

OpenMRS Code Quality Using SONAR



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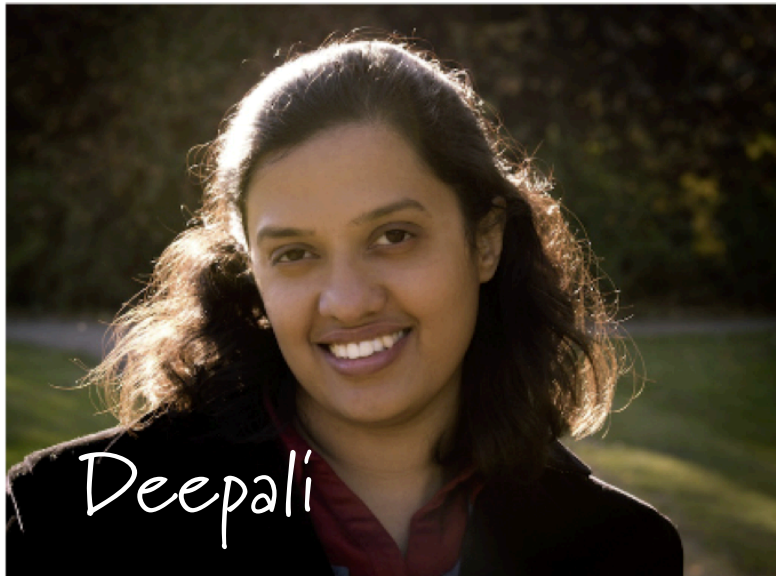


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Gurpreet



Deepali



Orzge



Free and Open Source tool which measures code quality (<http://www.sonarqube.org/>):

- Test Coverage
- Code Complexity
- Potential Bugs & Coding Rules
- Architecture & Design
- Duplication
- Code Comments



sonarqube® 

<https://ci-stg.openmrs.org/sonar/>

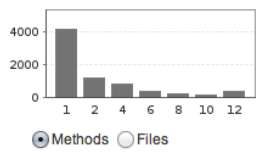
Unit Tests Coverage
33.0%
 34.1% line coverage
 30.3% branch coverage

Unit test success
99.8%
 4 failures
 0 errors
 2,609 tests
 31 skipped
 7:18 min

Issues
19,923
Rules compliance
65.7%

	Blocker	0	
	Critical	88	
	Major	10,532	<div style="width: 50%;"></div>
	Minor	7,026	<div style="width: 35%;"></div>
	Info	2,277	<div style="width: 12%;"></div>

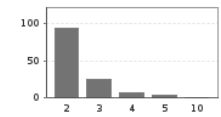
Complexity
2.7 /method
20.9 /class
22.2 /file
 Total: 24,974



Package tangle index
14.5%
 > 210 cycles

Dependencies to cut
 70 between packages
 205 between files

LCOM4
1.2 /class
 11.5% files having LCOM4>1



Duplications
3.2%
 6,810 lines
 262 blocks
 111 files

Sample Summary

Documentation
76.0% docu. API
 8,600 public API
 2,065 undocu. API

Comments
22.5%
 33,152 lines

Lines of code
113,976
 214,401 lines
 51,480 statements
 1,124 files

Classes
1,194
 124 packages
 9,294 methods
 2,618 accessors

Oct 06 2013	Version	1.10.0-SNAPSHOT
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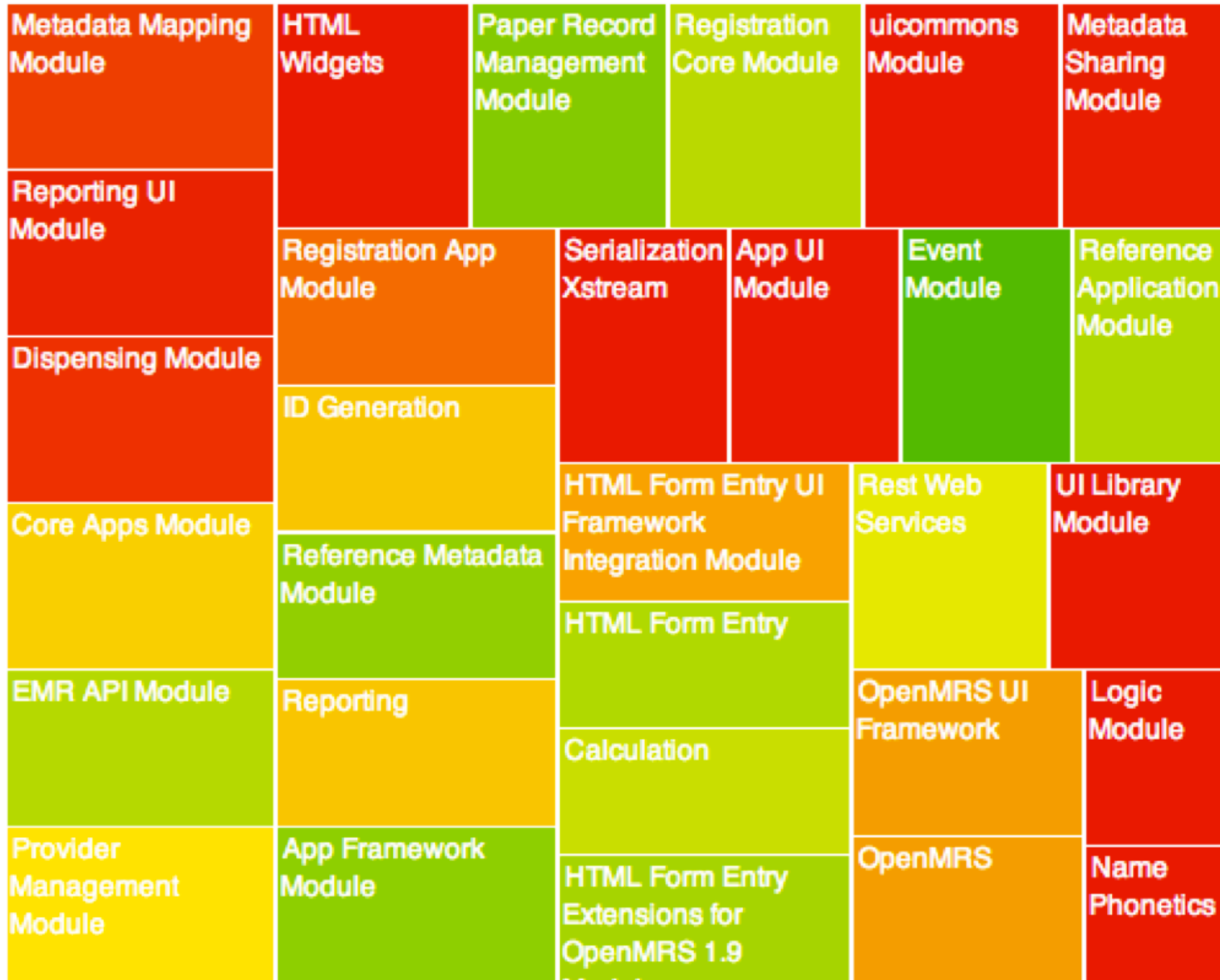
Master project for the modules of OpenMRS

Key: [org.openmrs:openmrs](#)
 Language: [Java](#)
 Profile: [Sonar_way \(version 2\)](#)
 Alerts: [RSS Feed](#)
 Links: [Developer connection](#)
[Home](#)
[Issues](#)
[Sources](#)

Projects

Size: Rules compliance Color: Coverage 0.0%  100.0%

Test Coverage



Module has 0% coverage.

Projects [Shared by Sonar]

[Change Columns](#) [Display as: List Treemap](#)

A	Name	Version	LOCs	Coverage [^]	RCI	Cmpx/method	Dup. lines(%)	Last Analysis
	Serialization Xstream	0.2.8-SNAPSHOT	1,330	0.0%	82.3%	2.2	6.6%	Oct 01 2013
	uicommons Module	1.0-SNAPSHOT	65	0.0%	87.7%	1.5	0.0%	Oct 01 2013
	UI Library Module	2.0.4-SNAPSHOT	120	0.0%	76.7%	2.5	0.0%	Oct 01 2013
	App UI Module	1.0-SNAPSHOT	225	0.0%	81.8%	1.9	0.0%	01:00
	Logic Module	0.5.3-SNAPSHOT	11,073	0.1%	53.4%	4.2	4.3%	Oct 01 2013
	Name Phonetics	1.5-SNAPSHOT	961	0.3%	42.0%	2.3	3.8%	Oct 01 2013
	HTML Widgets	1.6.6-SNAPSHOT	2,885	0.6%	88.7%	3.4	2.5%	10:01
	Metadata Sharing Module	1.1.9-SNAPSHOT	10,400	2.4%	87.5%	2.4	0.6%	Oct 01 2013
	Reporting UI Module	1.0-SNAPSHOT	280	4.5%	93.9%	3.5	0.0%	Oct 01 2013
	Dispensing Module	1.0-SNAPSHOT	230 [↕]	8.2% [↘]	91.7% [↗]	1.5	0.0%	04:01
	Metadata Mapping Module	1.0.2-SNAPSHOT	707	12.0%	95.2%	2.0	0.0%	Oct 01 2013
	Registration App Module	1.0-SNAPSHOT	705 [↕]	22.3%	87.2% [↘]	3.1	4.8%	Oct 01 2013
	OpenMRS	1.10.0-SNAPSHOT	113,949 [↕]	32.9%	65.7%	2.7	3.2%	Oct 01 2013
	OpenMRS UI Framework	3.2-SNAPSHOT	5,678	33.3%	76.3%	2.7	3.7%	Oct 01 2013
	HTML Form Entry UI Framework Integration Module	1.0-SNAPSHOT	647	34.1%	79.6%	5.8	0.0%	09:03
	ID Generation	2.7-SNAPSHOT	2,199	41.0%	86.4%	1.8	2.6%	11:01
	Reporting	0.8.1-SNAPSHOT	31,118 [↕]	41.6%	85.3%	2.5	1.5%	Oct 01 2013
	Core Apps Module	1.0-SNAPSHOT	1,857 [↕]	43.7%	91.4%	3.6	0.0%	03:03
	Provider Management Module	2.2-SNAPSHOT	3,941	47.5%	89.0%	2.6	0.5%	Oct 01 2013
	Rest Web Services	2.2-SNAPSHOT	10,926 [↕]	54.7%	77.2%	2.4	8.5%	Oct 01 2013
	Calculation	1.1-SNAPSHOT	1,440	61.0%	77.4%	1.9	1.8%	02:01

HTML Form * modules has CC/method higher than 5.

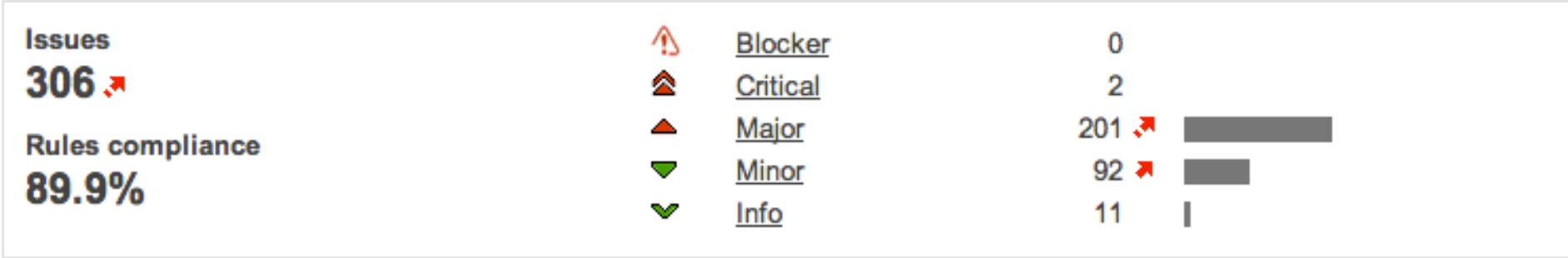
Complexity

Projects [Shared by Sonar]

Change Columns Display as: List Treemap

A Name	Version	LOCs	Coverage	RCI	Cmpx/method	Dup. lines(%)	Last Analysis
HTML Form Entry Extensions for OpenMRS 1.9 Module	1.5-SNAPSHOT	489	67.5%	77.3%	6.1	0.0%	08:10
HTML Form Entry UI Framework Integration Module	1.0-SNAPSHOT	647	34.1%	79.6%	5.8	0.0%	09:03
HTML Form Entry	2.3-SNAPSHOT	14,451	65.5%	77.4%	5.4	2.4%	07:11
Logic Module	0.5.3-SNAPSHOT	11,073	0.1%	53.4%	4.2	4.3%	Oct 01 2013
Core Apps Module	1.0-SNAPSHOT	1,857	43.7%	91.4%	3.6	0.0%	03:03
Reporting UI Module	1.0-SNAPSHOT	280	4.5%	93.9%	3.5	0.0%	Oct 01 2013
HTML Widgets	1.6.6-SNAPSHOT	2,885	0.6%	88.7%	3.4	2.5%	10:01
Registration App Module	1.0-SNAPSHOT	705	22.3%	87.2%	3.1	4.8%	Oct 01 2013
Reference Application Module	1.0-SNAPSHOT	340	66.1%	80.6%	3.0	0.0%	Oct 01 2013
OpenMRS	1.10.0-SNAPSHOT	113,949	32.9%	65.7%	2.7	3.2%	Oct 01 2013
OpenMRS UI Framework	3.2-SNAPSHOT	5,678	33.3%	76.3%	2.7	3.7%	Oct 01 2013
Event Module	2.2-SNAPSHOT	501	85.5%	81.6%	2.7	0.0%	06:03
Provider Management Module	2.2-SNAPSHOT	3,941	47.5%	89.0%	2.6	0.5%	Oct 01 2013
Reporting	0.8.1-SNAPSHOT	31,118	41.6%	85.3%	2.5	1.5%	Oct 01 2013
UI Library Module	2.0.4-SNAPSHOT	120	0.0%	76.7%	2.5	0.0%	Oct 01 2013
EMR API Module	1.0-SNAPSHOT	6,776	64.5%	89.9%	2.5	0.7%	00:08
Registration Core Module	1.0-SNAPSHOT	677	63.8%	88.2%	2.4	0.0%	Sep 30 2013
Metadata Sharing Module	1.1.9-SNAPSHOT	10,400	2.4%	87.5%	2.4	0.6%	Oct 01 2013
Rest Web Services	2.2-SNAPSHOT	10,926	54.7%	77.2%	2.4	8.5%	Oct 01 2013
Name Phonetics	1.5-SNAPSHOT	961	0.3%	42.0%	2.3	3.8%	Oct 01 2013
Paper Record Management Module	1.0-SNAPSHOT	1,499	74.4%	88.6%	2.2	1.1%	Oct 01 2013

OpenMRS 2.0 EMR ---- Rule Failures



Rule

- ▲ Visibility Modifier
- ▲ if/else/for/while/do statements should always use curly braces
- ▲ Avoid too complex method
- ▲ Avoid cycle between java packages
- ▲ Avoid commented-out lines of code
- ▲ Statements should be on separate lines

Rule Failures --- Not doing too well

Projects [Shared by Sonar]

[Change Columns](#) [Display as: List Treemap](#)

A	Name	Version	Major issues	LOCs	Coverage	RCI	Cmpx/method	Dup. lines(%)	Last Analysis
	OpenMRS	1.10.0-SNAPSHOT	10,531	113,949	32.9%	65.7%	2.7	3.2%	Oct 01 2013
	Logic Module	0.5.3-SNAPSHOT	1,554	11,073	0.1%	53.4%	4.2	4.3%	12:01
	Reporting	0.8.1-SNAPSHOT	1,107	31,118	41.6%	85.3%	2.5	1.5%	Oct 01 2013
	HTML Form Entry	2.3-SNAPSHOT	980	14,451	65.5%	77.4%	5.4	2.4%	07:11
	Rest Web Services	2.2-SNAPSHOT	685	10,926	54.7%	77.2%	2.4	8.5%	Oct 01 2013
	OpenMRS UI Framework	3.2-SNAPSHOT	381	5,678	33.3%	76.3%	2.7	3.7%	Oct 01 2013
	Metadata Sharing Module	1.1.9-SNAPSHOT	295	10,400	2.4%	87.5%	2.4	0.6%	Oct 01 2013
	EMR API Module	1.0-SNAPSHOT	195	6,776	64.5%	89.9%	2.5	0.7%	00:08
	Name Phonetics	1.5-SNAPSHOT	160	961	0.3%	42.0%	2.3	3.8%	Oct 01 2013
	Provider Management Module	2.2-SNAPSHOT	92	3,941	47.5%	89.0%	2.6	0.5%	Oct 01 2013
	Calculation	1.1-SNAPSHOT	75	1,440	61.0%	77.4%	1.9	1.8%	02:01
	App Framework Module	2.1-SNAPSHOT	67	1,360	72.9%	84.2%	1.6	0.0%	00:04
	HTML Widgets	1.6.6-SNAPSHOT	66	2,885	0.6%	88.7%	3.4	2.5%	10:01
	Serialization Xstream	0.2.8-SNAPSHOT	64	1,330	0.0%	82.3%	2.2	6.6%	Oct 01 2013
	ID Generation	2.7-SNAPSHOT	53	2,199	41.0%	86.4%	1.8	2.6%	11:01
	Paper Record Management Module	1.0-SNAPSHOT	46	1,499	74.4%	88.6%	2.2	1.1%	Oct 01 2013
	HTML Form Entry UI Framework Integration Module	1.0-SNAPSHOT	43	647	34.1%	79.6%	5.8	0.0%	09:03
	Core Apps Module	1.0-SNAPSHOT	41	1,857	43.7%	91.4%	3.6	0.0%	03:03
	HTML Form Entry Extensions for OpenMRS 1.9 Module	1.5-SNAPSHOT	33	489	67.5%	77.3%	6.1	0.0%	08:10
	Event Module	2.2-SNAPSHOT	27	501	85.5%	81.6%	2.7	0.0%	06:03
	Registration App Module	1.0-SNAPSHOT	25	705	22.3%	87.2%	3.1	4.8%	Oct 01 2013

Rule Failures --- Good ones

Projects [Shared by Sonar]

Change Columns Display as: List Treemap

A	Name	Version	LOCs	Coverage	RCI	Cmpx/method	Dup. lines(%)	Last Analysis
	Metadata Mapping Module	1.0.2-SNAPSHOT	707	12.0%	95.2%	2.0	0.0%	Oct 01 2013
	Reporting UI Module	1.0-SNAPSHOT	280	4.5%	93.9%	3.5	0.0%	Oct 01 2013
	Dispensing Module	1.0-SNAPSHOT	230 ↗	8.2% ↘	91.7% ↗	1.5	0.0%	04:01
	Core Apps Module	1.0-SNAPSHOT	1,857 ↗	43.7%	91.4%	3.6	0.0%	03:03
	EMR API Module	1.0-SNAPSHOT	6,776 ↗	64.5%	89.9%	2.5	0.7%	00:08
	Provider Management Module	2.2-SNAPSHOT	3,941	47.5%	89.0%	2.6	0.5%	Oct 01 2013
	HTML Widgets	1.6.6-SNAPSHOT	2,885	0.6%	88.7%	3.4	2.5%	10:01
	Paper Record Management Module	1.0-SNAPSHOT	1,499	74.4%	88.6%	2.2	1.1%	Oct 01 2013
	Registration Core Module	1.0-SNAPSHOT	677	63.8%	88.2%	2.4	0.0%	Sep 30 2013
	uicommons Module	1.0-SNAPSHOT	65	0.0%	87.7%	1.5	0.0%	Oct 01 2013
	Metadata Sharing Module	1.1.9-SNAPSHOT	10,400	2.4%	87.5%	2.4	0.6%	Oct 01 2013
	Registration App Module	1.0-SNAPSHOT	705 ↗	22.3%	87.2% ↘	3.1	4.8%	Oct 01 2013
	Reference Metadata Module	1.0-SNAPSHOT	154 ↗	71.4%	86.4% ↘	1.8	0.0%	Oct 01 2013
	ID Generation	2.7-SNAPSHOT	2,199	41.0%	86.4%	1.8	2.6%	11:01
	Reporting	0.8.1-SNAPSHOT	31,118 ↗	41.6%	85.3%	2.5	1.5%	Oct 01 2013
	App Framework Module	2.1-SNAPSHOT	1,360 ↗	72.9%	84.2% ↗	1.6	0.0%	00:04
	Serialization Xstream	0.2.8-SNAPSHOT	1,330	0.0%	82.3%	2.2	6.6%	Oct 01 2013
	App UI Module	1.0-SNAPSHOT	225	0.0%	81.8%	1.9	0.0%	01:00
	Event Module	2.2-SNAPSHOT	501	85.5%	81.6%	2.7	0.0%	06:03
	Reference Application Module	1.0-SNAPSHOT	340	66.1%	80.6%	3.0	0.0%	Oct 01 2013
	HTML Form Entry UI Framework Integration Module	1.0-SNAPSHOT	647	34.1%	79.6%	5.8	0.0%	09:03

Coupling in Code

Package tangle index

44.4%

> 1 cycles

Dependencies to cut

1 between packages


2 between files

Projects [Shared by Sonar]



<u>A</u> <u>Name</u>	<u>Version</u>	<u>Pkgs tangle</u> ▾	<u>LOCs</u>	<u>Coverage</u>
 Paper Record Management Module	1.0-SNAPSHOT	44.4%	1,504 ↗	74.3%
 OpenMRS UI Framework	3.2-SNAPSHOT	42.9%	5,678	33.3%
 EMR API Module	1.1-SNAPSHOT	23.3% ↘	6,776 ↘	64.5%
 Calculation	1.1-SNAPSHOT	20.8%	1,440	61.0%
 OpenMRS	1.10.0-SNAPSHOT	14.5%	113,949 ↘	32.9%

Duplication

Projects [Shared by Sonar] 

Change Columns Display as: **List** Treemap



A	Name	Version	LOCs	Coverage	RCI	Cmpx/method	Dup. lines(%)
☆	Rest Web Services	2.3-SNAPSHOT	10,937 ↗	54.6%	77.2%	2.4	8.5%
☆	Serialization Xstream	0.2.8-SNAPSHOT	1,330	0.0%	82.3%	2.2	6.6%
☆	Registration App Module	1.0-SNAPSHOT	705 ↗	22.3%	87.2% ↘	3.1	4.8%
☆	Logic Module	0.5.3-SNAPSHOT	11,073	0.1%	53.4%	4.2	4.3%
☆	Name Phonetics	1.5-SNAPSHOT	961	0.3%	42.0%	2.3	3.8%
☆	OpenMRS UI Framework	3.2-SNAPSHOT	5,678	33.3%	76.3%	2.7	3.7%
☆	OpenMRS	1.10.0-SNAPSHOT	113,949 ↗	32.9%	65.7%	2.7	3.2%
☆	ID Generation	2.7-SNAPSHOT	2,199	41.0%	86.4%	1.8	2.6%
☆	HTML Widgets	1.6.6-SNAPSHOT	2,885	0.6%	88.7%	3.4	2.5%
☆	HTML Form Entry	2.3-SNAPSHOT	14,451 ↗	65.5%	77.4%	5.4	2.4%
☆	Calculation	1.1-SNAPSHOT	1,440	61.0%	77.4%	1.9	1.8%
☆	Reporting	0.8.1-SNAPSHOT	31,118 ↗	41.6%	85.3%	2.5	1.5%
☆	Paper Record Management Module	1.0-SNAPSHOT	1,504 ↗	74.3%	88.2%	2.2	1.1%
☆	EMR API Module	1.1-SNAPSHOT	6,776 ↗	64.5%	89.9%	2.5	0.7%

Duplications

8.5%

1,690 lines
408 blocks
42 files

Duplication

Duplicated lines (%)

8.5%

Drilldown on 1,690 Duplicated lines

Rest Web Services 1.8 OMOD	1,336	org.openmrs.module.webservices.rest.web.v1_0.resource.openmrs1_8	1,336	PatientIdentifierResource1_8	70
Rest Web Services 1.9 OMOD	264	org.openmrs.module.webservices.rest.web.v1_0.resource.openmrs1_9	264	ObsResource1_8	69
Rest Web Services Common OMOD	90	org.openmrs.module.webservices.rest.web.api.impl	52	FormFieldResource1_8	67
		org.openmrs.module.webservices.rest.web.resource.impl	26	PersonAttributeTypeResource1_8	65
		org.openmrs.module.webservices.rest.web.resource.api	12	PersonNameResource1_8	65
				PersonAddressResource1_8	62

Rest Web Services / Rest Web Services 1.8 OMOD

org.openmrs.module.webservices.rest.web.v1_0.resource.openmrs1_8.PatientIdentifierTypeResource1_8


Coverage Dependencies **Duplications** Issues LCOM4 Source

Raw













44.0% Lines: 159 Duplicated lines: 70 Duplicated blocks: 35

Blocks	Nb Lines	From line	File	Details
2	44	48	PatientIdentifierTypeResource1_8	org.openmrs.module.webservices.rest.web.v1_0.resource.openmrs1_8.PatientIdentifierTypeResource1_8
	33	43	ConceptSourceResource1_8	<pre>48 @Override 49 public DelegatingResourceDescription getRepresentationDescription(Representation rep) { 50 if (rep instanceof DefaultRepresentation) { 51 DelegatingResourceDescription description = new DelegatingResourceDescription(); 52 description.addProperty("uuid"); 53 description.addProperty("display", findMethod("getDisplayString")); 54 } 55 }</pre>
5	33	48	PatientIdentifierTypeResource1_8	org.openmrs.module.webservices.rest.web.v1_0.resource.openmrs1_8.PatientIdentifierTypeResource1_8
	22	38	FieldTypeResource1_8	<pre>48 @Override 49 public DelegatingResourceDescription getRepresentationDescription(Representation rep) { 50 if (rep instanceof DefaultRepresentation) { 51 DelegatingResourceDescription description = new DelegatingResourceDescription(); 52 description.addProperty("uuid"); 53 description.addProperty("display", findMethod("getDisplayString")); 54 } 55 }</pre>
	22	41	ConceptDatatypeResource1_8	
	22	43	ConceptSourceResource1_8	
	30	50	PersonAttributeTypeResource1_8	

Comments / Public API

Projects [Shared by Sonar] 



	A Name	Version	Pub. doc. API(%)	
☆	 Event Module	2.2-SNAPSHOT	97.7%	
☆	 Calculation	1.1-SNAPSHOT	95.5%	
☆	 ID Generation	2.7-SNAPSHOT	93.0%	
☆	 HTML Widgets	1.6.6-SNAPSHOT	87.9%	
☆	 UI Library Module	2.0.5-SNAPSHOT	85.7%	
☆	 HTML Form Entry Extensions for OpenMRS 1.9 Module	1.5-SNAPSHOT	84.6%	
☆	 Reporting	0.8.1-SNAPSHOT	82.3%	
☆	 OpenMRS	1.10.0-SNAPSHOT	76.0%	1
☆	 Registration Core Module	1.0-SNAPSHOT	75.0%	
☆	 Metadata Mapping Module	1.0.2-SNAPSHOT	73.2%	
☆	 Rest Web Services	2.3-SNAPSHOT	72.8%	
☆	 HTML Form Entry	2.3-SNAPSHOT	71.7%	

Comments / Public API

☆	 Core Apps Module	1.1-SNAPSHOT	31.1%	1,857	43.7
☆	 Reference Metadata Module	1.0-SNAPSHOT	30.8% 	154	71.4
☆	 Name Phonetics	1.5-SNAPSHOT	29.9%	961	0.5
☆	 EMR API Module	1.1-SNAPSHOT	27.7% 	6,776	64.5
☆	 Reporting UI Module	1.0-SNAPSHOT	25.0%	280	4.5
☆	 Registration App Module	1.0-SNAPSHOT	22.9%	705	22.5
☆	 App Framework Module	2.1-SNAPSHOT	17.2%	1,360	72.5

30 results





Next Steps ??

How do we improve OpenMRS Code??

Build Failure Rules??

Tasks??

Thank you!

<http://go.openmrs.org/sonar>



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