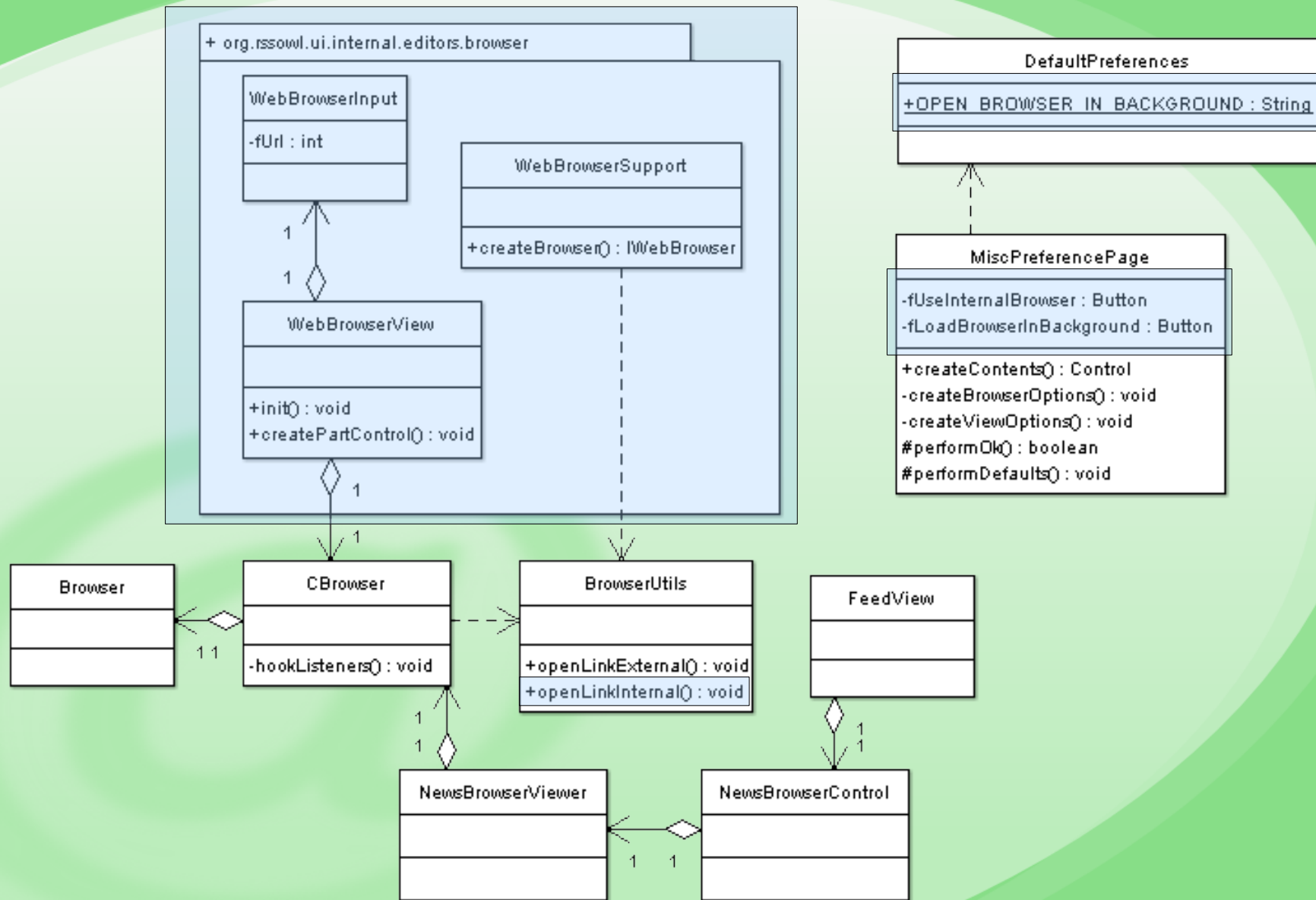


Removal of internal browser

- WebBrowserView editor and all its references have been deleted
- RSSOwl preferences and menus have been adjusted
- Associated links for a news item are opened in the external browser



Class diagram - Removal of the internal browser





Metric	Before modifications	After modifications	Difference
LOC	67,514	69,204	1,690
# of packages	47	51	4
# of classes	467	493	26
# of methods	3,859	3,978	119
Average CC	2.71	2.71	-
# of test methods	351	376	25
Code coverage (covered instructions)	Total: 58 % org.rssowl.ui: 11.6 % org.rssowl.core: 70.7 %	Total: 59 % org.rssowl.ui: 12.5 % org.rssowl.core: 71 %	1 % 0.9 % 0.3 %



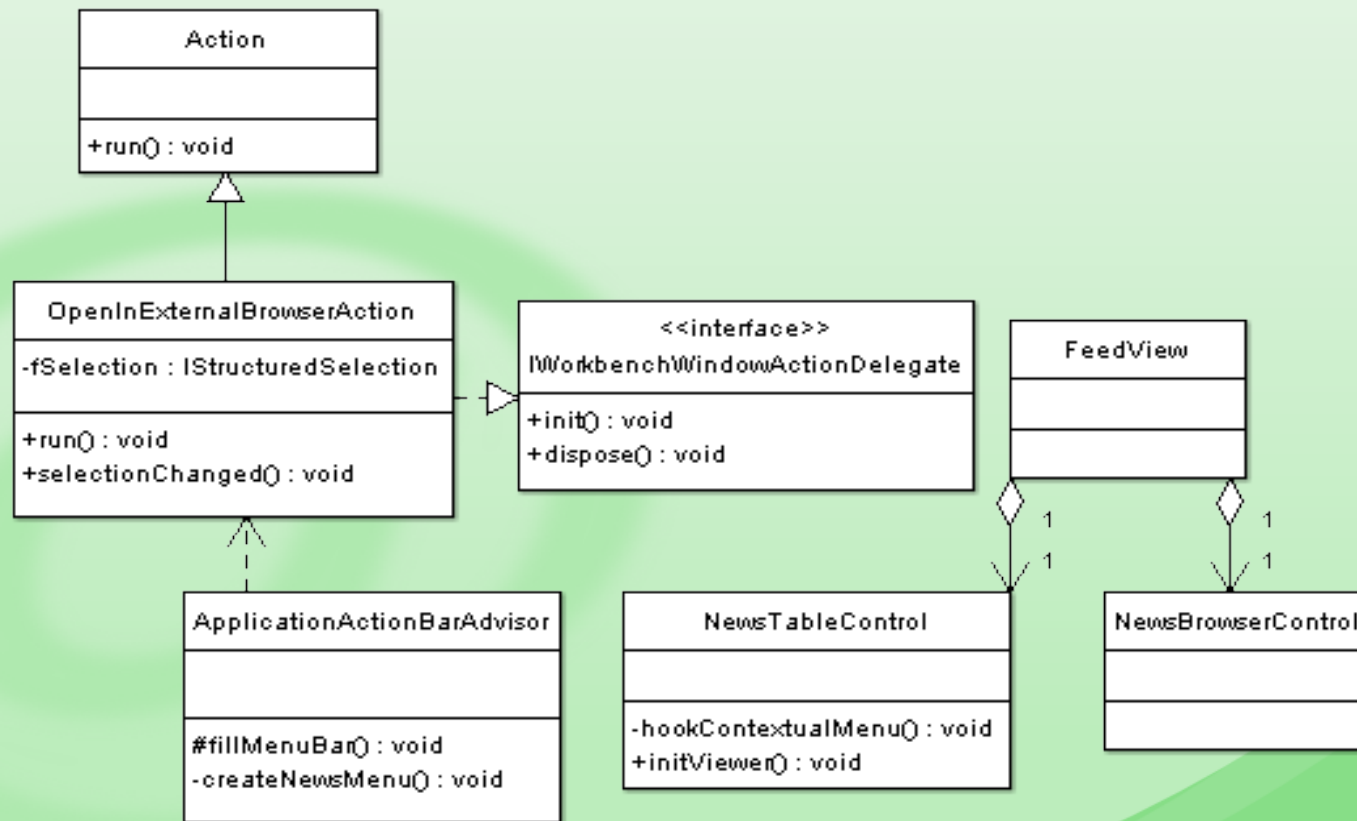
- **RCP development**
 - better understanding of the underlying concepts
- **Programming**
 - interesting application architecture
 - application layering
- **Applying XP practices**
 - Pair programming
 - TDD
- **Agile project management**
 - User stories
 - Weekly iterations



Demonstration...

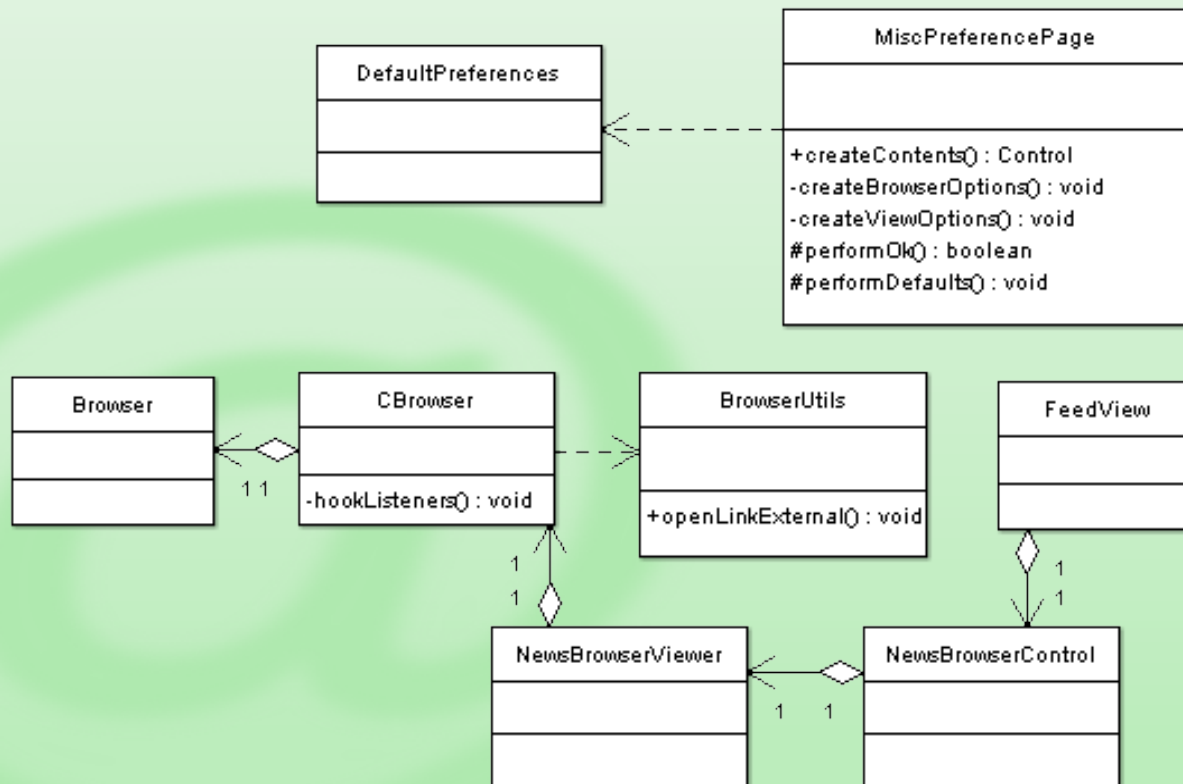


Remove "internal browser" menu entries



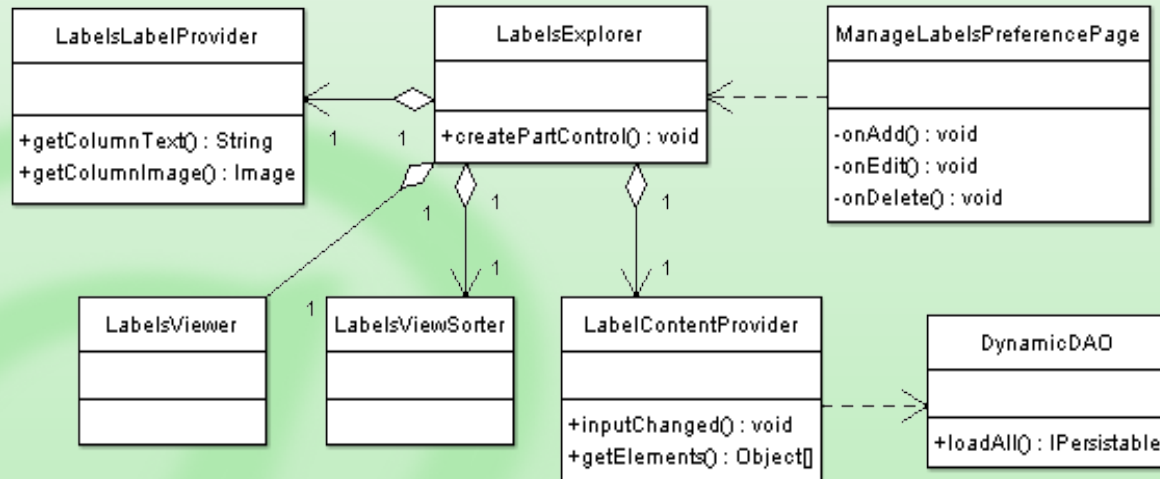


Adjust browsing preferences



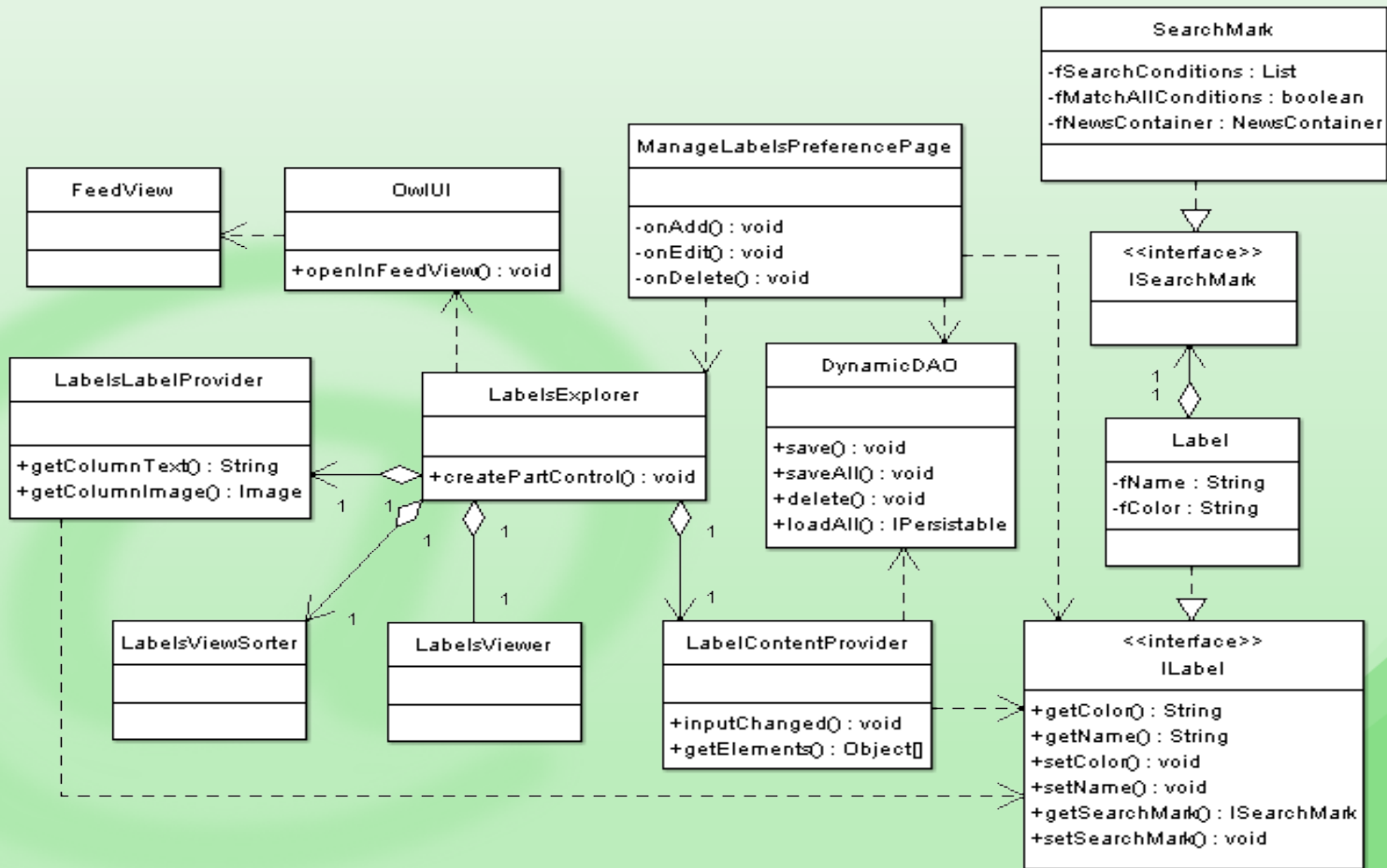


Create label view



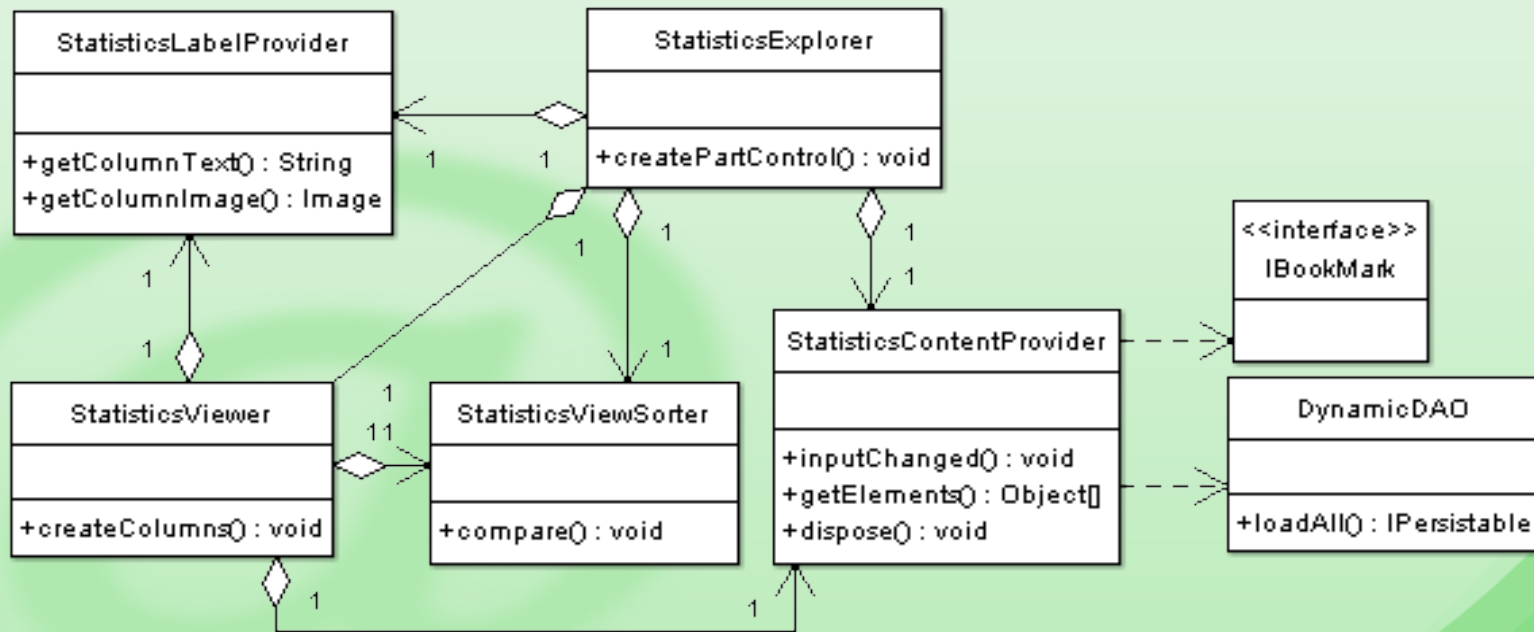


Labels filtering



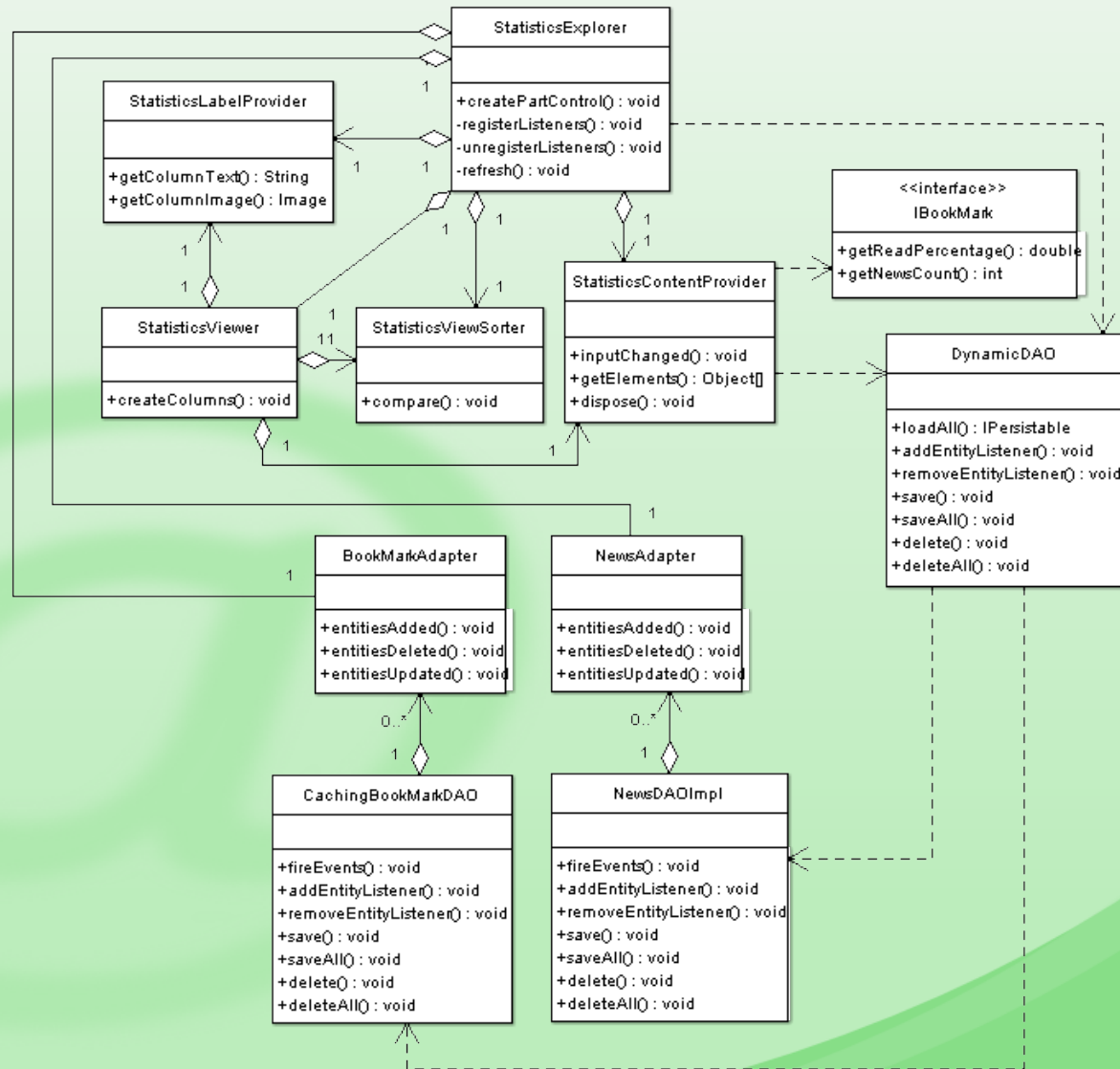


Create Statistics View



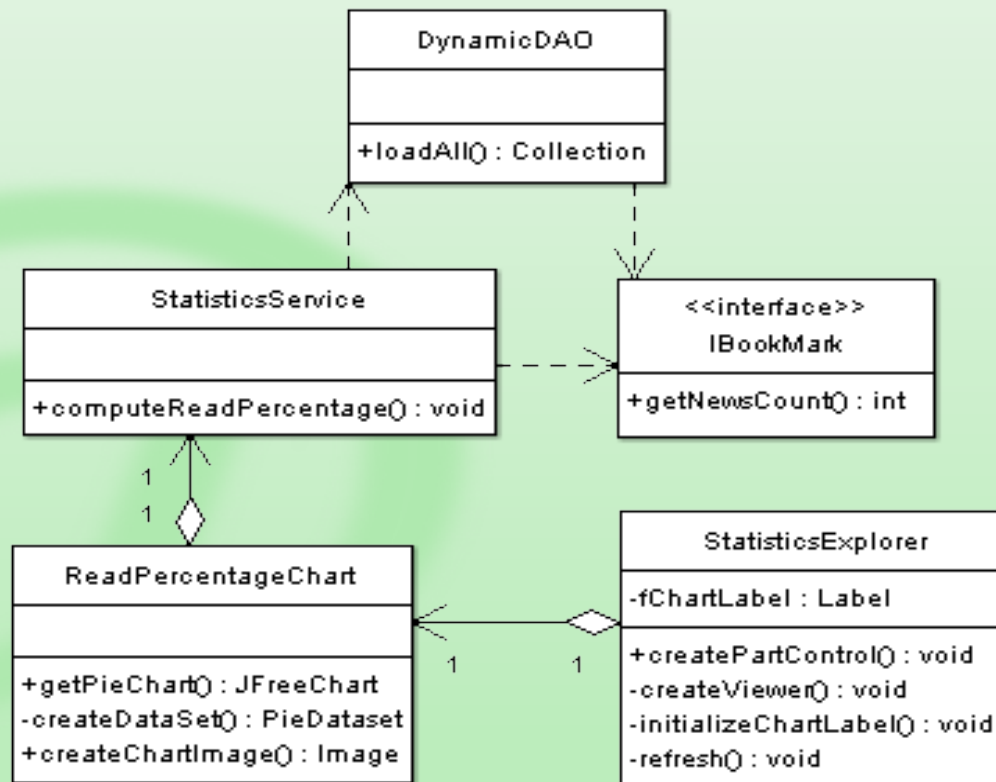


Add read statistics, Statistics-view refresh





Read statistics pie-chart

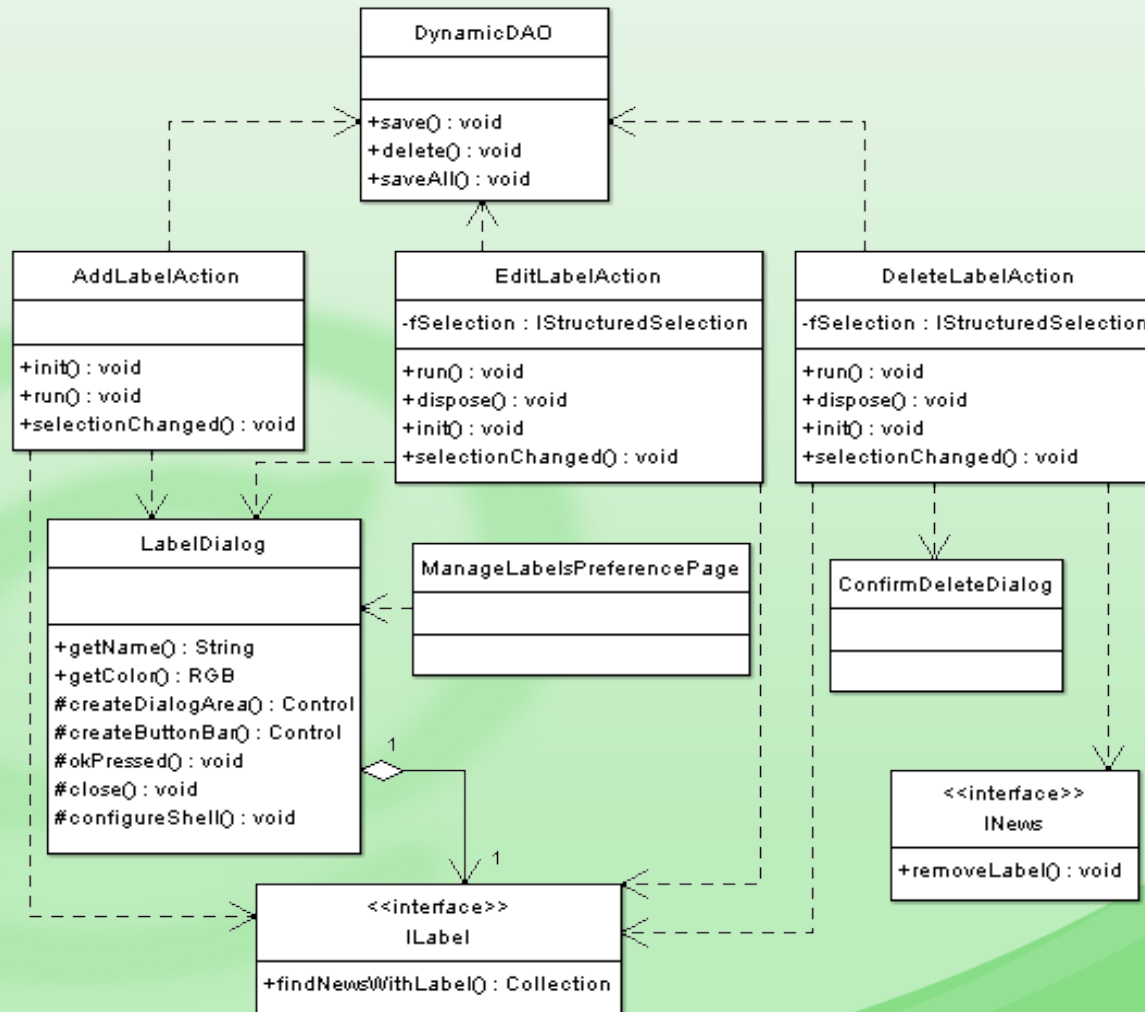




Add feed update statistics, Statistics paging



Add context-menu in Labels view





Show Count of Sticky News for Labels

