CS 6301.502
Team 6 – Bennilyn Quek and Kunal Kapoor

Assignment - 2

ANT BugID/Title/Version

ID	Title	Version
54026	Zip task on <mappedresources> that excludes certain files by way of the mapper results in a NullPointerException	1.8.2
52188	DirectoryScanner is not threadsafe	1.8.2
49453	Ant get task does not interact well with transparent proxies	1.8.2
51110	[PATCH] Ambiguous expected result from the resourceexists condition with URLResource	1.8.2
52706	[PATCH] Make Execute class extensible to allow custom CommandLauncher implementation	1.8.2

TomCat BugID/Title/Version

ID	Title	Version
57715	"Finding security constraints can fail when HTTP methods are specified";	Tomcat 9
58581	"StandardHostValve#custom throws NPE if custom error page is incorrectly configured";	Tomcat 9
58053	"Use loop rather than assuming the size of the array won't change";	Tomcat 9
58735	"Add support for X-XSS-Protection header";	Tomcat 9
57431	"Enable custom context implementation when using embedded tomcat";	Tomcat 9

Assignment - 2

Precision and recall @ {5,10,20}, and effectiveness for each query of each system

Apache Ant – Deliverables.

Query	Precision			Recall			Effectiveness		
	5	10	20	5	10	20	5	10	20
Bug 54026 T+D	0	0	0.1	0	0	0.02	0	0	2
Bug 54026 T	0.4	0.4	0.25	0.02	0.05	0.07	1	1	2
Bug 54026 D	0	0	0.05	0	0	0.01	0	0	2
Bug 52188 T+D	0	0.1	0.25	0	0.01	0.09	0	3	2
Bug 52188 T	0	0.1	0.1	0	0.01	0.03	0	3	3
Bug 52188 D	0	0.2	0.25	0	0.03	0.09	0	3	4
Bug 49453 T+D	0.4	0.2	0.1	0.05	0.05	0.05	1	3	3
Bug 49453	0	0.2	0.15	0	0.05	0.08	0	3	3

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Assignment - 2

T									
Bug 49453 D	0.4	0.2	0.1	0.05	0.05	0.05	1	3	3
Bug 51110 T+D	0.6	0.4	0.45	0.12	0.16	0.37	1	1	1
Bug 51110 T	0.8	0.7	0.5	0.16	0.29	0.41	1	1	1
Bug 51110 D	0.6	0.4	0.4	0.12	0.16	0.33	1	1	1
Bug 52706 T+D	0	0	0	0	0	0	0	0	0
Bug 52706 T	0	0	0	0	0	0	0	0	0
Bug 52706 D	0	0	0	0	0	0	0	0	0

Assignment - 2

Apache Tomcat – Deliverables

Query	Precision			Recall			Effectiveness		
	5	10	20	5	10	20	5	10	20
Bug 57715 T+D	1	1	0.95	0.05	0.11	0.21	1	1	1
Bug 57715 T	0.8	0.6	0.75	0.04	0.06	0.16	1	1	1
Bug 57715 D	1	1	0.95	0.05	0.11	0.21	1	1	1
Bug 58581 T+D	0.4	0.5	0.25	0.3	0.8	0.8	1	1	2
Bug 58581 T	0.8	0.5	0.3	0.6	0.8	1	1	1	2
Bug 58581 D	0.4	0.5	0.25	0.3	0.8	0.8	1	1	2
Bug 58053 T+D	0.8	0.6	0.3	0.6	1	1	1	1	2
Bug 58053 T	0.4	0.2	0.1	0.33	0.33	0.33	1	2	2
Bug 58053	0.8	0.5	0.25	0.66	0.83	0.83	1	1	2

Assignment - 2

D								
Bug 58735 T+D	1	0.8	0.4	0.22	0.36	0.36	1	1	1
Bug 58735 T	1	0.7	0.35	0.22	0.31	0.31	1	1	1
Bug 58735 D	1	0.6	0.4	0.22	0.27	0.36	1	1	1
Bug 57431 T+D	1	0.9	0.85	0.09	0.16	0.32	1	1	1
Bug 57431 T	0.6	0.7	0.6	0.05	0.13	0.22	1	1	1
Bug 57431 D	1	1	0.85	0.09	0.18	0.32	1	1	1

Assignment - 2

• Average and median precision and recall @{5,10,20}, and effectiveness for each system

ANT

	Precision		Recall		Effectiveness	
	Average	Median	Average	Median	Average	Median
5	0.213333	0	0.034667	0	0.4	0
10	0.193333	0.2	0.057333	0.03	1.466667	1
20	0.18	0.1	0.106667	0.05	1.8	2

Tomcat

	Precision		Recall		Effectiveness	
	Average	Median	Average	Median	Average	Median
5	0.8	0.8	0.254667	0.22	1	1

Assignment - 2

| 10 | 0.673333 | 0.6 | 0.416667 | 0.31 | 1.066667 | 1 |
| 20 | 0.503333 | 0.4 | 0.482 | 0.33 | 1.4 | 1 |

• Average and median precision and recall @{5,10,20}, and effectiveness for all the systems (i.e., across systems)

	Precision		Recall		Effectiveness	
	Average	Median	Average	Median	Average	Median
5	0.506667	0.5	0.144667	0.05	0.7	1
10	0.433333	0.45	0.237	0.12	1.266667	1
20	0.341667	.25	0.294333	0.215	1.6	1.5

Assignment - 2

• Comparison of precision, recall, and effectiveness between the three types of queries, defined in step 3.a.

ANT

	Precision		Recall		Effectiveness	
	Average	Median	Average	Median	Average	Median
Query 1	0.17	0.1	0.061	0.01	1.13	1
Query 2	0.24	0.15	0.078	0.05	1.26	1
Query 3	0.17	0.1	0.059	0.03	1.26	1

Tomcat

	Precision		Recall		Effectiveness	
	Average	Median	Average	Median	Average	Median
Query 1	0.71	0.9	0.42	0.16	1.13	1
Query 2	0.56	0.6	0.32	0.31	1.2	1
Query 3	0.7	0.6	0.4	0.27	1.13	1

Assignment - 2

All Systems

	Precision		Recall		Effectiveness	
	Average	Median	Average	Median	Average	Median
Query 1	0.44	0.5	0.2405	0.085	1.13	1
Query 2	0.4	0.375	0.199	0.18	1.23	1
Query 3	0.435	0.35	0.2295	0.15	1.195	1

Comparison of precision, recall, and effectiveness between the three types of queries:

- As we see Query 1(Bug title plus Bug Description) and 3(Bug Description) give fare better that Query 2(Bug Title).
- Bug description and Bug title plus bug description had a greater positive effect on query performance when compared with using the bug title in a query.
- Only few Bugs got all hits, while majority of them have misses.
- We can see, in the last the Average Precision for all systems are almost equal.