



Evaluation Report

Higher Quality



Application : Earth

Artefact name : Earth

Artefact type : Application

Author : demo

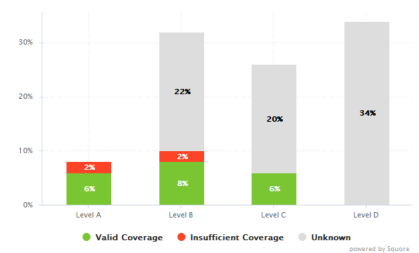
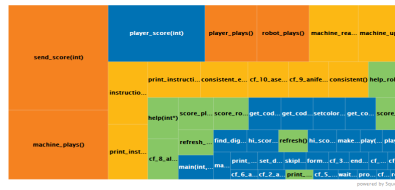
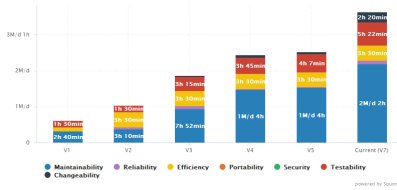
Model : software_analytics

Version : Current (V7)

Version date : 2018.12.13 02:00:00 CET

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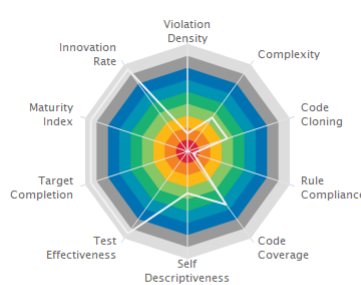
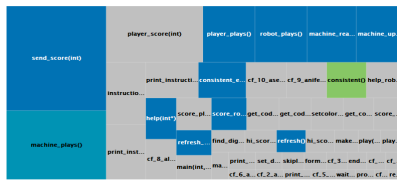
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Technical Debt Trend

Function Complexity Map

Coverage Compliance per Safety Level



Function Coverage Map

Analytics KPI breakdown

Score Card

Complexity

Ratio of complex modules	10.8%	C →
Number of Modules	50	i
Class Complexity Ratio	0.0%	A →
Number of Classes	3	i

Complexity Volume

Complexity Volume Ratio	36.04%	E →
Executable Statements	1,476 (Total Statements)	i
Complexity Volume	532 ('F' or 'G' statements)	i
Volume of "G" Complexity	0	i
Volume of "F" Complexity	532	i

Test Coverage Thresholds

Statement Coverage Threshold for Critical Factor A	80	i
Statement Coverage Threshold for Critical Factor B	100	i
Statement Coverage Threshold for Critical Factor C	100	i
Statement Coverage Threshold for Critical Factor D	100	i
Branch Coverage Threshold for Critical Factor A	50	i
Branch Coverage Threshold for Critical Factor B	80	i
Branch Coverage Threshold for Critical Factor C	100	i
Branch Coverage Threshold for Critical Factor D	100	i
MCDC Coverage Threshold for Critical Factor A	0	i
MCDC Coverage Threshold for Critical Factor B	50	i
MCDC Coverage Threshold for Critical Factor C	80	i
MCDC Coverage Threshold for Critical Factor D	100	i
Coverage Rating is based To Be Tested modules	1	i

Test Strategy Thresholds

VG Test Threshold	-1	i
PATH Test Threshold	-1	i
LEVL Test Threshold	-1	i
VOCF Test Threshold	-1	i

Coding Standard Compliance































Rule Compliance	47.4%	i
Non Compliant Standards	10	i
Non Conformity Count	203	i
Non Conformity Density	96/KLoc	i
Coding Standards	19	i

Additional Information

Measures

Name	Current Value	Reference Value
#Tests	0	0 =
#Failed	0	0 =

Indicators

Name	Current Value	Reference Value
Code Cloning	0.12 Level D 	0 Level A  
Code Coverage Compliance	96.9% Level B 	? Unknown  
Complexity	0.14 Level D 	0.14 Level D  
Innovation Rate	- Unknown 	- Unknown  
Maturity Index	- Unknown 	- Unknown  
Rule Compliance	47.4% Level G 	68.4% Level E  
Self Descriptiveness	76% Level D 	82.2% Level C  
Test Effectiveness	? Unknown 	? Unknown  
Tickets Completion Rate	- Unknown 	- Unknown  
Violations Density	629 Pts/KLoc Level F 	539 Pts/KLoc Level F  

Action Items

Id	Name	Since	Scope	Priority	Status
19	Add Unit Test to the module	Current	C Function	Critical	Open
<i>Add Unit Test to the module</i>					
<ul style="list-style-type: none"> - Component is relatively stable. - Artifact is not new. - Code Status reveals that development is in progress (=1). - Critical Factor is HIGH - Coverage Level is lower than project expectation. - Function shall be tested according to test strategy criterion (Vg=52>-1, NPATH=17056>-1, LEVL=4>-1 and VOFC=5.85>-1). 					
14	Add Unit Test to the module	Current	C Function	High	Open
<i>Add Unit Test to the module</i>					
<ul style="list-style-type: none"> - Component is relatively stable. - Artifact is not new. - Code Status reveals that development is in progress (=1). - Critical Factor is LOW - Coverage Level is lower than project expectation. - Function shall be tested according to test strategy criterion (Vg=15>-1, NPATH=77>-1, LEVL=4>-1 and VOFC=7.7>-1). 					
15	Add Unit Test to the module	Current	C Function	High	Open
<i>Add Unit Test to the module</i>					
<ul style="list-style-type: none"> - Component is relatively stable. - Artifact is not new. - Code Status reveals that development is in progress (=1). - Critical Factor is LOW - Coverage Level is lower than project expectation. - Function shall be tested according to test strategy criterion (Vg=15>-1, NPATH=151>-1, LEVL=3>-1 and VOFC=8.06>-1). 					
31	Add Unit Test to the module	Current	C Function	High	Open
<i>Add Unit Test to the module</i>					
<ul style="list-style-type: none"> - Component is relatively stable. - Artifact is not new. - Code Status reveals that development is in progress (=1). - Critical Factor is LOW - Coverage Level is lower than project expectation. - Function shall be tested according to test strategy criterion (Vg=8>-1, NPATH=27>-1, LEVL=2>-1 and VOFC=4.17>-1). 					
32	Add Unit Test to the module	Current	C Function	High	Open
<i>Add Unit Test to the module</i>					
<ul style="list-style-type: none"> - Component is relatively stable. - Artifact is not new. - Code Status reveals that development is in progress (=1). - Critical Factor is LOW - Coverage Level is lower than project expectation. - Function shall be tested according to test strategy criterion (Vg=19>-1, NPATH=496>-1, LEVL=5>-1 and VOFC=7.98>-1). 					

Action Items

Id	Name	Since	Scope	Priority	Status
21	Add Unit Test to the module	Current	C Function	High	Open
<i>Add Unit Test to the module</i>					
<ul style="list-style-type: none"> - Artifact is new. - Code Status reveals that development is in progress (=1). - Critical Factor is LOW - Coverage Level is lower than project expectation. - Function shall be tested according to test strategy criterion (Vg=12>-1, NPATH=60>-1, LEVL=4>-1 and VO CF=5.9>-1). 					
26	Add Unit Test to the module	Current	C Function	High	Open
<i>Add Unit Test to the module</i>					
<ul style="list-style-type: none"> - Artifact is new. - Code Status reveals that development is in progress (=1). - Critical Factor is LOW - Coverage Level is lower than project expectation. - Function shall be tested according to test strategy criterion (Vg=20>-1, NPATH=1392>-1, LEVL=4>-1 and VO CF=5.63>-1). 					
29	Review Legacy Status of the	Current	C File	Low	Open
<i>Review Legacy Status of the component (Code stability reveals potential changes in this Legacy component)</i>					
<ul style="list-style-type: none"> - STATUS_LEGACY (4) - The artefact has been significantly changed (Stability < 70%): SI=0.94 					
30	Review Legacy Status of the	Current	C File	Low	Open
<i>Review Legacy Status of the component (Code stability reveals potential changes in this Legacy component)</i>					
<ul style="list-style-type: none"> - STATUS_LEGACY (4) - The artefact has been significantly changed (Stability < 70%): SI=0.48 					
18	More 'Blocker' or 'Critical' rules	Current	C Function	High	Open
<i>The object hi_scores_disp(int) should be reviewed , it has a higher number of 'Blocker' or 'Critical' rules violated since the previous version.</i>					
<ul style="list-style-type: none"> - Code Status reveals that development is in progress (=1). - Artefact has a higher number of 'Blocker' or 'Critical' findings - Source code lines have been modified, removed or added - Artefact had source code in previous version 					
23	More 'Blocker' or 'Critical' rules	Current	C Function	High	Open
<i>The object get_code_robot(guess*) should be reviewed , it has a higher number of 'Blocker' or 'Critical' rules violated since the previous version.</i>					
<ul style="list-style-type: none"> - Code Status reveals that development is in progress (=1). - Artefact has 'Blocker' or 'Critical' findings - Artifact is new. 					
28	More 'Blocker' or 'Critical' rules	Current	C Function	High	Open
<i>The object robot_plays() should be reviewed , it has a higher number of 'Blocker' or 'Critical' rules violated since the previous version.</i>					
<ul style="list-style-type: none"> - Code Status reveals that development is in progress (=1). - Artefact has 'Blocker' or 'Critical' findings - Artifact is new. 					

Action Items

Id	Name	Since	Scope	Priority	Status
13	More 'High' or 'Major' rules	V5	C Function	Medium	Open
<i>The object <code>player_score(int)</code> has a higher number of 'High' or 'Major' rules violated since the previous version.</i>					
<ul style="list-style-type: none">- Code Status reveals that development is in progress (=1).- Artefact should be reviewed due to higher number of 'High' or 'Major' findings- Source code lines have been modified, removed or added- Artefact had source code in previous version					
16	More 'High' or 'Major' rules	Current	C Function	Medium	Open
<i>The object <code>machine_plays()</code> has a higher number of 'High' or 'Major' rules violated since the previous version.</i>					
<ul style="list-style-type: none">- Code Status reveals that development is in progress (=1).- Artefact should be reviewed due to higher number of 'High' or 'Major' findings- Source code lines have been modified, removed or added- Artefact had source code in previous version					
17	More 'High' or 'Major' rules	Current	C Function	Medium	Open
<i>The object <code>hi_scores_disp(int)</code> has a higher number of 'High' or 'Major' rules violated since the previous version.</i>					
<ul style="list-style-type: none">- Code Status reveals that development is in progress (=1).- Artefact should be reviewed due to higher number of 'High' or 'Major' findings- Source code lines have been modified, removed or added- Artefact had source code in previous version					
20	More 'High' or 'Major' rules	Current	C Function	Medium	Open
<i>The object <code>score_robot()</code> has a higher number of 'High' or 'Major' rules violated since the previous version.</i>					
<ul style="list-style-type: none">- Code Status reveals that development is in progress (=1).- Artefact has 'High' or 'Major' findings- Artifact is new.					
22	More 'High' or 'Major' rules	Current	C Function	Medium	Open
<i>The object <code>get_code_robot(guess*)</code> has a higher number of 'High' or 'Major' rules violated since the previous version.</i>					
<ul style="list-style-type: none">- Code Status reveals that development is in progress (=1).- Artefact has 'High' or 'Major' findings- Artifact is new.					
24	More 'High' or 'Major' rules	Current	C Function	Medium	Open
<i>The object <code>help_robot(int*)</code> has a higher number of 'High' or 'Major' rules violated since the previous version.</i>					
<ul style="list-style-type: none">- Code Status reveals that development is in progress (=1).- Artefact has 'High' or 'Major' findings- Artifact is new.					
25	More 'High' or 'Major' rules	Current	C Function	Medium	Open
<i>The object <code>robot_plays()</code> has a higher number of 'High' or 'Major' rules violated since the previous version.</i>					
<ul style="list-style-type: none">- Code Status reveals that development is in progress (=1).- Artefact has 'High' or 'Major' findings- Artifact is new.					

Action Items

Id	Name	Since	Scope	Priority	Status
27	Remove cloned and complex	Current	C Function	Critical	Open

Remove cloned and complex module

- Code Status reveals that development is in progress (=1).
- Nesting Level is too deep (=4)
- Cyclomatic Complexity is too high (=20)
- [No description] Cloned Algorithmic: There shall be no algorithmic cloning
- Code Status reveals that development is in progress (=1).
- Nesting Level is too deep (=4)
- Cyclomatic Complexity is too high (=20)
- [No description] Cloned Functions: There shall be no duplicated functions

5	Component shall be reworked	V2	Folder	High	Open
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Component shall be reworked

- Component size in LC (=2027)
- Code Status reveals that development is in progress (=0).
- Technical Debt is too high regarding Rebuild Cost: ratio=0.34, tech debt=1462.5 (min), rebuild cost=4345.6 (min)

Top 10 most changed artefacts

Rating	Artefact	Path
C	print_instructions_fr()	core/write.c
D	player_score(int)	apps/score.c
C	print_instructions_gb()	core/write.c
D	machine_plays()	apps/machine.c
A	machine_print_score(int)	apps/machine.c
E	machine.c	apps
E	write.c	core
E	hi_scores_disp(int)	apps/score.c
A	skipline(int)	core/base.c
C	main(int,char*[])	apps/master.c

Findings

Type: [Violations](#)

Total: 245

Delta: 102

Practice	Occ.	Delta	Data Provider	Severity	Remediation Cost
Recursion are not allowed	1	+1	Squan Sources	Critical	High
Goto shall not be used	1	+1	Squan Sources	Major	Medium
Missing Break	6	+2	Squan Sources	Critical	Low
Commented-out Source Code is	1	+1	Squan Sources	Major	Low
Multiple exits are not allowed	39	+1	Squan Sources	Minor	Low
Assignment in Boolean	16	+10	Squan Sources	Minor	Low
Missing compound if	89	+41	Squan Sources	Minor	Tiny
Missing compound statement	47	+19	Squan Sources	Minor	Tiny
Cloned Functions	10	+8	Squan Sources	Major	Medium
Cloned Algorithmic	4	+4	Squan Sources	Major	Medium
Cloned Files	2	+2	Squan Sources	Major	Medium
Avoid Duplicated Blocks in	8	+6	Squan Sources	Major	Low
'abort, exit, getenv or system'	3	+1	Squan Sources	Major	Medium
IO Functions shall not be used	3	0	Squan Sources	Major	Medium
'atof, atoi or atol' shall not be	1	0	Squan Sources	Major	Medium
Time Handling Functions shall	1	0	Squan Sources	Major	Medium
Risky Empty Statement	1	+1	Squan Sources	Blocking	Low
Common realloc mistake:	5	0	Cppcheck	Blocking	Medium
Dynamic Memory Allocation	2	0	Squan Sources	Major	Medium
Missing final else	2	+1	Squan Sources	Minor	Low
TODO shall not be committed in	1	+1	Squan Sources	Minor	Low
Fallthrough shall be avoided	2	+2	Squan Sources	Blocking	Low

Findings

Type: [Improved practices](#)

Total: 0

Delta: 0

Findings

Type: [Deteriorated practices](#)

Total: 233

Delta: 102

Practice	Occ.	Delta	Data Provider	Severity	Remediation Cost
Recursion are not allowed	1	+1	Squan Sources	Critical	High
Goto shall not be used	1	+1	Squan Sources	Major	Medium
Missing Break	6	+2	Squan Sources	Critical	Low
Commented-out Source Code is	1	+1	Squan Sources	Major	Low
Multiple exits are not allowed	39	+1	Squan Sources	Minor	Low
Assignment in Boolean	16	+10	Squan Sources	Minor	Low
Missing compound if	89	+41	Squan Sources	Minor	Tiny
Missing compound statement	47	+19	Squan Sources	Minor	Tiny
Cloned Functions	10	+8	Squan Sources	Major	Medium
Cloned Algorithmic	4	+4	Squan Sources	Major	Medium
Cloned Files	2	+2	Squan Sources	Major	Medium
Avoid Duplicated Blocks in	8	+6	Squan Sources	Major	Low
'abort, exit, getenv or system'	3	+1	Squan Sources	Major	Medium
Risky Empty Statement	1	+1	Squan Sources	Blocking	Low
Missing final else	2	+1	Squan Sources	Minor	Low
TODO shall not be committed in	1	+1	Squan Sources	Minor	Low
Fallthrough shall be avoided	2	+2	Squan Sources	Blocking	Low

Findings

Relaxation state: RELAXED

Path **Name** **Relaxation**

main(int, char*

apps/master.c	main(int, char*[])	Location	Line: 95	Rule	COMPOUND:Missing compound statement	
		Status	'Derogation' set by demo (2019-04-10T13:58:22)			
		Justification	keeping some conciseness by avoiding using compound {}			

apps/master.c	main(int, char*[])	Location	Line: 94	Rule	NOASGCOND:Assignment in Boolean	
		Status	'Derogation' set by demo (2019-04-10T13:58:22)			
		Justification	clearing out the buffer by assigning inst to the next char			