

```

1 public class TestSerializable extends TestCase {
2   private static boolean cloneViaSerialization_visited = false;
3   public static Object cloneViaSerialization (Serializable obj) throws IOException, ClassNotFoundException {
4     if (TestSerializable.cloneViaSerialization_visited)
5       return IMM_cloneViaSerialization(obj);
6     ByteArrayOutputStream boas = new ByteArrayOutputStream ();
7     ObjectOutputStream oos = new ObjectOutputStream (boas); /*INSTR: BAOS.init*/
8     /*INSTR: BAOS.write*/ oos.writeObject (obj);
9     ByteArrayInputStream bias = new ByteArrayInputStream (/*INSTR: BAOS.toByteArray*/ boas.toByteArray ());
10    ObjectInputStream ois = new ObjectInputStream (bias);
11    TestSerializable.cloneViaSerialization_visited = true
12    return ois.readObject (); }
13 public static Object IMM_cloneViaSerialization (Serializable obj) throws IOException, ClassNotFoundException {
14   ByteArrayOutputStream boas = new ByteArrayOutputStream ();
15   ObjectOutputStream oos = new ObjectOutputStream (boas);
16   oos.writeObject (obj);
17   ByteArrayInputStream bias = new ByteArrayInputStream (boas.toByteArray ());
18   ... }
19 }

```

Fig. 1. Illustrating how LAZYMOP<sup>e</sup>'s program transformations reduce the generation of duplicate traces.

Fig 1 shows how LAZYMOP<sup>e</sup>'s de-instrumentation reduces the generation of repeatedly monitored identical traces. There,  $m$  is `cloneViaSerialization` and  $s$  is `BAOS`. Method  $m$  is instrumented as usual, but an un-instrumented copy is also added. A static flag is added to the code on line 2 and initialized to `false`. A guard is also added to the instrumented  $m$  (lines 4 and 5) so that on the first call, the instrumented method body is executed. But, in subsequent calls, the un-instrumented copy is called. The flag is set at all potential return points (like line 11) from the original method. To summarize, in this case, the instrumented and more expensive-to-monitor version of  $m$  is executed only once per test execution. Doing so saves the time that RV would have spent on repeatedly generating and monitoring the same trace.

Table 1. Characteristics of 179 projects that we use in our evaluation: no. of test methods (#tests), test time w/o RV in seconds ( $t$ ), relative JAVAMOP overhead ( $t^{rv}/t$ ), absolute JAVAMOP overhead (s,  $t^{rv}-t$ ), lines of code (SLOC), % statement coverage ( $cov^s$ ), % branch coverage ( $cov^b$ ), no. of GitHub commits (#SHAs), years since 1st commit (age), no. of stars (#★), max. total cyclomatic complexity (CyComp.), mutation score (mut. score), and ratio of traces repetitiveness (Rep).

	#tests	$t$	$t^{rv}/t$	$t^{rv}-t$	SLOC	$cov^s$	$cov^b$	#SHAs	age	★	CyComp.	mut. score	Rep.
AAA-AA/basic-tools	18	18.865	1.271084018	5.114	6239	16.2	6.2	73	6	67	70	100	100.1
aelstad/keccakj	40	62.8	1.3	16.5	3614	64.1	76.9	45	11	18	85	78	100.0
agarciadom/xeger	4	2.8	13.8	35.9	204	50.0	74.1	41	12	89	28	53	100.0
albfernandez/itext2	303	4.2	13.4	52.4	100367	36.6	45.7	258	9	30	742	35	99.4
albfernandez/javadb	154	6.9	5.1	28.4	7286	73.9	80.7	495	22	215	122	0	99.8
almondtools/stringsearchalgorithms	223	7.0	26.7	179.8	10355	92.2	94.7	250	10	42	127	86	100.0
almson/almson-refcount	5	10.2	6.4	54.7	677	27.0	52.3	19	7	17	35	65	100.0
andylamp/BPlusTree	5	230.8	1.1	25.9	3233	58.5	59.2	54	10	152	299	100	100.0
Ant-Grand/Grand	91	3.8	10.5	36.5	4658	78.2	78.3	477	21	39	57	73	100.0
Antibrumm/jackson-antpathfilter	11	2.1	55.2	112.2	1067	31.0	45.2	46	10	64	95	73	100.0
apache/commons-codec	1699	20.0	1.9	18.3	23976	92.7	94.5	2604	22	436	250	0	99.5
apache/commons-compress	2708	34.6	5.3	147.3	72097	75.3	86.8	4860	22	305	416	50	99.6
apache/commons-imaging	1050	27.3	6.9	161.3	42027	64.5	77.7	2412	18	396	235	0	100.0
apache/commons-jxpath	411	2.9	7.9	19.7	26305	68.1	77.5	859	24	28	1348	87	99.6
apache/dubbo-hessian-lite	66	2.3	9.5	19.9	14063	25.3	31.4	2458	14	48	1560	80	99.9
apache/sling-org-apache-sling-scripting-sightly	67	2.8	22.0	58.3	4676	27.7	34.1	321	10	13	68	84	99.3
apache/sling-org-apache-sling-resolver	166	3.2	18.1	54.7	8404	32.7	40.7	641	16	7	78	80	99.4
apanimesh061/VaderSentimentJava	1	2.5	8.8	19.4	888	86.8	95.0	59	9	60	17	84	100.0
arangodb/jackson-dataformat-velocypack	2185	9.1	24.5	213.6	52382	73.3	65.0	115	8	13	83	87	100.0
arinaugarcia/sallefy	40	3.9	29.8	112.0	13342	21.9	12.8	931	6	11	52	100	98.8
aseldawy/spatialhadoop2	118	173.1	1.5	90.7	38669	28.4	29.2	1617	12	148	228	0	99.9
attoparser/attoparser	16	62.1	7.0	375.2	17205	64.6	69.8	330	13	47	339	82	100.0
awslabs/route53-infima	20	2.0	15.7	28.7	1160	0.0	0.0	9	12	337	35	74	100.0
bdupras/guava-probably	95	7.0	3.5	17.6	1910	78.8	94.6	72	10	53	57	83	100.0
bfh-evg/unicrypt	390	35.5	10.5	339.1	33414	55.7	68.9	939	12	11	101	93	100.0
bonnyfone/vectalign	9	2.1	5.1	8.5	2626	48.5	31.8	75	10	2031	95	100	99.6
cocolian/cocolian-nlp	22	10.1	9.8	89.3	3550	55.9	64.5	9	7	23	43	33	99.9
codelion/gramtest	8	2.0	39.1	75.9	491	45.3	49.0	114	10	84	15	54	100.0
confluentinc/kafka-connect-datagen	55	3.3	20.1	63.5	1107	75.8	89.1	298	7	167	22	0	99.4
contentful/contentful-management.java	312	5.8	8.7	44.5	8533	69.2	89.4	481	11	25	42	0	99.5
contentful/contentful.java	233	14.9	4.3	49.7	7369	83.6	87.8	772	11	73	80	89	98.5
conveyal/osm-lib	10	9.8	9.2	80.1	2999	44.2	51.0	162	10	35	53	80	100.0
cowtowncoder/java-cachemate	15	2.0	3.7	5.4	2171	50.4	54.9	60	15	21	87	79	100.0
cowtowncoder/java-uuid-generator	66	3.6	10.9	35.8	4862	42.8	50.4	236	15	631	80	88	100.0
ctapweb/AutoSubClause	4	4.2	19.1	76.8	1586	35.0	39.5	11	6	10	74	79	99.6
dakusui/junit	254	8.8	63.3	548.0	10071	81.8	90.9	212	8	76	73	0	100.0
danieljdk/dictomaton	221	5.9	26.3	149.3	4184	56.5	55.7	142	12	130	47	91	100.0
davidmoten/bplustree	93	16.2	8.0	113.7	3279	82.7	93.3	374	6	40	70	88	100.0
davidmoten/hilbert-curve	68	17.6	1.8	14.5	1769	88.8	95.4	369	8	117	35	70	100.0
davidmoten/rtrtree	311	9.4	17.1	151.4	8390	79.7	83.6	1241	11	1060	44	79	100.0
davidmoten/rtrtree-multi	174	8.2	13.5	102.7	4067	91.0	95.3	159	6	48	32	77	99.8
davidmoten/rtrtree2	249	7.5	12.6	87.1	5532	80.2	89.3	1283	11	80	31	73	100.0
davidmoten/rxjava-extras	730	96.6	1.8	80.3	13908	65.8	69.1	1488	11	268	67	81	99.9
delving/x3ml	45	3.5	15.6	50.8	3405	61.6	73.6	185	12	10	74	82	99.7
dermasherbrezon/jradio	645	9.8	20.7	192.7	133149	61.6	81.8	1354	8	63	399	76	100.0
dhatim/business-hours-java	44	1.8	6.0	9.0	1153	98.2	99.5	126	10	26	18	87	99.9
dnsjava/dnsjava	1558	17.5	6.6	98.7	41606	65.7	68.9	2130	27	859	215	0	99.1
dperezcabrera/jpoker	318	4.3	31.6	130.2	3743	15.7	10.1	59	10	35	23	94	100.0
eightbitjim/cassette-nibbler	28	2.7	107.3	288.8	18055	16.4	18.5	26	8	10	137	68	100.0
finmath/finmath-lib	656	1449.7	12.9	17223.0	99521	0.0	0.0	4643	12	463	304	0	100.0
firebase/firebase-admin-java	1616	5.7	24.6	135.1	73500	78.5	89.7	470	9	563	128	0	99.1
flipkart-incubator/databuilderframework	83	62.6	4.2	200.9	6999	52.4	74.6	151	11	21	30	85	100.0
fortitutedec/sonar-ruby-plugin	26	2.1	19.1	38.2	1457	76.1	81.3	23	8	18	13	85	88.8
Francesco149/koohee	895	2.9	2.5	4.5	2195	72.9	79.4	104	8	12	56	80	77.6
fraunhoferfokus/Fuzzino	170	11.6	10.7	111.9	19857	56.1	78.8	81	12	60	82	21	98.6
Fundynamic/dune2themaker4j	402	2.9	14.2	38.9	14086	65.8	77.6	1013	15	58	136	69	99.7
fusion-jena/JaroWinklerSimilarity	34	13.2	30.9	395.6	1899	73.9	85.4	47	7	14	92	89	100.0
ghaffarian/progex	11	3.2	21.8	67.4	18736	49.6	62.9	160	8	76	310	34	99.8
graphstream/gs-core	149	8.5	6.4	46.1	48721	17.8	22.4	923	16	395	1463	71	100.0
Grundlefleck/ASM-NonClassloadingExtensions	110	41.4	3.4	100.5	1571	78.2	74.6	88	13	10	48	85	99.9
hageldave/ezFFT	13	40.9	1.4	15.9	1840	85.5	97.2	98	7	14	35	58	99.3
HdrHistogram/HdrHistogram	575	32.9	1.5	18.1	13086	59.8	72.2	764	13	2128	283	73	99.8
HelixNetwork/pendulum	213	25.1	7.6	164.6	23450	36.5	48.7	1296	6	10	209	84	99.6
Heroicai0101/abtest	10	2.0	5.4	8.8	488	16.2	82.6	7	6	18	7	77	100.0
hlavki/jlemmagen	1	2.6	2.9	5.0	1248	63.7	72.3	26	12	10	76	74	99.8
hoijui/Jawk	11	1.8	8.9	14.0	13113	19.7	22.4	62	13	39	457	77	100.0
houbb/segment	33	2.7	11.2	27.1	2401	83.0	92.9	88	5	125	23	83	100.0
houbb/sensitive-word	57	5.1	53.1	267.0	3575	58.8	76.6	116	5	1854	38	82	100.0
huaban/jieba-analysis	5	4.6	17.7	76.3	1265	73.7	73.5	111	12	2448	49	25	100.0
iipc/webarchive-commons	264	31.5	1.8	24.1	32799	37.3	40.3	3637	21	49	141	73	98.0
indeedeng/mpm-table	53	9.9	5.4	43.2	5497	55.9	68.6	55	8	95	137	0	98.8
indeedeng/vowpal-wabbit-java	16	79.4	5.8	377.8	2198	48.8	49.1	161	10	50	123	68	100.0
Ingenico-ePayments/connect-sdk-java	126	2.0	11.4	21.3	23551	58.1	20.9	104	9	33	105	0	100.0
intive-FDV/DynamicJasper	164	9.2	18.1	158.0	34593	62.5	73.1	766	18	249	217	0	99.6
iotaledger/cliri	227	20.3	5.2	85.8	15026	44.6	53.9	1925	9	24	159	87	98.2
iquadrat/sbb-train-scheduler	158	5.7	17.9	96.9	19591	36.0	43.3	7	7	10	223	62	100.0
iris-edu/stationxml-seed-converter	45	25.7	2.9	49.8	5214	36.9	46.4	250	9	14	96	0	100.0
ITArray/automation-java	5946	9.1	5.4	39.9	12989	40.9	47.0	837	9	26	70	66	98.9
j256/simplemagic	279	2.8	5.1	11.6	7757	87.3	93.2	389	12	210	110	84	99.5
jahlborn/jackcess	194	36.9	5.2	156.5	44785	77.6	87.4	1229	20	112	410	83	99.9
jahlborn/jackcessencrypt	7	3.1	7.5	20.2	2750	58.9	76.9	157	15	11	50	87	93.4
jarslab/babel-maven-plugin	22	8.0	16.2	121.8	1063	66.7	86.8	71	6	25	6	53	100.0
JavaMoney/jsr354-ri-bp	500	89.9	1.1	10.4	15451	53.2	66.1	233	10	9	168	0	100.0
jdbnc-observations/datasource-proxy	521	4.5	17.3	74.0	18521	63.1	60.9	764	16	646	400	93	99.7
jenkins-infra/update-center2	18	27.8	4.0	82.4	4188	0.0	0.0	1777	16	135	53	86	99.9
JetBrains/jetCheck	54	3.2	8.6	24.4	2607	75.2	88.3	47	7	78	52	85	100.0
jillesvangurp/osm2geojson	11	3.6	5.3	15.4	1569	31.7	28.0	92	12	20	62	0	99.9
jingpeicomp/id-generator	37	33.1	5.5	149.0	2055	59.0	80.6	10	7	274	58	68	100.0

		#tests	$t$	$t^{rv}/t$	$t^{rv}-t$	SLOC	$cov^s$	$cov^b$	#SHAs	age	#★	CyComp.	mut. score	Rep.
66	jnr/jnr-ffi	450	35.1	12.6	406.2	29522	47.3	47.0	1219	17	1187	247	0	100.0
67	joniles/mpxj	377	12.4	10.4	117.5	200532	42.7	44.3	3735	22	272	726	66	99.7
68	jordw/heftydb	2737	70.2	1.7	47.8	7219	52.6	77.0	338	12	163	42	74	99.8
69	jsonld-java/jsonld-java	608	8.2	10.5	77.9	8046	81.2	89.6	934	14	371	421	0	99.9
69	kamaladafrika/codice-fiscale	153	3.1	4.2	10.1	2662	81.7	93.9	99	6	10	30	89	100.0
70	kapoorlabs/kiara	439	12.5	17.3	204.0	10395	60.5	81.2	98	5	13	207	92	98.8
71	killbilling/recurly-java-library	184	3.2	10.9	31.7	23067	29.6	50.8	1059	13	49	360	0	99.8
71	kohsuke/wordnet-random-name	3	2.1	3.4	5.2	93	100.0	88.6	29	11	130	9	61	100.0
72	kolchagov/java-crud-api	107	1.8	5.2	7.5	5934	3.6	13.5	110	8	27	488	97	99.7
73	Kuangcp/NettyBook2	2	2.6	4.2	8.3	6193	0.0	0.8	10	7	10	81	0	100.0
73	kungfoo/geohash-java	67	2.5	3.6	6.5	2192	86.6	92.9	220	17	967	95	81	90.8
74	lbehnke/hierarchical-clustering-java	12	2.6	8.6	19.9	1440	30.0	37.4	106	13	139	48	78	100.0
75	leonhad/paradoxdriver	554	3.7	7.9	25.3	23821	72.0	77.8	1175	11	29	302	83	100.0
75	lexburner/consistent-hash-algorithm	2	4.7	15.0	65.3	463	53.3	37.2	3	6	45	11	21	100.0
76	LiveRamp/HyperMinHash-java	22	83.8	2.4	118.6	2961	57.7	57.0	48	7	51	48	70	100.0
77	lukfor/pgs-calc	69	33.1	5.6	152.7	7454	50.4	57.8	348	5	20	110	59	100.0
77	MagicTheGathering/mtg-sdk-java	20	9.2	7.2	56.7	933	52.9	39.2	128	9	65	93	76	99.7
78	mangstadt/biweekly	1131	3.8	16.7	59.3	50960	80.2	83.4	907	12	332	151	89	99.7
79	Mastercard/oauth1-signer-java	39	4.8	8.2	34.2	1147	82.7	87.1	181	7	42	42	75	99.9
79	MezereonXP/AnomalyDetectTool	31	14.7	3.4	35.8	1713	81.1	67.2	118	7	86	30	37	100.0
80	mimmo/Mallet	184	16.9	69.9	1164.9	77199	0.0	0.0	759	17	1003	312	67	100.0
81	moenik-science/geogrid	8	16.2	5.5	72.2	1208	49.0	62.3	161	8	46	122	75	100.0
81	MottoX/TAOMP	20	13.9	1.8	10.6	1404	0.0	0.0	37	8	49	18	85	100.0
82	mvel/mvel	1234	9.3	19.2	168.8	46156	62.4	67.0	3150	18	1024	784	0	99.9
83	myui/btree4j	7	44.3	2.7	75.5	7684	23.8	37.2	49	8	201	210	78	100.0
83	NLPchina/ansj_seg	96	9.0	4.3	30.0	14750	59.1	68.2	707	13	6409	106	53	99.8
84	nothingax/micro-DB	30	7.6	2.2	9.1	5466	61.0	75.2	176	4	122	126	87	100.0
85	octavian-h/time-series-math	160	13.2	9.9	117.0	4836	85.5	95.8	229	10	14	56	83	58.1
85	OnlineCodex/OnlineCodex	67	5.0	6.5	27.5	58298	0.0	0.1	393	7	20	135	100	91.2
86	opengeospatial/ets-ogcapi-features10	131	27.0	5.3	114.6	7490	39.8	53.6	451	7	15	129	0	98.9
87	osglworks/java-tool	642	3.2	12.4	36.9	44949	35.6	41.2	767	12	52	941	0	99.8
87	OWASP/url-classifier	65	8.6	6.3	45.1	6214	82.2	89.9	66	8	20	108	82	99.9
88	pagehelper/Mybatis-PageHelper	139	5.5	12.5	63.6	8515	64.3	63.1	681	11	11993	104	74	98.7
89	palatable/lambda	1291	13.4	15.5	194.0	30194	76.9	87.6	707	11	856	40	98	99.2
89	palindromicity/simple-syslog	48	2.1	15.8	30.9	10592	39.6	47.3	57	7	16	102	36	100.0
90	paypal/Gibberish-Detector-Java	6	2.0	5.4	8.8	290	85.3	75.2	8	9	26	28	100	98.8
91	PeterisP/morphology	325	11.4	32.4	356.4	12591	65.2	62.4	602	13	30	617	27	100.0
91	pizihao/crow	48	24.1	1.4	8.9	5064	54.5	65.1	17	3	12	36	71	99.9
92	printing3d/javascad	1550	11.8	3.5	29.7	11501	87.5	90.9	78	11	29	75	0	99.9
93	Progether/JAdventure	74	1.5	10.5	14.3	4943	36.2	51.4	767	13	304	81	41	100.0
93	qoomon/banking-swift-messages-java	99	2.3	24.0	52.7	4926	66.0	84.1	306	9	33	31	75	99.8
94	radkovo/Pdf2Dom	24	3.0	14.0	38.6	2711	59.7	74.6	202	14	168	125	56	99.2
95	reckart/tt4j	25	6.5	2.6	10.5	2361	30.9	40.7	135	16	16	86	63	48.8
95	renfei/ik-analyzer	5	8.2	11.2	84.1	3400	29.8	38.6	11	3	15	147	0	100.0
96	robert-bor/aho-corasick	94	2.7	5.0	10.9	2190	89.7	92.6	108	11	856	55	89	99.5
97	rohanpadhye/vasco	3	7.2	38.2	266.8	2940	46.9	61.0	99	12	82	155	0	99.5
97	romix/java-concurrent-hash-trie-map	21	4.8	7.9	33.2	2386	67.8	77.6	67	13	150	140	85	99.3
98	rythmengine/rythmengine	253	20.2	4.8	77.7	25069	48.1	61.7	708	14	251	344	73	99.8
99	sangupta/bloomfilter	5	12.1	2.3	16.0	1010	24.8	41.8	50	11	55	46	67	100.0
99	sangupta/murmur	15	4.7	2.8	8.6	544	97.9	97.8	57	11	71	29	100	41.4
100	Sayi/swagger-diff	19	1.9	18.4	33.6	1914	81.0	93.4	84	9	270	67	69	100.0
101	sbesada/java.math.expression.parser	10	10.9	26.9	282.0	1850	60.2	67.7	64	10	35	138	75	100.0
101	searls/jasmine-maven-plugin	69	8.3	10.9	81.9	4104	58.4	74.0	823	15	290	33	0	99.7
102	serg472/htmlcompressor	26	2.0	27.0	53.2	3240	36.2	36.8	96	16	39	227	70	98.3
103	simonngl/netdata-java-orchestrator	74	3.9	24.7	91.8	2334	54.9	53.0	123	8	26	19	89	100.0
103	simplenlg/simplenlg	214	6.1	13.9	78.2	13469	65.4	74.2	115	11	802	154	93	100.0
104	solita/functional-utils	48	1.8	9.5	15.3	28262	26.9	12.5	308	13	22	293	81	90.7
105	sonatype/heuristic-version	175	2.4	10.3	22.2	3694	28.3	42.0	116	10	0	91	0	99.9
105	spullara/java-future-jdk8	23	103.4	48.8	4940.8	1249	21.6	52.2	82	13	19	10	76	100.0
106	StarlangSoftware/TurkishDeascifier	5	3.0	4.7	11.0	417	85.4	88.6	92	7	7	27	87	99.7
107	StarlangSoftware/TurkishMorphologicalAnalysis	71	42.3	3.1	90.7	4616	58.8	65.7	241	7	17	346	79	100.0
107	StarlangSoftware/TurkishMorphologicalDisambiguation	4	39.7	10.5	377.7	2786	48.9	38.9	147	7	8	314	49	100.0
108	StarlangSoftware/TurkishPropBank	10	2.1	21.3	41.8	600	23.6	44.9	74	7	6	20	97	100.0
109	StarlangSoftware/TurkishSentiNet	7	2.6	22.7	56.5	312	84.2	78.8	58	6	11	21	95	100.0
109	StarlangSoftware/TurkishSpellChecker	9	29.9	3.7	80.5	1381	86.7	92.6	172	7	10	128	87	99.9
110	stefanbirkner/fake-sftp-server-rule	60	27.2	2.2	31.2	1397	96.4	88.7	43	9	40	0	100	96.0
111	supercargo/guice-persist-jooq	8	2.3	24.0	52.5	473	65.9	79.2	69	11	22	21	62	98.8
111	Sweetiee-yi/Jaba	6	5.7	19.3	105.0	808	77.5	86.5	6	7	97	28	71	100.0
112	tdebatty/java-LSH	3	2.1	2.5	3.2	696	29.9	27.6	84	10	290	39	50	93.4
113	tdunning/bandit-ranking	10	5.1	5.7	24.1	1051	26.0	31.8	15	12	51	37	75	100.0
114	theborakompanioni/thymeleaf-extras-shiro	79	2.1	15.9	31.5	2392	84.8	92.1	114	12	297	49	79	90.8
114	thegedge/java-radix-tree	10	1.6	6.6	8.9	625	63.8	71.2	3	13	31	65	91	99.9
115	thomasmueller/minperf	17	5.2	4.7	19.5	13232	40.3	39.3	209	9	155	77	88	100.0
115	thomasmueller/tinyStats	27	10.3	3.0	20.4	3073	87.9	89.4	47	6	13	37	77	100.0
116	ThoughtWire/hazelcast-locks	54	60.8	1.5	32.3	2386	61.3	67.1	44	11	23	41	99	95.3
117	ThreeTen/threetenbp	17874	5.2	6.9	30.5	51311	58.0	66.6	3257	18	548	262	0	100.0
117	tkutcher/jgrade	117	3.6	2.4	4.9	1736	59.4	62.2	142	6	23	37	0	100.0
118	tomwhite/set-game	19	142.8	1.1	21.0	2669	44.9	57.2	160	9	25	33	75	98.3
119	twitter/sbf	35	3.0	5.8	14.3	5977	65.1	70.0	3	5	157	202	63	97.2
119	uwolfer/gerrit-rest-java-client	345	3.9	12.4	44.6	16904	37.8	58.1	774	12	159	106	100	95.3
120	vangj/jbayes	51	1.8	15.1	25.0	5389	80.5	90.0	163	9	18	45	80	99.9
121	wiqer/ef-redis	7	4.3	16.8	68.6	6762	4.8	4.6	36	4	102	127	100	100.0
122	xcsp3team/XCSP3-Java-Tools	78	3.4	4.9	13.2	16914	20.8	27.0	361	9	19	158	100	100.0
122	xspect/xspec-maven-plugin-1	80	7.2	31.7	220.1	3843	42.3	57.9	245	12	5	95	63	100.0
123	yomoron/hashids-java	17	2.1	7.6	14.1	447	68.5	81.3	113	11	1009	65	87	100.0
123	ysc/word	43	21.3	17.1	342.4	10000	34.0	32.0	919	11	1786	83	89	100.0
124	yurelle/Base45Encoder	7	3.0	3.7	8.2	357	90.6	95.7	6	4	10	14	100	53.6
125	zencoder/zencoder-java	8	28.1	1.3	7.9	3646	60.0	54.4	76	12	10	268	74	96.2
125	zhaolihe/useragent-parser	43	1.6	13.6	20.4	2363	49.0	57.3	96	8	10	44	62	93.5
126	zhkl0228/TraceReader	3	4.5	6.4	24.0	1018	57.0	61.2	29	8	15	77	0	100.0
127	zhoujianling/PointCloudUtilities	70	5.5	10.3	51.3	6587	72.1	79.2	206	7	34	118	71	99.4

Table 2. Summary statistics on 1,233 projects that we evaluate (group 1): no. of test methods (#tests), test time w/o RV in seconds ( $t$ ), relative JAVAMOP overhead ( $t^{rv}/t$ ), absolute JAVAMOP overhead (s,  $t^{rv}-t$ ), lines of code (SLOC), % statement coverage ( $cov^s$ ), % branch coverage ( $cov^b$ ), no. of GitHub commits (#SHAs), years since 1st commit (age), no. of stars (#★), max. total cyclomatic complexity (CyComp.), mutation score (mut. score), and ratio of traces repetitiveness (Rep).

	#tests	$t$	$t^{rv}/t$	$t^{rv}-t$	SLOC	$cov^s$	$cov^b$	#SHAs	age	#★	CyComp.	mut. score	Rep.
Mean	92.3	4.2	8.0	19.5	5,545.1	53.3	44.9	182.0	9.8	145.2	102.4	75.2	80.1
Med	20	1.8	5.1	9.4	2,032	57.7	46.6	87	10	28	51.0	82	91.4
Min	1	1.3	0.9	-5.1	21	0.0	0.0	1	1	0	1	0	0.0
Max	17,101	325.5	60.7	565.0	$2.4 \times 10^5$	100.0	100.0	7,790	24	20,198	4,319	100	100.0
Sum	$1.1 \times 10^5$	5,150.3	n/a	n/a	$6.8 \times 10^6$	n/a	n/a	n/a	n/a	$1.8 \times 10^5$	n/a	n/a	n/a

Table 3. Summary statistics on 20 projects that we evaluate (group 2): no. of test methods (#tests), test time w/o RV in seconds ( $t$ ), relative JAVAMOP overhead ( $t^{rv}/t$ ), absolute JAVAMOP overhead (s,  $t^{rv}-t$ ), lines of code (SLOC), % statement coverage ( $cov^s$ ), % branch coverage ( $cov^b$ ), no. of GitHub commits (#SHAs), years since 1st commit (age), no. of stars (#★), max. total cyclomatic complexity (CyComp.), mutation score (mut. score), and ratio of traces repetitiveness (Rep).

	#tests	$t$	$t^{rv}/t$	$t^{rv}-t$	SLOC	$cov^s$	$cov^b$	#SHAs	age	#★	CyComp.	mut. score	Rep.
Mean	96.7	20.4	7.3	35.3	5,867.7	57.0	47.5	278.5	10.6	156.1	143.3	75.4	92.1
Med	47.0	4.5	5.0	28.6	5,353.5	62.2	47.8	158.0	11.0	46.5	92.5	80.0	93.7
Min	1	1.5	0.5	-15.6	373	14.3	0.5	10	4	8	8	26	75.0
Max	774	125.5	21.3	123.6	16,405	82.4	73.8	760	20	868	888	100	99.6
Sum	1,934	407.4	n/a	n/a	$1.2 \times 10^5$	n/a	n/a	n/a	n/a	3,121	n/a	n/a	n/a

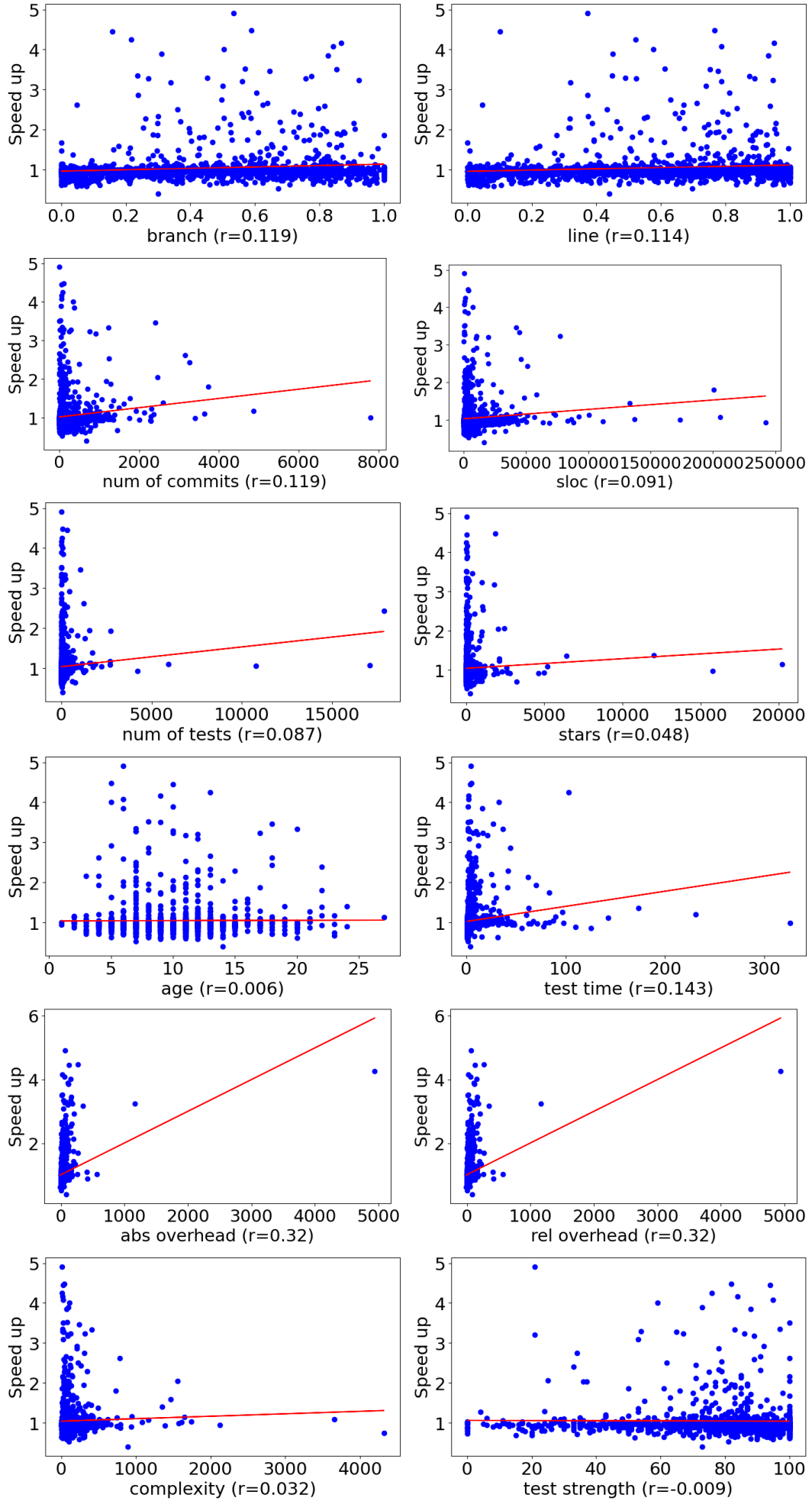
Table 4. Summary statistics on 1,432 projects that we use in our formative study: no. of test methods (#tests), test time w/o RV in seconds ( $t$ ), relative JAVAMOP overhead ( $t^{rv}/t$ ), absolute JAVAMOP overhead (s,  $t^{rv}-t$ ), lines of code (SLOC), % statement coverage ( $cov^s$ ), % branch coverage ( $cov^b$ ), no. of GitHub commits (#SHAs), years since 1st commit (age), no. of stars (#★), max. total cyclomatic complexity (CyComp.), mutation score (mut. score), and ratio of traces repetitiveness (Rep).

	#tests	$t$	$t^{rv}/t$	$t^{rv}-t$	SLOC	$cov^s$	$cov^b$	#SHAs	age	#★	CyComp.	mut. score	Rep.
Mean	124.5	6.9	8.6	43.5	6,534.5	54.7	46.5	221.0	9.9	164.5	109.8	75.3	82.3
Med	22.0	1.9	5.4	11.4	2,298.0	59.7	49.2	96.0	10.0	29.5	54.0	82	93.1
Min	1	1.3	0.5	-15.6	21	0.0	0.0	1	1	0	1	0	0.0
Max	17,874	1,449.7	107.3	17,223.0	$2.4 \times 10^5$	100.0	100.0	7,790	27	20,198	4,319	100	100.0
Sum	$1.8 \times 10^5$	9,946.1	n/a	n/a	$9.4 \times 10^6$	n/a	n/a	n/a	n/a	$2.4 \times 10^5$	n/a	n/a	n/a

Table 5. LAZYMOP<sup>e</sup> vs JAVAMOP and LAZYMOP during evolution: no. of GitHub commits (#SHAs), test time without RV in seconds ( $t$ ), JAVAMOP time in seconds ( $t^{rv}$ ), LAZYMOP time in seconds ( $t^{lazy}$ ), LAZYMOP<sup>e</sup> time in seconds ( $t^{imm}$ ), time to run  $ps_1^c$  ( $ps_1^c$ ), time after combining  $ps_1^c$  with LAZYMOP<sup>e</sup> ( $ps_1^{c+imm}$ ), time to run  $ps_3^{cl}$  ( $ps_3^{cl}$ ), time after combining  $ps_3^{cl}$  with LAZYMOP<sup>e</sup> ( $ps_3^{cl+imm}$ ). **Bold** times show which technique is faster.

ID	#SHAs	$t$	$t^{rv}$	$t^{lazy}$	$t^{imm}$	$ps_1^c$	$ps_1^{c+imm}$	$ps_3^{cl}$	$ps_3^{cl+imm}$
P1	6	5.9	<b>70.7</b>	84.8	89.5	<b>31.1</b>	31.9	<b>11.4</b>	13.5
P2	50	178.3	863	<b>487.8</b>	496.6	729.3	<b>493.0</b>	456.3	<b>376.9</b>
P4	6	40.6	229	<b>80</b>	<b>79.4</b>	226.9	<b>73.9</b>	203.1	<b>69.3</b>
P5	13	21.6	633.7	312.1	<b>297.7</b>	492	<b>237.7</b>	113.1	<b>72.3</b>
P8	31	82.6	9929.4	8481	<b>5336.4</b>	11071.1	<b>5343.2</b>	8134.2	<b>3188.2</b>
P9	18	201.7	1815.1	2269.9	<b>1701.4</b>	1823.8	<b>1500.4</b>	<b>966.5</b>	1020.5
P10	50	124.4	<b>683.5</b>	1437.2	1288.1	<b>538.5</b>	1060	<b>511.3</b>	1118.6
P11	6	17.0	434	489.8	<b>354.6</b>	389.3	<b>261.9</b>	235.5	<b>188.6</b>
P13	50	250.9	4201.8	4360.6	<b>2802.2</b>	3699.2	<b>2273.1</b>	2329.9	<b>1407.9</b>
P15	26	114.8	1432.6	1591.4	<b>1375.9</b>	1265.2	<b>1081.1</b>	497.9	<b>465.8</b>
P16	27	111.6	3336.5	3454	<b>1022.1</b>	2854.7	<b>790.4</b>	1373.1	<b>296.7</b>
P18	23	251.9	<b>2687.0</b>	9114.6	8712.6	<b>2618.9</b>	7910	<b>906.6</b>	1273.6
P20	13	279.3	613.9	637.7	<b>466.7</b>	492.2	<b>451.0</b>	341.8	<b>319.3</b>
P22	44	136.6	5654.8	5189.2	<b>1605.0</b>	4554.2	<b>1499.3</b>	3372.6	<b>1150.3</b>
P23	17	90.1	3016.4	3081	<b>1491.4</b>	3389.8	<b>1446.5</b>	1999.3	<b>1135.4</b>
P27	6	263.2	539.2	592.3	<b>313.7</b>	343.6	<b>247.2</b>	312.7	<b>210.9</b>
P29	11	17.4	<b>94.4</b>	119.3	118.6	<b>63.9</b>	88.6	<b>52.5</b>	86
P31	9	74.2	<b>318.4</b>	465.5	334.3	286.3	<b>272.1</b>	<b>215.0</b>	259.1
P32	22	393.4	1092.1	1033.6	<b>960.6</b>	764.2	<b>652.6</b>	630.1	<b>589.4</b>
P33	25	77.3	<b>954.5</b>	1521.9	1542.9	<b>336.9</b>	650.7	<b>159.7</b>	222.9
P36	50	86.4	<b>741.2</b>	1388.7	1770.5	<b>1473.2</b>	2039.6	<b>1360.7</b>	1813.4
P38	13	320.9	7107.2	7446.1	<b>6197.0</b>	7808.2	<b>6135.7</b>	4934.6	<b>4415.7</b>
P39	4	17.9	<b>66.2</b>	82.5	72.6	<b>74.5</b>	77.9	<b>64.4</b>	67.5
P40	5	9.8	128	165.7	<b>93.9</b>	138.8	<b>94.6</b>	<b>80.6</b>	91.4
P41	27	409.5	4499.6	5102.7	<b>4349.2</b>	4720.7	<b>4111.3</b>	<b>2411.9</b>	2808.2
P43	9	35.2	<b>372.7</b>	600.8	526.8	214.2	<b>149.1</b>	205	<b>198.0</b>
P44	50	240.6	2729.6	4668.5	<b>2716.0</b>	2075.9	<b>2039.9</b>	<b>861.2</b>	1169.8
P48	33	823.5	4029.5	3976.6	<b>3564.4</b>	4309.1	<b>3425.0</b>	2366.2	<b>2109.0</b>
P49	29	76.9	<b>1186.0</b>	1583.8	1193.7	<b>850.7</b>	875.6	<b>460.4</b>	516.1
P51	25	70.6	638.2	747.8	<b>621.4</b>	566.9	<b>549.1</b>	553.7	<b>497.0</b>
P52	22	84.6	1056.9	1023.9	<b>1008.5</b>	976.2	<b>949.3</b>	<b>619.9</b>	634.8
P53	19	38.3	<b>138.7</b>	160.7	150.3	164.7	<b>161.0</b>	<b>111.3</b>	132.7
P55	31	816.1	5495.6	4644.4	<b>3281.0</b>	3151.6	<b>2543.4</b>	1888.9	<b>1837.6</b>
P57	11	769.6	15359.1	<b>11229.5</b>	11516.8	10917	<b>8379.0</b>	2348.1	<b>2347.7</b>
P60	16	51.1	<b>258.7</b>	494.9	515.9	<b>131.1</b>	209.4	<b>124.5</b>	174.4
P63	15	30.6	<b>86.5</b>	115.6	110.3	<b>94.3</b>	119.6	<b>77.5</b>	97.7
P64	23	41.5	<b>130.0</b>	152.4	156.6	<b>122.4</b>	140.8	<b>114.1</b>	130.8
P66	23	312.0	<b>1123.8</b>	1273	1251.6	<b>1020.9</b>	1109.7	<b>784.7</b>	839
P69	9	14.3	108.9	<b>80.7</b>	98	88.6	<b>88.5</b>	79.1	<b>71.1</b>
P70	19	42.8	<b>291.7</b>	378	388.7	<b>219.0</b>	276.7	<b>206.7</b>	250.4
P71	16	107.4	<b>673.8</b>	853.2	834.6	<b>516.6</b>	635.2	<b>236.3</b>	266.7
P73	50	162.8	1305.4	1478.2	<b>1093.1</b>	1336.4	<b>990.4</b>	1160.8	<b>832.1</b>
P75	18	163.1	<b>1511.1</b>	1873	2222.9	<b>1377.7</b>	1872.2	<b>667.7</b>	984.1
P78	31	64.4	<b>229.8</b>	386.1	423.3	<b>213.3</b>	352	<b>174.1</b>	299.8
P79	6	9.5	<b>33.2</b>	40.9	34.3	<b>27.6</b>	30.5	<b>23.6</b>	25.1
P80	21	574.3	2393.7	2494.8	<b>1361.8</b>	1363	<b>1110.9</b>	<b>1012.0</b>	1069
P81	9	20.5	<b>51.2</b>	66.5	69.8	<b>60.8</b>	71.4	<b>57.7</b>	62.3
P84	16	74.4	<b>561.0</b>	718.2	835.9	<b>456.9</b>	607.8	<b>134.3</b>	173.1
P85	11	55.1	<b>247.5</b>	534	386.9	<b>137.5</b>	185.5	<b>124.5</b>	168.1
P87	50	176.9	<b>1308.3</b>	1961.2	2166.5	<b>1408.5</b>	2095.7	<b>421.3</b>	481.7
P93	14	364.7	<b>1547.6</b>	1799.9	1902.8	<b>1366.3</b>	1627	<b>587.5</b>	658.5
P94	34	218.6	<b>925.7</b>	1055.3	978.7	<b>587.3</b>	656.2	<b>456.4</b>	487.5
P95	11	20.2	<b>542.2</b>	674.9	823.2	<b>481.6</b>	687.7	<b>53.3</b>	71.3
P96	50	259.9	4058.6	4886.9	<b>3774.4</b>	3828.3	<b>3385.9</b>	<b>927.7</b>	1022.5
P97	7	14.3	<b>54.0</b>	67.1	69.6	<b>47.4</b>	52.9	<b>45.6</b>	49.1
P100	19	61.9	<b>298.2</b>	320	323.1	<b>273.3</b>	308.8	<b>214.0</b>	237.5
P101	39	110.5	<b>849.8</b>	1211.6	1017.9	<b>456.5</b>	658.5	<b>351.4</b>	509.4
P103	42	223.9	<b>2538.2</b>	2896.2	3522.7	<b>2176.0</b>	2781.7	<b>747.2</b>	921.4
P104	7	11.7	<b>80.2</b>	127.2	136.1	<b>95.7</b>	145.9	<b>76.1</b>	112.6
P105	18	160.8	638.7	908.6	<b>495.4</b>	<b>430.6</b>	479.4	<b>345.5</b>	388.5
P106	18	299.6	<b>370.1</b>	438.5	443.3	<b>344.8</b>	391.9	<b>337.7</b>	367.2
P111	24	87.3	<b>416.3</b>	457.4	505.6	<b>403.4</b>	459.4	<b>292.1</b>	314.4
P114	49	109.3	<b>359.6</b>	410.7	441.6	<b>334.2</b>	416.8	<b>285.7</b>	322.3
P115	6	10.3	<b>188.1</b>	376.3	503.4	<b>175.7</b>	456	<b>91.7</b>	221.4
P116	50	841.6	<b>6573.8</b>	9560.3	10862.7	<b>6176.8</b>	9857	<b>2080.8</b>	3962.7
P117	4	19.1	<b>37.9</b>	53.6	54	<b>37.2</b>	46.4	<b>33.4</b>	39
P119	10	112.2	<b>486.4</b>	511.2	576.6	<b>354.6</b>	438.4	<b>305.7</b>	343.6
P123	50	159.6	<b>2047.0</b>	2228.1	2704.4	<b>1872.1</b>	2365.9	<b>948.4</b>	1155.2
P126	50	92.5	<b>1145.3</b>	1250.1	1336.7	<b>684.4</b>	834.7	<b>294.3</b>	371.9
P127	13	1733.5	1947.7	1913.1	<b>1900.0</b>	1966	<b>1913.8</b>	1918.2	<b>1868.0</b>
P128	13	499.0	774.2	<b>728.6</b>	751.6	698	<b>689.0</b>	<b>553.8</b>	554.8
P129	50	202.5	<b>3101.4</b>	3338	3328.8	<b>2109.9</b>	2329.4	<b>880.1</b>	1044.8
P130	36	103.2	1896.3	<b>1826.2</b>	2211.7	1248.6	<b>1230.9</b>	1247.3	<b>1181.7</b>
P135	50	424.2	<b>737.4</b>	1309.1	1211.7	<b>613.3</b>	1076.2	<b>545.2</b>	797
P136	19	20.6	<b>88.0</b>	108.2	125.1	<b>91.3</b>	112.2	<b>89.0</b>	107.9
P137	8	24.0	<b>302.4</b>	344.3	336.3	295.5	<b>281.0</b>	232.6	<b>195.8</b>
P138	50	245.6	<b>1182.4</b>	1347.4	1475.2	<b>1049.3</b>	1237.3	<b>704.7</b>	820.8
P143	7	540.7	601.1	626.6	<b>429.0</b>	<b>320.1</b>	332.1	<b>298.5</b>	305.1
P144	30	50.9	<b>167.6</b>	329.1	355.2	<b>192.1</b>	301.3	<b>163.4</b>	266.7
P145	14	55.8	<b>656.1</b>	698.6	896.2	<b>630.9</b>	798.9	<b>412.6</b>	502.4
P146	50	101.8	<b>287.6</b>	379.3	395.7	<b>255.8</b>	286.7	<b>207.7</b>	229.3
P148	34	88.0	<b>1738.6</b>	1766.5	2071.3	<b>1349.1</b>	1398.6	<b>1249.8</b>	1261.9
P149	12	219.0	<b>330.6</b>	331.5	356.5	339.9	<b>334.8</b>	<b>243.3</b>	271.3
P151	6	15.0	<b>207.3</b>	263	287	<b>210.4</b>	257.7	<b>115.6</b>	144.8
P152	11	1533.0	<b>1743.1</b>	1792.1	1770.6	1773.7	<b>1750.3</b>	<b>1562.5</b>	1582.4
P154	14	103.5	<b>1039.7</b>	1104.6	1285.5	<b>1012.6</b>	1149.3	<b>786.1</b>	927.1
P155	41	378.9	<b>2309.1</b>	2446.5	2821.4	<b>1810.8</b>	2105.9	<b>925.7</b>	1056.6
P157	5	15.8	<b>44.0</b>	370.6	388.4	<b>34.7</b>	265.8	<b>33.2</b>	265.1
P159	9	18.0	<b>466.4</b>	480.9	545	<b>316.3</b>	376.5	<b>99.8</b>	129

ID	#SHAs	$t$	$t^{rv}$	$t^{lazy}$	$t^{imm}$	$ps_1^c$	$ps_1^{c+imm}$	$ps_3^{c\ell}$	$ps_3^{c\ell+imm}$
P160	43	151.6	<b>1194.6</b>	1346.9	1575.4	<b>1140.8</b>	1379.1	<b>625.0</b>	743.5
P161	50	199.4	<b>2089.3</b>	2640.3	4671.4	<b>3418.6</b>	4499	<b>3218.8</b>	4244
P163	4	26.8	1450.5	1471.3	<b>527.2</b>	1631.3	<b>515.0</b>	759.1	<b>318.8</b>
P164	21	47.5	4473.8	7248.3	<b>1877.5</b>	4952	<b>1801.4</b>	<b>524.2</b>	562.2
P166	10	49.2	1406.6	1050.7	<b>950.2</b>	889.1	<b>618.7</b>	902.7	<b>613.5</b>
P167	4	160.4	930.8	1063.4	<b>460.6</b>	522.4	<b>449.5</b>	391.9	<b>356.4</b>
P168	12	15.8	<b>253.2</b>	305.1	279.1	<b>260.2</b>	269	<b>231.8</b>	239.7
P169	18	444.3	8362.1	8978.8	<b>5809.2</b>	8536	<b>5635.6</b>	1995.3	<b>1936.1</b>
P170	5	38.2	181.5	<b>171.2</b>	172.7	210.8	<b>181.0</b>	218.2	<b>181.0</b>
P171	10	16.0	<b>143.1</b>	155.3	170.9	<b>119.5</b>	147.8	<b>62.7</b>	74.2
P172	26	35.0	<b>255.1</b>	308.2	340.7	<b>239.7</b>	324.1	<b>124.3</b>	153.9
P173	34	441.8	13778.8	12752.8	<b>6683.5</b>	14714.1	<b>6368.4</b>	5507.2	<b>3515.7</b>
P174	16	52.1	<b>118.5</b>	141	155.7	<b>120.6</b>	151.1	<b>100.9</b>	118.1
P178	50	101.5	<b>1146.3</b>	1389.3	1748.6	<b>1044.5</b>	1386.4	<b>432.2</b>	552.3
P179	10	14.5	<b>195.9</b>	218.6	245.7	<b>196.9</b>	229.6	<b>117.1</b>	140.4





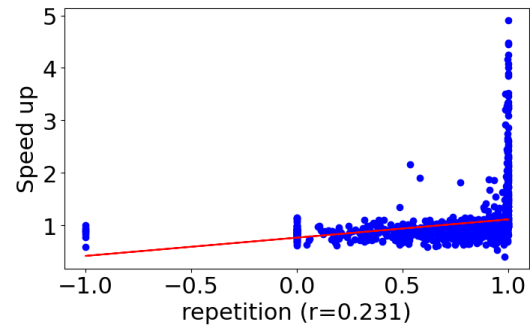
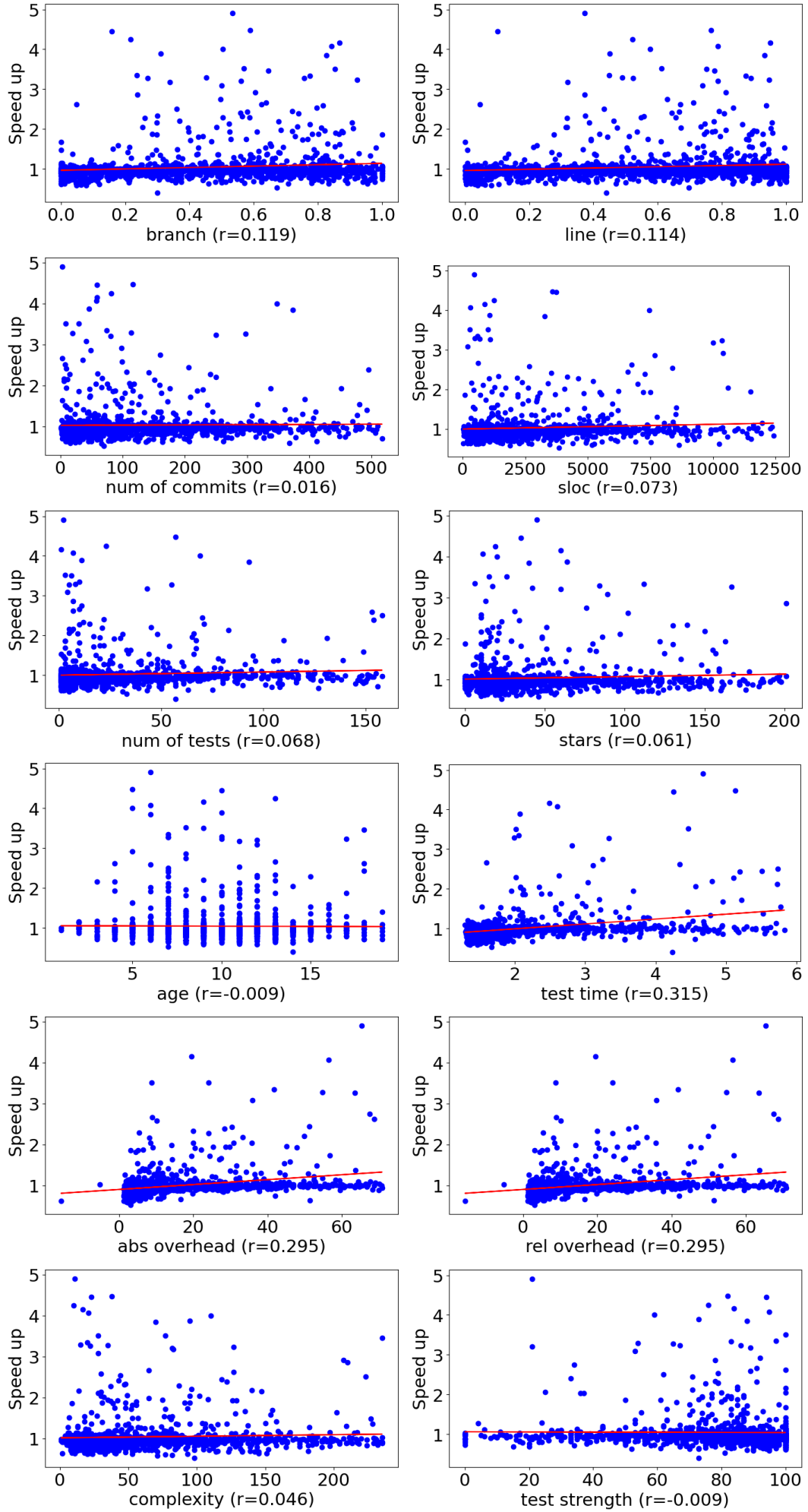


Fig. 3. Correlation between the ratio of TRACE MOP to LAZY MOP time and various characteristics (with outliers).





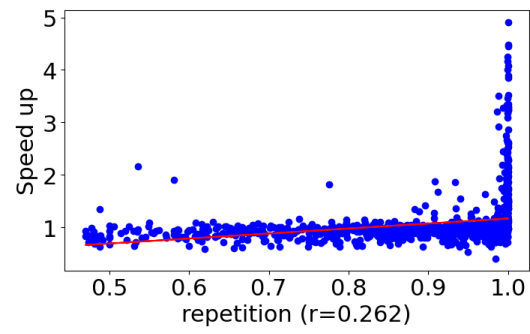
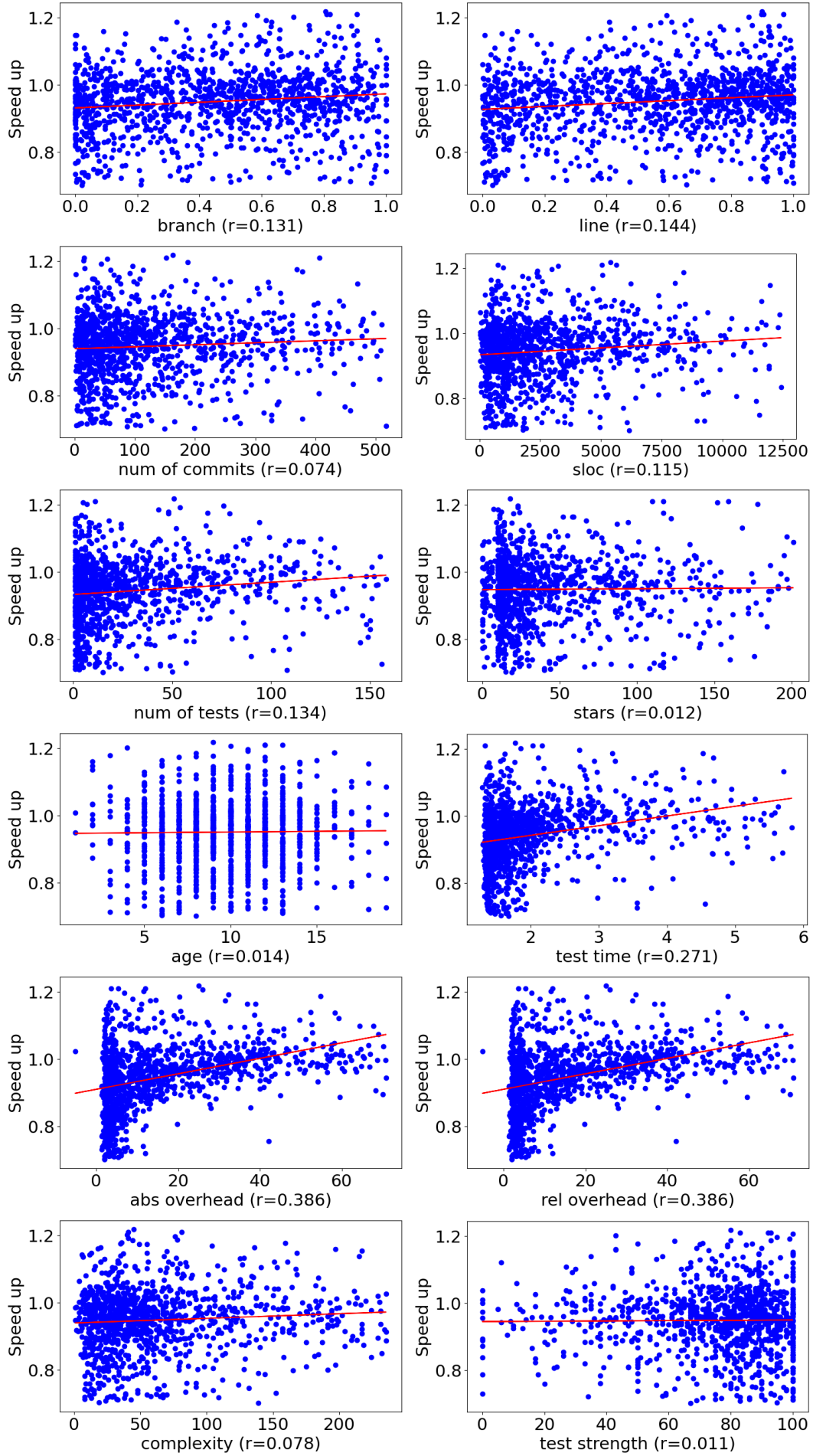


Fig. 5. Correlation between the ratio of TRACEMOP to LAZYMOP time and various characteristics (without outliers in X axis).



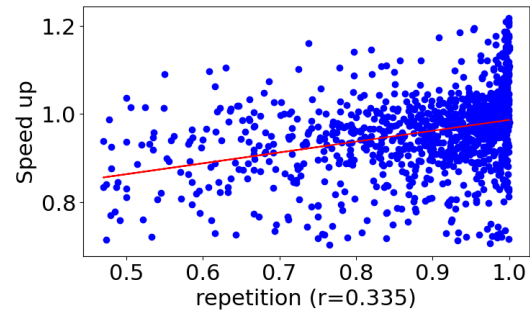


Fig. 7. Correlation between the ratio of TRACEMOP to LAZYMOP time and various characteristics (without any outliers).

Table 6. Summary statistics from our IMM formative study showing number of methods with at least one event, number of IMM, number of IMM involves just one spec, number of IMM involves less than five specs, the maximum number of specs in an IMM, number of traces, and the number of unique traces. Table 8 shows the raw results.

	# methods	# IMM methods	# IMM with 1 spec	# IMM with < 5 specs	IMM max specs	# traces	# unique traces
Mean	181.7	76.0	20.1	50.5	4.8	5184849.7	3574.5
Med	71.0	29.0	8.0	18.0	5.0	7164.0	359.0
Min	1.0	0.0	0.0	0.0	0.0	1.0	1.0
Max	3942.0	1697.0	588.0	1499.0	12.0	656003744.0	1084816.0
Sum	260144.0	108815.0	28746.0	72250.0	6924.0	7424704750.0	5118653.0

Table 7. Summary statistics from our IMM formative study showing number of traces in IMM, number of unique traces in IMM, number of intra-procedural repeatedly monitored identical traces, number of inter-procedural repeatedly monitored identical traces, number of IMM in project's code, number of IMM in test classes, and number of IMM in third-party libraries. Table 9 shows the raw results.

	# traces in IMM	# unique traces in IMM	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMM in CUT	IMM in test	IMM in library
Mean	4687425.3	1899.0	4977485.0	205142.1	18.2	4.8	53.0
Med	5931.0	180.0	6448.0	114.0	5.0	1.0	10.0
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	656003612.0	1084238.0	656003602.0	56970848.0	1028.0	366.0	1696.0
Sum	6712393057.0	2719371.0	7127758575.0	293763490.0	26044.0	6901.0	75870.0

**IMMs Formative Study.** We conduct the study using the same 1,432 projects as in our evaluation. Table 4 shows summary characteristics of these 1,432 projects. **Evaluation Subjects** in paper's §4 describes how to select these projects.

Table 8. Raw results from our IMMs formative study showing number of methods with at least one event, number of IMMs, number of IMMs involves just one spec, number of IMMs involves less than five specs, the maximum number of specs in an IMM, number of traces, and the number of unique traces.

project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
2captcha-2captcha-java	341	95	6	80	6	11336	981
3redronin-mu-server	1746	570	170	358	8	1961129	53806
520github-fw-parallel-task	5	3	2	1	2	34	6
520github-fw-perf-test	6	6	1	5	2	42	11
520github-fw-statemachine	4	1	0	1	2	12	8
6tail-lunar-java	156	78	5	69	6	135574	688
6tail-tyme4j	43	28	6	20	5	28017	4101
AAA-AA-basic-tools	13	5	1	4	2	1000090	40
abahgat-suffixtree	17	8	0	4	5	564354	840
AccelerationNet-access2csv	41	34	5	25	6	6281	243
acegi-xml-format-maven-plugin	250	112	11	91	6	15866	1007
AdamBien-jwtlenizr	70	15	2	12	5	3860	195
AdamBien-xplr	17	8	2	6	3	608	63
adminfaces-admin-persistence	1359	578	132	405	7	948946	12762
adobe-commerce-cif-magento-graphql	110	23	4	19	3	41777	596
adobe-htl-tck	27	14	5	8	5	420	71
aehrc-ontology-core	219	92	36	45	8	6327	1040
aelstad-keccakj	34	19	7	10	5	10370643	134
afranken-jmeter-analysis-maven-plugin	190	85	36	44	9	8702	669
Afrozaar-wp-api-v2-client-java	251	99	37	57	6	6021	1111
afrunt-jach	63	38	8	27	6	71378	287
agarciaodom-xeger	25	23	6	17	4	15784919	1687
agentgt-jatl	26	12	4	8	4	1307	219
agiledon-payroll-ddd	204	108	3	92	6	23294	896
AgNO3-jcifs-ng	71	21	8	13	4	919	166
agonalcal-agonalcal-application-petstore-ee7	223	121	29	80	6	126841	1282
agrison-redux4j	61	16	9	7	3	357	121
aidhog-blable	43	31	5	20	7	4244	264
ainslec-picocog	7	2	1	1	3	43	34
ajantis-java-crdt	11	10	2	7	5	340	60
akamai-NetStorageKit-Java	53	10	1	7	7	641	183
AlanDelip-SpringBoot-Template	240	103	74	29	4	14560	1126
albfernandez-itext2	1064	380	85	270	7	2314867	16127
albfernandez-javadb	69	25	5	20	4	137584	271
aled-isi	108	35	13	21	6	581977	1280
aleksandr-m-gitflow-maven-plugin	12	8	3	5	4	458	28
alex2chen-j-statemachine	0	0	0	0	0	0	0
alexcojocar-elasticsearch-maven-plugin	284	132	16	104	6	299273	2115
alexec-docker-maven-plugin	69	25	10	12	5	17642	186
alexheretic-dynamics	103	49	11	36	6	50449	1997
AlexP11223-JavaSpringMvcBlog	70	12	5	6	5	278	146
alexr007-ultimate8	2	0	0	0	0	4	4
alfasoftware-soapstone	1058	526	130	351	7	1558921	9570
alibaba-compileflow	207	95	3	83	6	59117	985
alibaba-rsocket-broker-rsocket-broker-gateway-m...	28	4	1	3	2	61	43
alipay-ams-java-sdk	114	21	8	7	7	3219	231
aliyun-aliyun-log-flink-connector	10	1	1	0	1	18	13
aliyun-aliyun-log-logback-appender	167	39	13	26	4	2510	551
almondtools-stringsearchalgorithms	188	156	44	95	8	71164581	4844
almson-almson-refcount	18	5	4	1	2	5000230	24
alt236-apkdetails	10	3	0	1	6	91	39
amazon-archives-amazon-kinesis-connectors	317	145	33	98	6	27077	1417
amazon-archives-aws-request-signing-apache-inte...	18	7	3	3	5	41	21
amazon-archives-dynamodb-key-diagnostics-librar...	384	175	29	129	6	369159	2519
amazon-archives-pocket-etl	1157	439	104	295	7	1777467	8428
amihaiemil-zold-java-client	59	19	10	9	4	272	174
andree-surya-moji4j	7	7	4	2	5	182	41
andylamp-BPlusTree	49	8	2	6	4	7340324	1163
Ant-Grand-Grand	261	155	32	108	7	3044248	1640
anther-sm-crypto	5	0	0	0	0	70	70
Antibrumm-jackson-antpathfilter	76	38	11	24	6	10630145	427
antlr-antlrworks	66	27	7	19	6	5094	929
antlr-stringtemplate3	300	52	10	36	8	5147	1074
anubhavshukla-properties-to-yaml-converter	15	11	1	9	6	704	50
apache-commons-cli	109	49	16	25	6	12192	874
apache-commons-codec	300	129	32	92	7	3797652	20178
apache-commons-compress	2827	1052	250	717	10	9854355	41844
apache-commons-imaging	567	291	55	210	8	52101119	8545
apache-commons-jxpath	281	131	34	94	6	381081	1450
apache-dubbo-hessian-lite	73	22	13	7	7	303628	276
apache-dubbo-rpc-jsonrpc	189	84	35	43	8	9885	625
apache-maven-ear-plugin	1	1	1	0	1	12	4
apache-maven-shared-utils	43	18	6	12	3	1009	185
apache-maven-verifier-plugin	2	1	0	0	5	10	5
apache-sling-org-apache-sling-dynamic-include	305	138	11	116	6	95908	1350
apache-sling-org-apache-sling-feature	508	230	31	164	10	112917	4207
apache-sling-org-apache-sling-query	121	50	19	28	5	247381	1138
apache-sling-org-apache-sling-scripting-sightly	389	179	28	135	6	593280	3224
apache-sling-org-apache-sling-servlets-resolver	348	173	29	128	6	473316	2545
apache-xmlgraphics-commons	536	230	34	176	6	1126163	3552
apanimesh061-VaderSentimentJava	41	16	5	10	5	4385453	2321
apereo-cas-server-security-filter	221	113	3	97	6	70266	1108
Appdynamics-rabbitmq-monitoring-extension	121	22	5	16	5	1244	342
Appdynamics-redis-monitoring-extension	81	26	10	14	8	8220	577
Appdynamics-zookeeper-monitoring-extension	136	19	5	14	4	619	241
appnexus-ElasticNet4j	16	8	3	5	4	813	110
AquaticInformatics-aquarius-sdk-java	55	42	8	34	4	11175	359
arangodb-jackson-dataformat-velocypack	1493	553	132	383	7	5312691	12184

	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
846								
847	arangodb-java-velocypack	29	9	3	6	3	1100	121
848	archervanderwaal-storm-server	199	82	33	47	5	15641	738
849	Ardesco-driver-binary-downloader-maven-plugin	568	164	44	105	7	10030	1525
849	Ardesco-Query	85	43	29	14	4	877878	1699
850	arnaugarcia-sallefy	323	122	85	37	3	1320964	13168
851	asaflevy-SeleniumExtend	4	2	0	2	2	51	7
851	Asana-java-asana	131	44	19	18	7	15707	515
852	aschoerk-converter-page	303	157	80	74	6	6615	1609
852	asciidocctor-asciidoclet	707	305	80	206	7	410722	9955
853	aseldawy-spatialhadoop2	756	363	93	245	9	3787845	4716
854	ashenwgt-awesome-bdd-with-cucumber	236	96	30	62	6	22430	1084
854	ashish-chopra-Structures	41	19	5	14	4	740	132
855	AshisRaj-cucelasticsearch-maven-plugin	391	188	24	147	6	178027	2573
856	ashwanthkumar-good-janitor	163	62	21	40	5	2396	510
856	ashwanthkumar-slack-java-webhook	14	1	0	1	2	42	27
857	assertthat-selenium-shutterbug	2	0	0	0	0	5	5
858	ATLANTBH-owl	3	1	1	0	1	6	5
859	atorstling-bychan	2	1	0	1	2	29	3
859	Atrox-haikunatorjava	2	2	0	2	3	51	11
860	atteo-evo-inlector	13	6	1	5	3	566	116
860	attoparser-attoparser	86	40	3	31	6	219116681	989
861	augustd-burp-suite-jsonpath	11	2	0	2	4	487	75
862	aurbroszniowski-os-platform-finder	4	1	0	1	2	10	8
862	aurbroszniowski-Rainfall-core	34	10	1	8	6	100758	80
863	autermann-yaml	105	39	16	20	7	20766	592
864	athlete-athlete-java-common	161	62	26	26	5	12717	707
864	AuthorizeNet-sdk-java	101	37	4	29	6	3178	370
865	avaje-common-avaje-agentloader	82	15	5	10	3	487	138
866	AVMf-avmf	20	12	5	7	4	949	56
866	AwakenCN-InChat	1	1	0	1	2	12	2
867	aws-amazon-neptune-sigv4-signer	250	107	7	90	6	6465	927
868	aws-cloudformation-cloudformation-template-sche...	2	2	0	2	4	9989	20
868	aws-labs-amazon-kinesis-scaling-utils	75	21	7	14	4	373	154
869	aws-labs-amazon-sns-java-extended-client-lib	267	135	10	114	6	667606	1563
870	aws-labs-aws-glue-catalog-sync-agent-for-hive	103	34	6	25	5	1758	356
870	aws-labs-route53-infima	41	21	2	15	9	7106092	774
871	axelhjalm-bitwig-midi-fighter-twister	1	1	0	1	2	296	2
872	azam-ulidj	12	3	0	3	2	416	66
872	azige-moebooru-viewer	97	40	12	23	6	2193	321
873	Azure-azure-functions-java-worker	788	204	60	131	6	348510	6908
874	Azure-Samples-cassandra-proxy	133	36	12	23	5	3675	278
874	badlogic-basis-template	46	24	12	10	5	2859	285
875	baidu-smartapp-openapi-java	3942	1697	89	1499	6	1923872	16918
876	Bandwidth-java-bandwidth	303	48	27	17	5	9325	766
876	BarcodeAPI-server	211	101	32	66	5	33480	1041
877	barrer-translate-online	91	37	8	26	6	9252	445
878	basdijkstra-tau-rest-assured	1000	440	143	265	7	160038	4559
878	baswerc-routes	116	26	9	15	7	3294	362
879	bazaarvoice-dropwizard-redirect-bundle	14	6	4	2	3	68	33
880	bazaarvoice-jsonpps	56	32	15	16	5	1901	262
880	bazaarvoice-rison	122	53	27	23	6	2603	577
881	bbottema-java-socks-proxy-server	163	42	10	26	6	3491	717
882	bdupras-guava-probably	81	40	11	26	5	4043540	283
882	BellaDati-belladati-sdk-java	416	227	58	156	6	201411	2091
883	ben-xo-cdjscribbler	238	110	5	97	6	144985	1437
884	beothorn-URISchemeHandler	1	1	0	1	3	56	3
884	berlam-github-bucket	242	89	35	52	7	12307	956
885	bernardosulzbach-dungeon	184	69	24	42	8	10618	1411
886	berndporr-iirj	37	22	0	22	2	514896	164
886	bestyize-DoubanAPI	8	4	0	2	9	84	46
887	beyonddream-JRAKE	15	4	1	2	5	326	66
888	bfh-evg-unicrypt	199	127	81	44	5	123812802	8586
888	bgandon-juli-to-slf4j	7	0	0	0	0	11	11
889	binance-binance-connector-java	573	91	28	61	6	105134	6333
890	binance-binance-futures-connector-java	410	83	35	47	5	47668	2641
890	BingAds-BingAds-Java-SDK	579	291	115	162	7	421561	2013
891	binghe001-myskit-holiday	49	22	2	20	3	2114	133
892	bingoohuang-asmvalidator	449	82	23	55	5	11560	1013
892	bingoohuang-excel2javabeans	753	262	85	169	6	233476	12199
893	bingoohuang-westid	204	58	12	46	4	1481	469
894	biouno-figshare-java-api	23	10	7	3	3	386	62
894	biouno-pbs-java-api	2	0	0	0	0	36	36
895	bkatwal-kafka-solr-sink-connector	47	9	1	7	7	183	122
896	bkatwal-kafka-util	884	294	85	184	7	283359	33440
896	bkiers-atlas	20	4	1	3	3	10940	93
897	blackbeard334-djoom3	1	1	0	1	2	12	2
898	blackdoor-hate	104	55	19	28	6	3037	754
898	Blazemeter-xtn5250	157	63	22	41	4	53864	1134
899	blinkfox-mini-table	7	2	1	1	2	31	21
900	blinkfox-zealot	180	36	15	20	7	10022	614
900	blueapron-kafka-connect-protobuf-converter	86	45	14	21	6	5982	500
901	bluemix-NumberToArabicWords	8	3	0	2	5	147	33
902	bmatthews68-ldapunit	141	81	28	50	6	68087	1342
902	bmwcarit-hmm-lib	25	16	1	10	5	654	124
903	bohnman-squiggly	205	83	24	53	7	280579	1645
904	bonnyfone-vectalign	20	13	1	9	5	4005191	16346
904	bookshelfdave-etp	74	41	9	28	7	9398	537
905	bouncestorage-chaos-http-proxy	0	0	0	0	0	0	0
906	bpodgursky-jbool_expressions	40	25	14	7	6	74864	630
906	bpsm-edn-java	70	41	13	26	5	37104	432



	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
911	braintree-braintree_java	428	185	22	139	8	195447	3087
912	bruceran-krpc	538	227	67	143	7	20137	2573
913	brutusin-commons	12	4	2	2	2	975	14
914	brutusin-instrumentation	20	14	5	8	5	316	81
915	bserdar-jcliff	31	19	6	11	5	1203	266
916	btrekkie-dynamic-connectivity	13	3	2	1	2	112	75
917	bubuntux-poker-engine	6	4	2	2	3	39	20
917	buddy-works-simple-java-project	3	0	0	0	0	5	5
917	bvolpato-inutils4j	34	10	1	9	4	134	82
918	c-rack-cbor-java	63	20	8	11	6	801660	292
919	c0ny1-captcha-killer	11	9	5	4	4	158	62
920	caligula95-spring_crud	219	89	56	33	4	46027	1518
920	camunda-camunda-xml-model	220	117	22	89	6	48325	983
921	Cantara-Java-Auto-Update	497	204	29	153	7	140078	2373
921	carlosbritojun-jflunt	2	2	1	1	2	128	6
922	carloste-jopence	4	3	0	3	3	40	23
923	CarmJos-AliDDNS-Updater	51	18	5	10	7	4628	500
923	casbin-jcasbin	548	231	38	168	7	263144	6600
924	casid-jusecase	8	4	0	4	3	60	17
925	cbartosiak-bson-codecs-jsr310	13	6	4	2	2	3518	11
925	cellsg-tabbypdf	7	0	0	0	0	16	16
926	Celos-avro-json-decoder	51	22	6	16	4	1771	192
927	CeON-spark-utils	146	40	16	22	6	3945	420
928	ceridwen-com-ceridwen-standard-interchange-prot...	140	58	19	38	5	35263	377
928	cescoffier-vertx-completable-future	207	62	24	36	5	246124	394
929	ChannelApe-shopify-sdk	697	271	98	145	8	775000	4760
929	ChannelFinder-javaCFCClient	15	10	0	10	3	435	121
930	Chatanga-Girinoscope	1	1	1	0	1	3	2
931	cheese10yun-spring-jpa-best-practices	256	118	81	37	4	139909	2714
932	chengdedeng-waf	98	41	11	29	5	4363	565
932	chenhaiyangs-mycbatis-encrypt-plugin	23	4	2	2	2	48	31
933	chenjianjx-swagger2html	334	172	51	95	7	72275	3442
933	chenjianjx-wsdl2html	3	1	0	1	2	12	8
934	chrfrantz-DBSCAN	11	1	0	1	3	675	62
935	chriswhocodes-FreeLogJ	11	2	0	2	2	94	28
935	Chrris-RRDiagram	36	20	3	14	5	3394	440
936	cimiano-tbx2rdf	140	73	23	49	5	42580	545
937	CiscoDevNet-stealthwatch-data-exporter	41	17	3	13	5	1334	139
937	cjmatta-kafka-connect-irc	12	6	1	4	7	137	49
938	clarkchen-data_structure	17	8	0	8	2	264	46
939	cloudbees-diff4j	34	25	4	18	8	13659	581
940	cloudbees-oss-zendesk-java-client	694	294	128	147	7	93786	3469
940	clouidiator-sword	89	33	8	25	4	2175	184
941	clouidiator-visor	1	1	1	0	1	2	1
941	cloudspannerecosystem-pgadapter	274	130	6	110	6	662811	2690
942	cm-heclouds-onenet-studio-api-java-sdk	105	59	18	41	4	4116	310
943	cocolian-cocolian-nlp	136	80	21	51	8	25115363	28729
944	CODAIT-stocator	1130	479	41	407	6	550058	6597
944	code4craft-xsoup	75	30	8	20	5	3299	257
945	codeclou-java-junit-xml-merger	139	59	18	37	5	12095	425
945	codedance-silken	13	5	3	1	6	363	48
946	codeforamerica-pdfparser	143	55	20	29	6	6494	689
947	codeine-cd-codeine	135	41	11	26	6	1081	368
948	codeinlib-jcifs	72	22	9	13	4	869	166
948	codeinlib-jhighlight	16	8	3	3	10	678	53
949	codeinlib-ranklib	114	52	10	37	8	28872	379
950	codelon-gramtest	72	24	4	18	7	25601108	1230
950	coderoode-OrderStatisticTree	41	5	3	2	3	5002	116
951	CodeShield-Security-Log4JShell-Bytecode-Detecto...	26	12	4	7	8	198851	18335
951	CodinGameCommunity-XmasRush	37	11	3	8	4	121	67
952	coekie-gentyref	18	8	2	6	4	775	54
953	Col-E-Simple-Memory-Compiler	9	3	2	1	3	33	17
953	coldnew-twse-captcha-solver-java	16	6	0	2	7	3293	138
954	confluentinc-castle	181	83	26	48	6	7340	1361
955	confluentinc-kafka-connect-datagen	201	90	23	62	7	7585350	11240
956	contentful-contentful-management.java	298	114	51	54	7	276848	1322
956	contentful-contentful.java	492	206	44	147	7	241453	3360
957	conveyal-osm-lib	208	93	49	44	4	16842895	3523
958	coralblocks-CoralME	232	93	5	79	6	10208	1087
958	corentin59-ArtNetStack	1	1	0	1	2	8	2
959	Coreoz-PPT-Templates	197	76	20	46	9	82984	3168
959	Coreoz-Wisp	177	48	19	27	5	249575	471
960	couchbaselabs-couchbase-capi-server	368	142	61	71	7	36020	1224
961	Coveros-GitHub-Sandbox-selenified	972	319	75	213	7	352058	3100
961	cowtowncoder-java-cachemate	6	4	2	2	2	4000058	21
962	cowtowncoder-java-uuid-generator	32	25	3	22	3	20836588	120
963	cowtowncoder-low-gc-memuffers	30	26	13	13	3	584	72
964	craigwblake-redline	199	103	24	66	8	15594	1091
964	crispab-javabuilderpattern	16	2	0	2	2	25	19
965	crossoverJie-distributed-redis-tool	45	8	6	2	3	487	106
965	crossoverJie-leetcode	6	4	0	3	7	128	32
966	Crozin-Wykop.pl-Java-SDK	19	14	4	9	7	295	112
967	Cryptonomica-cryptonomica	20	8	5	3	2	549	28
967	ctapweb-AutoSubClause	516	189	61	110	7	1366925	5581
968	cternes-openkeepass	295	156	61	86	5	562562	17691
969	ctran-TinyRadius	5	0	0	0	0	226	4
970	ctrl-alt-dev-tps-parse	81	39	16	18	5	6488	544
970	ctron-rpm-builder	1	1	1	0	1	5	2
971	CubeEngine-Dirigent	44	23	8	14	6	3635	253
972	CurrencyCloud-currencycloud-java	777	400	112	250	7	1579982	17109

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976								
977	cutecharts-cutecharts.java	187	84	2	75	6	39564	861
978	cyberborean-rdfbeans	217	96	21	64	7	64445	1306
979	d-plaindoux-suitcase	31	14	3	10	5	1453	83
980	daanvdh-JavaForger	62	20	9	9	6	1211	156
981	dadiyang-equator	10	6	1	5	4	319	46
982	daimuuc-CampusLife-SSM-	593	225	50	157	9	40488	2132
983	daisy-jhyphen	11	9	3	6	4	257	44
984	DaisyDiff-DaisyDiff	67	43	12	27	5	57127	1150
985	dakusui-jcunit	385	116	32	65	8	136512454	7568
986	damienclaveau-kafka-graphite	57	16	3	13	4	592	247
987	damnhandy-Handy-URI-Templates	162	79	26	39	8	16130	832
988	dampcake-bencode	64	11	4	6	5	547	131
989	danieldk-dictomaton	153	88	34	43	6	42767533	13836
990	danielflower-maven-gitlog-plugin	70	45	3	38	9	51472	407
991	danielwegener-logback-kafka-appender	406	208	32	158	7	62555	1997
992	dano-vertx-zeromq	166	72	29	39	5	13732	599
993	darmiel-eeee	12	8	3	5	3	7090	619
994	dart-maven-plugin-dart-maven-plugin	36	7	2	5	3	245	75
995	datadotworld-dw-jdbc	547	276	116	145	10	145039	2393
996	datastax-native-protocol	338	176	29	137	6	153757	3093
997	datoin-http-requests	241	80	29	48	6	5251	502
998	davidB-scala-maven-plugin	6	5	1	4	3	111	20
999	DavidHerBet-java-codility	28	15	0	14	5	328	115
1000	davidmoten-aws-maven-plugin	39	5	1	3	5	235	75
1001	davidmoten-big-sorter	166	48	14	30	8	63096	837
1002	davidmoten-bplustree	49	32	14	18	4	63527267	189
1003	davidmoten-guava-mini	10	2	1	1	2	23	19
1004	davidmoten-hilbert-curve	31	10	2	8	4	594484	258
1005	davidmoten-predict4java	30	7	3	4	3	2428	98
1006	davidmoten-rtree	349	154	19	119	6	33111143	2825
1007	davidmoten-rtree-multi	301	124	20	93	6	19764129	38325
1008	davidmoten-rtree2	295	126	19	95	6	16505411	1811
1009	davidmoten-rxjava-extras	489	172	44	113	12	10114219	5613
1010	davidmoten-rxjava-slf4j	264	109	5	94	7	59237	1170
1011	davidmoten-rxjava2-file	34	13	6	7	3	389	60
1012	davidmoten-sparse-hilbert-index	83	33	6	25	6	2829	224
1013	davidmoten-word-wrap	29	10	4	5	5	1538	215
1014	dbaggott-newrelic-dropwizard	307	123	45	76	7	74511	1207
1015	ddopson-java-class-enumerator	3	2	0	2	2	25	13
1016	de-mklinger-tomcat-juli-slf4j	4	4	1	3	3	378	8
1017	delthas-JavaMP3	6	2	0	1	5	77	11
1018	delving-x3ml	365	198	76	108	6	1826171	6247
1019	demidenko05-beigesoft-accounting	2	2	0	2	2	4312	14
1020	demidenko05-beigesoft-webstore	4	2	0	2	4	45	30
1021	deniswsrosa-liquicouch	65	43	18	23	5	4431	240
1022	denniskniep-GQLRaider	63	33	9	23	7	6830	627
1023	DenzelCode-AdvancedSQL	31	11	5	5	5	539	70
1024	dernasherbrezov-jradio	1063	262	105	140	6	26578923	7290
1025	devnied-Bit-lib4j	26	5	2	3	3	75	56
1026	devopshydclub-vprofile-project	154	78	55	23	4	22619	882
1027	devopshydclub-vprofile-repo	149	75	50	25	4	17072	790
1028	dgroup-docker-unittests	264	110	63	46	7	38095	2280
1029	dgroup-laconic-velocity	87	24	7	16	5	626	181
1030	dhananjaypatkar-kafka-connect-phoenix	84	20	8	9	7	609	230
1031	dhatim-business-hours-java	31	12	0	10	6	1455664	1911
1032	dibbhatt-kafka-spark-consumer	15	2	0	2	2	121	49
1033	digipost-http-client-builder	3	3	1	2	3	21	7
1034	digital-preservation-utf8-validator	3	2	1	0	6	142	22
1035	digitalfondue-npjt-extra	465	177	51	118	6	25562	1134
1036	digitalheir-java-nfa	27	11	7	4	4	563	74
1037	DigitalPebble-TextClassification	34	18	2	9	10	1417	290
1038	dikhan-pagerduty-client	615	255	74	166	7	368735	4721
1039	dingjs-javaagent	12	3	2	1	2	38	23
1040	dizitat-jbus	325	163	17	132	6	175518	1822
1041	dkellenb-formula-evaluator	44	10	2	7	5	2511	179
1042	dmak-jaxb-xew-plugin	412	183	20	150	6	328604	3063
1043	dmcg-okey-doke	15	11	4	7	2	208	22
1044	dmeoli-WS4J	122	37	17	13	8	962080	1087
1045	dmitry-zhuravlev-jooq-postgis-spatial	0	0	0	0	0	0	0
1046	dnsjava-dnsjava	1282	596	120	430	8	2170058	20974
1047	Doccrazy-keycloak-protocol-cas	134	53	16	32	6	2384	404
1048	domclick-kafka-logback	216	114	7	100	6	127477	1367
1049	dpaukov-combinatoricslib	128	45	9	36	3	708657	713
1050	dperezcabrera-jpoker	224	89	21	66	6	96172485	1714
1051	dpressel-sgdtk	12	2	0	2	3	744	28
1052	dreezey-argon2-password-hash-provider	51	20	5	12	6	398	139
1053	DReichLab-ADNA-Tools	168	88	21	56	12	104302	1743
1054	Driftt-EmailReplyParser	29	17	7	10	3	1018	219
1055	dropwizard-dropwizard-elasticsearch	1117	483	97	356	7	145877	4744
1056	dsc-cmt-cmt-statemachine	147	48	9	34	5	4941	384
1057	dspinellis-ckjm	34	11	4	7	3	464	76
1058	dsyer-spring-security-rsa	19	8	1	7	3	212	34
1059	dubasdey-portable-ftp-server	48	8	4	4	2	974	109
1060	dubin555-Kafka-Insight	1	0	0	0	0	10	10
1061	duguying-pinyin	9	6	0	6	2	275016	34
1062	duma-repo-manis-study	19	3	1	2	2	33	24
1063	dyng-polling	16	4	3	1	3	105	33
1064	dyorgio-cpu-watcher	36	15	3	10	7	14416	159
1065	e-gineering-gitflow-helper-maven-plugin	1	0	0	0	0	2	2
1066	earcut4j-earcut4j	2	1	1	0	1	10	8

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1041								
1042	eBay-bsonpatch	112	43	10	32	5	696396	10054
1043	eBay-FeedSDK	111	29	6	23	4	999	274
1044	eBay-json-comparison	234	129	11	108	6	26070	1156
1044	ECharts-Java-ECharts-Java	127	52	18	30	7	57624	1753
1045	echisan-wbp4j	69	28	6	21	5	564	154
1045	ecki-et-otp	2	1	0	1	2	1029	9
1046	eclipse-jbom	110	64	17	41	6	74364	1405
1047	edgexfoundry-support-rulesengine	213	77	21	52	6	23976	475
1047	eightbitjim-cassette-nibbler	89	70	16	53	7	189045642	45365
1048	EladLeev-KeyToField-smt	31	14	4	10	4	468	135
1049	elasql-elasql	12	1	1	0	1	43	41
1049	elasticpath-json-unmarshaller	186	101	36	56	6	144508	1424
1050	EnterpriseQualityCoding-FizzBuzzEnterpriseEditi...	221	115	25	81	6	477572	883
1051	entrusc-xdata	60	19	6	12	6	1490	142
1051	eolinker-sql2dsl	65	32	7	24	5	4253	263
1052	erdtman-java-json-canonicalization	10	5	0	4	5	247	95
1053	errai-errai	276	151	42	99	7	105831	2434
1053	esamson-logback-luhn-mask	206	97	2	85	6	11996	934
1054	EsmerilProgramming-overtown	134	57	27	28	5	4028	318
1055	EsotericSoftware-yamlbeans	247	61	10	47	7	56242	7563
1056	ethlo-jsons2xsd	64	25	7	17	5	3455	252
1056	etsy-arbiter	81	35	22	13	4	4672	621
1057	etsy-statsd-jvm-profiler	307	88	28	55	5	3059	618
1058	eurekaclinical-datastore	198	63	11	44	8	5510	801
1058	eurekaclinical-javautil	14	4	2	2	3	77	30
1059	everwatchsolutions-json-data-generator	3	3	0	3	2	12000	12
1060	exchange-core-orderbook	255	112	8	96	6	29884	1826
1060	EXIficient-exifient-core	132	14	9	5	3	11992	402
1061	ExpediaGroup-avro-compatibility	57	21	6	15	4	6831	160
1061	ExpediaGroup-jasvorno	103	45	15	27	6	5719	386
1062	eyp-serfj	138	35	7	28	4	8950	344
1063	f-lab-edu-real-time-delivery-market	87	40	27	13	3	44289	738
1063	f0ng-captcha-killer-modified	11	9	5	4	4	158	62
1064	f4b6a3-ksuid-creator	7	7	2	5	3	160890	17
1065	f4b6a3-tsid-creator	24	24	14	10	2	659036	152
1065	f4b6a3-ulid-creator	10	10	6	4	2	164606	20
1066	f4b6a3-uuid-creator	75	69	29	40	3	602946	202
1067	fabric8io-docker-maven-plugin	1512	556	96	414	7	1826498	31007
1067	fanchaoo-hahu	302	101	69	32	4	67702	2470
1068	fangyidong-json-simple	11	6	1	5	3	314	111
1069	fasseg-exp4j	37	13	4	7	8	206799	225
1069	FasterXML-jackson-benchmarks	1	1	0	1	3	16	4
1070	FasterXML-java-classmate	124	25	11	13	5	1535	317
1071	fdinoff-neovim-java-client	139	54	27	27	4	3836	536
1071	FDMediagroep-hamcrest-jsoup	43	26	8	16	5	2224	133
1072	feiYouLian-jpinyin	11	7	2	5	3	1705	52
1073	FelixGail-gplaymusic	2	2	1	0	5	22	6
1073	fengwenyi-api-result	3	0	0	0	0	15	15
1074	ferstl-pedantic-pom-enforcers	377	193	32	140	7	366866	2783
1075	fhoben-hsac-fitness-plugin	503	268	55	196	9	1219224	3025
1076	figo-connect-java-figo	22	10	3	7	3	124	59
1076	fiji-AnalyzeSkeleton	108	11	4	7	3	900	132
1077	finmath-finmath-lib	1210	718	294	363	9	292561860	7034
1077	finn-no-retrievable-kafka-consumer	259	126	13	100	6	55250	1369
1078	finos-messageml-utils	1040	328	72	232	7	118669	4143
1079	firebase-firebase-admin-java	1916	682	149	485	8	4978627	44593
1080	fizzed-jne	134	39	9	28	6	2634	371
1080	flipkart-incubator-databuilderframework	158	83	25	48	6	51550176	1453
1081	floppylib-markdown2document	352	147	46	92	6	226761	1106
1082	flowerfelt-find-and-replace-maven-plugin	15	13	1	10	10	4790	126
1082	Flying9001-pay	1	0	0	0	0	2	2
1083	forcedotcom-SiteCrawler	4	2	0	2	2	37	11
1083	forcedotcom-wsc	328	151	54	89	6	575691	45869
1084	fordfrog-ruian2pgsql	31	20	8	9	5	422	165
1085	forgemo-bittrex-java-client	101	68	22	38	7	29656	1222
1086	ForgeRock-OpenBanking-UK-Datamodel-Java-SDK	253	147	42	91	6	84836	2397
1086	ForteScarlet-Mock.java	1	1	0	1	2	6	4
1087	fortitudetec-sonar-ruby-plugin	254	87	39	47	5	130377	12893
1087	Francesco149-koohii	9	5	0	5	4	21358	4784
1088	francisdb-serviceloader-maven-plugin	11	9	3	5	8	1120	90
1089	fraunhoferfokus-Fuzzino	361	168	42	113	8	503526	7001
1089	freva-ascii-table	16	8	2	6	3	468	86
1090	fsantiago-sonar-closure	385	162	25	124	6	45411	1655
1091	Fundynamic-dune2themaker4j	390	204	16	171	6	1596192	4652
1091	fusion-jena-JaroWinklerSimilarity	43	18	3	11	7	137424739	11414
1092	fuzziness-kabeja	11	6	4	2	3	95	29
1093	fzakaria-ascii85	2	0	0	0	0	16	16
1093	g4dpz-predict4java	26	6	2	4	3	1378	51
1094	gabrie-allaigre-sonar-gitlab-plugin	543	213	83	113	7	72495	1875
1095	games647-ColorConsole	52	18	3	14	5	503	225
1095	ganskef-LittleProxy-mitm	467	156	46	104	9	68185	1988
1096	GaoLeiQin-SwordOffer	93	5	1	4	2	337	254
1097	gaols-reduce-rule	2	2	1	1	3	4000	400
1097	GeBeater-dozer-jdk8-support	11	0	0	0	0	11	11
1098	geftimov-hadoop-map-reduce-patterns	5	0	0	0	0	9	9
1099	george-haddad-cardme	207	66	17	38	5	7507	987
1099	geosolutions-it-geoserver-manager	101	38	15	22	5	13461	672
1100	geosolutions-it-http-proxy	942	355	134	197	6	51738	3584
1101	gesellix-Nimbus-JOSE-JWT	51	17	3	9	5	534	129
1101	ghacupha-book-keeper	38	13	4	9	3	3096	129

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1106								
1107	ghaffarian-progex	279	188	16	139	10	20492889	37675
1108	ghosthack-turismo	2	0	0	0	0	2	2
	Gikkman-Java-Twirk	110	14	2	12	4	902	169
1109	giltene-jHiccup	3	0	0	0	0	15	15
1110	gini-dropwizard-gelf	1598	613	153	416	7	180564	9222
	gisarmory-mbtiles4j	9	1	0	1	2	34	32
1111	gitbucket-markedj	87	36	6	28	5	14134	581
1112	GitHub-Laziji-reverse-regex	10	10	3	5	5	3429	216
	gkopff-gson-javatime-serialisers	12	6	3	3	3	291	59
1113	gkopff-gson-jodatetime-serialisers	45	14	5	8	5	972	160
1114	gmr-rabbitmq-flume-plugin	9	3	1	2	2	74	14
	GMWolf-artemis-odb-eeel	14	6	4	2	3	960	27
1115	goncalomb-NBTEditor	15	2	0	2	2	318	38
1116	gongdaowen-ofdparser	324	92	20	64	8	781023	5329
	google-closure-stylesheets	585	269	79	175	7	252697	4489
1117	google-escapevelocity	204	96	35	59	5	50926	1266
1118	google-guava-beta-checker	58	35	10	24	5	24881	256
	google-jsontoken	37	19	8	11	3	1283	120
1119	googleapis-disco-to-proto3-converter	157	99	22	68	8	1062948	28500
1120	googleapis-java-pubsub-group-kafka-connector	564	207	36	148	7	198573	3818
	googleapis-java-pubsublite-spark	373	162	26	120	6	102581	1945
1121	GoogleCloudPlatform-app-maven-plugin	281	142	12	117	6	1254641	3637
1122	GoogleCloudPlatform-kafka-pubsub-emulator	664	279	62	195	7	125318	2714
	GoSimpleLLC-jpgAgent	0	0	0	0	0	0	0
1123	goxr3plus-java-google-speech-api	7	3	1	2	2	134	33
1124	gradusnikov-jmatio	46	17	8	6	7	13266	308
	grantneale-kafka-lag-based-assignor	37	9	2	7	4	324	170
1125	graphhopper-jackson-datatype-jts	44	14	8	6	4	1359	86
1126	graphstream-gs-core	250	81	22	53	7	6501917	818
	graylog-labs-syslog4j-graylog2	216	94	6	80	6	7335	928
1127	Graylog2-gelfclient	317	124	21	94	6	133565	1560
	GreenButtonAlliance-OpenESPI-ThirdParty-java	64	16	9	7	3	772	262
1128	gregorriegler-babdev-spring	7	2	0	2	3	25	20
1129	gridgain-yardstick	13	3	1	2	3	634	38
	gridkit-jvm-attach	4	1	0	1	3	18	15
1130	grpc-grpc-java-api-checker	116	53	22	29	9	63546	556
1131	grumlimited-geocalc	17	3	2	1	2	40	28
1132	Grundlefleck-ASM-NonClassloadingExtensions	229	113	21	84	6	32050829	41819
	gturri-aXMLRPC	510	232	92	124	11	27759	2222
1133	Guo-xm-mybatis-expand	49	22	7	14	6	105021	191
1134	habernal-confusion-matrix	22	18	2	9	7	7750	770
	hackingwu-Java-Promise	4	0	0	0	0	9	9
1135	hageldave-ezFTW	38	13	2	5	7	19441	136
1136	hajhouj-fastxico	1	0	0	0	0	1	1
	hankcs-hanlp-lucene-plugin	340	137	48	74	9	9641	1461
1137	hantsy-angularjs-springmvc-sample	276	98	77	21	3	19601	2003
1138	harawata-appdirs	13	4	1	3	2	451	34
	Harium-etyl	5	0	0	0	0	8	8
1139	Harium-keel	50	18	11	7	3	4768	697
1140	HarvardPL-AbcDatalog	141	87	15	64	6	146487	2279
	hazelcast-hazelcast-aws	685	276	111	144	7	266897	2923
1141	hazelcast-hazelcast-azure	601	284	116	149	10	159672	2508
1142	HdrHistogram-HdrHistogram	73	48	18	30	4	1757629	4080
	HebiRobotics-HebiCam	1	1	1	0	1	3	1
1143	HelixNetwork-pendulum	1693	675	166	451	10	12141075	38985
1144	hellige-ccs	56	33	7	17	7	16977	1041
	hellokaton-webp-io	7	3	0	3	4	74	31
1145	hengyunabc-metrics-zabbix	212	98	4	85	8	27470	1112
1146	heremaps-oksse	8	0	0	0	0	8	8
	hermannpencole-nifi-config	181	45	9	33	7	3316	470
1147	Heroicai0101-abtest	9	5	1	4	3	740068	30
1148	heroku-heroku-jvm-application-deployer	3	0	0	0	0	7	7
	hertzsprung-hamcrest-json	35	22	8	13	5	583	113
1149	hevoio-recoverable-kafka-producer	68	22	12	8	6	308	189
1150	hifly81-bank-account-axon	97	34	10	21	5	629	148
	HiveRunner-mutant-swarm	130	46	28	17	5	412339	2341
1151	hivsuper-document-converter	1	0	0	0	0	5	5
1152	hkhcoder-vprofile-project	154	78	55	23	4	22619	882
	hlavki-jlemmagen	27	14	2	11	6	1260566	2066
1153	hneemann-digitalCustomComponents	69	34	13	21	4	1272	222
1154	hneemann-Oscilloscope	4	4	0	4	2	11612	8
	hoereth-springfox-enum-plugin	64	23	4	17	6	366	130
1155	hoijui-Jawk	143	32	11	19	7	1323	300
1156	hoijui-ReZipDoc	49	28	4	18	8	1027	229
	hongbeomi-Programmers	49	17	3	14	4	563	130
1157	hongliuliao-thrift-generator	111	56	21	30	5	7166	578
	houbb-heaven	8	2	0	1	5	51	27
1158	houbb-nlp-hanzi-similar	33	17	4	12	5	771949	303
1159	houbb-opence4j	41	22	14	4	5	1135824	798
	houbb-pinyin	26	16	7	8	5	671463	392
1160	houbb-segment	44	30	7	20	5	5913933	320
1161	houbb-sensitive-word	32	21	8	11	5	99409238	309
1162	houbb-word-checker	28	19	6	9	5	10526	237
	hs-web-hsweb-utils	27	7	3	4	3	1301	247
1163	hsiafan-apk-parser	183	134	17	115	7	25311	2107
1164	hsluv-hsluv-java	7	4	2	2	3	114659	18
	huaban-jieba-analysis	16	8	1	6	6	18908475	1092
1165	huangbowen521-SpringJMSSample	766	383	71	283	6	120084	8258
1166	huangp-entityunit	1139	520	116	378	7	460761	11233
	hubert-marteau-MultiChainJavaAPI	25	10	1	8	5	466	76

	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1171								
1172	HugoJhonathan-Challenge-Oracle-ONE-conversordem...	3	0	0	0	0	3	3
1173	huiwang-cracking-the-coding-interview	51	16	7	6	5	967	193
1174	huiyang100-excel-formula-engine	48	25	8	16	6	139184	536
1175	humbertodias-java-data-structures-algorithms	41	33	20	13	4	3284	143
1176	humming-if97	1	1	0	1	2	21	5
1177	iamazy-elasticsearch-sql2	235	101	38	53	6	8825	951
1178	ibit-tech-sql-builder	78	52	7	44	7	23132	345
1179	lBlogLab-enhance-gateway	98	26	19	6	5	5693	679
1180	IBM-Cloud-gp-java-client	13	5	3	2	2	162	29
1181	iceenongli-iceworkday	0	0	0	0	0	0	0
1182	ideal-mongodb-slow-operations-profiler	30	13	4	7	6	3895	188
1183	ifpe-cti-saudegaranhuns	115	34	5	26	6	1359	340
1184	igniterealtime-openfire-hazelcast-plugin	153	46	12	29	6	5030	428
1185	igniterealtime-tinder	134	44	12	32	3	125294	555
1186	iipc-jwarc	127	43	17	23	7	85287	478
1187	iipc-openwayback	650	237	53	166	7	20671	1928
1188	iipc-urlcanon	63	23	2	21	3	13649	494
1189	iipc-webarchive-commons	449	192	53	131	7	500197	10139
1190	imadcn-idworker	801	335	89	232	6	59595	2291
1191	imagej-example-script-collection	436	175	41	120	7	118455	2723
1192	imagej-imagej-omero	204	118	31	77	6	1304446	1871
1193	Imaginary11-bionic-utils	63	12	5	6	5	196	92
1194	imixs-muluk	1	0	0	0	0	3	3
1195	imohsenb-ISO8583-Message-Client-java	11	8	1	6	7	118	41
1196	implydata-druid-example-extension	360	126	33	80	6	9598	1661
1197	in-the-keyhole-khs-sherpa	0	0	0	0	0	0	0
1198	in28minutes-JUnitIn28Minutes	6	2	1	1	2	20	13
1199	iNamik-java_text_tables	15	11	1	9	6	2368	69
1200	indeedeng-mph-table	199	100	31	63	7	159668	1947
1201	indeedeng-vowpal-wabbit-java	61	34	10	23	7	287481159	275
1202	indexdata-cql-java	31	24	3	20	5	246598	1585
1203	indrabasak-bouncycastle-fips-examples	134	77	4	71	7	87746	2770
1204	InfoSec812-sonar-auth-google	85	36	9	24	5	2310	236
1205	Ingenico-ePayments-connect-sdk-java	293	126	39	74	5	8801	1059
1206	inreachventures-aws-signing-request-interceptor	85	35	12	17	7	1582	308
1207	instana-instana-java-opentracing	20	12	5	7	4	434	78
1208	InstantWebP2P-tweetnacl-java	17	16	0	16	2	4932	316
1209	intel-jndn-mock	48	25	14	10	5	1388	120
1210	intel-jndn-utils	129	61	21	37	6	6862	361
1211	internetitem-logback-elasticsearch-appender	12	2	2	0	1	33	12
1212	intive-FDV-DynamicJasper	2425	932	224	634	8	4194683	17988
1213	intuit-graphql-filter-java	117	78	51	25	8	557573	1539
1214	inversoft-jackson5	111	37	18	16	6	45299	359
1215	inversoft-restify	85	24	6	14	11	665	225
1216	io7m-aeron-guide	12	7	2	5	3	786128	38
1217	iorga-group-debattons	257	104	79	24	5	174137	2379
1218	iost-official-java-sdk	183	50	13	35	7	8197	1926
1219	iotaledger-cliri	916	382	115	233	8	643513	13884
1220	iquadrat-sbb-train-scheduler	226	153	95	57	5	39795443	6982
1221	iris-edu-stationxml-seed-converter	130	74	22	41	8	23127968	5545
1222	ironpinguin-serialized-php-parser	12	2	1	1	2	69	27
1223	Isaac315-sql-translator	40	11	5	5	5	472	141
1224	ITArray-automotion-java	107	48	30	18	3	327874	2965
1225	iterate-ch-java-openstack-swift	21	12	8	4	2	320	91
1226	IvanTrendafilov-Confucius	42	24	11	10	7	2735	415
1227	ixa-ehu-ixa-pipe-ml	14	3	2	1	3	65	42
1228	ixa-ehu-ixa-pipe-tok	11	8	2	5	5	244	46
1229	iyzico-iyzipay-java	10	8	0	8	3	70	25
1230	j-easy-easy-flows	229	124	8	103	6	25786	1173
1231	j-easy-easy-states	209	92	4	80	6	5869	863
1232	j256-simplecsv	55	16	3	10	9	52561	416
1233	j256-simplejmx	339	92	24	65	5	4780	779
1234	j256-simplemagic	171	58	18	36	6	326895	1735
1235	j256-two-factor-auth	8	3	0	3	3	2110	26
1236	jackhallam-weightless-orm	725	313	86	209	6	1902246	5422
1237	jagrosh-GiveawayBot	39	15	8	7	4	6182	97
1238	jahlborn-jackcess	744	435	142	267	8	39739951	38194
1239	jahlborn-jackcessencrypt	136	61	16	44	5	161949	10691
1240	jahlborn-sqlbuilder	170	61	23	36	7	13422	749
1241	jai-imageio-jai-imageio-core	33	20	10	9	5	2031	84
1242	jamf-AppConfig-Generator	1	1	0	1	3	9	3
1243	JanGorman-jersey-passbook	8	2	0	2	2	24	20
1244	jano7-executor	40	8	6	2	3	1075	71
1245	janssk1-maven-graph-plugin	256	129	52	70	5	167885	971
1246	jarekratajski-badlam	11	7	0	7	4	375	34
1247	JaroslavTulach-heapdump	61	15	5	10	4	231	119
1248	jarslab-babel-maven-plugin	630	309	76	221	9	14589904	6293
1249	jasminb-jsonapi-converter	326	125	61	56	6	70099	1896
1250	java-sepa-xml-java-sepa-xml	9	6	2	4	4	469	67
1251	javadoclight-delight-fileupload	14	5	4	1	2	49	16
1252	javadoclight-delight-rhino-sandbox	58	25	13	10	6	793	154
1253	javadev-moneytostr	11	4	2	2	4	4574	165
1254	JavadocMD-simplelatlng	19	5	3	2	3	77	52
1255	javagl-Common	30	9	6	3	3	761	91
1256	javagl-Obj	28	17	5	9	5	1787	133
1257	javalite-jar-explorer	14	14	3	11	3	963	54
1258	jamelody-jira-confluence-jamelody	134	108	11	80	7	16004	655
1259	JavaMoney-jsr354-ri-bp	134	81	19	57	8	6386828	595
1260	javamonkey-beetl2.0	398	180	31	118	7	355120	3740
1261	javastar920905-mdbook	4	2	0	2	3	249	24



	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1236								
1237	Javastro-jsofa	1	1	0	1	2	78	2
1238	jbossas-staxmapper	15	3	0	3	4	58	36
1239	jbrundege-taro	215	76	18	53	6	25099	1921
1240	jcabi-jcabi-jdbc	35	3	0	3	3	499	116
1240	jcabi-jcabi-maven-plugin	11	3	1	2	2	31	20
1241	jcabi-jcabi-ssl-maven-plugin	21	8	4	4	4	7292	38
1241	jcbvm-i18n-editor	23	6	3	3	2	869	45
1242	jchambers-fast-uuid	3	1	0	1	3	11	8
1242	jchambers-id-obfuscator	34	31	11	20	4	10094	383
1243	jchambers-jeospatial	25	11	3	8	3	436	96
1244	jdbc-observations-datasource-proxy	786	300	48	222	7	1824529	5557
1244	jdubois-spring-on-azure	256	104	81	22	5	171355	2360
1245	JeffLi1993-java-core-learning-example	2	1	0	1	3	25	4
1246	jenkins-infra-update-center2	356	115	48	59	7	12134755	9250
1246	jenkinsci-syslog-java-client	22	6	3	3	3	58	39
1247	jenshadlich-S3-Performance-Test	86	25	7	18	4	608	203
1248	jericks-geometrycommands	465	312	104	203	8	400915	3134
1248	jericks-geoserver-shell	829	229	78	131	6	327065	2942
1249	jericks-parboiled-wkt	236	84	16	64	6	337332	1584
1250	jessin20161124-miniDubboOpen	65	16	5	11	4	968	112
1251	JetBrains-jetCheck	109	38	19	17	6	7921613	1692
1251	jetlang-remoting	80	39	28	11	4	8494	180
1252	jetty-project-jetty-eventsourceservlet	177	91	27	61	6	13924	643
1252	jfaster-mango	713	297	60	212	9	512306	3874
1253	jfinal-jfinal	20	0	0	0	0	19	19
1254	jhalterman-concurrentunit	38	8	7	1	2	64	44
1254	jhalterman-lyra	175	68	34	32	5	10056	504
1255	jhalterman-typetools	4	3	0	3	3	47	16
1256	jhunters-jprotobuf	306	130	31	85	7	76622	11480
1256	jiangxincode-SearchEngine	5	0	0	0	0	13	13
1257	jillesvangurp-osm2geojson	78	29	9	18	7	651720	1773
1258	jingpeicomp-id-generator	37	22	1	20	5	97144739	354
1259	jitsi-bccontrib	6	3	3	0	1	6453	26
1259	jitsi-jitsi-webrtc-vad-wrapper	3	1	0	1	2	11	9
1260	jitsi-otr4j	263	138	14	111	8	1047347	1220
1261	jklingsporn-vertex-push-onesignal	47	18	5	11	6	363	118
1261	jlawrie-opencsv	69	19	10	8	5	1269	306
1262	jlinn-quartz-redis-jobstore	502	235	65	156	7	154241	2680
1262	jmazzitelli-prometheus-scraper	32	19	8	10	5	26339	422
1263	jmurty-java-xmlbuilder	16	8	1	6	5	497	41
1264	jnr-jnr-constants	16	6	0	6	2	1144	56
1264	jnr-jnr-enxio	90	29	5	24	4	1267	329
1265	jnr-jnr-ffi	3153	1084	242	805	7	28329403	11104
1266	jnr-jnr-process	141	40	11	28	8	17939	1070
1266	jnr-jnr-unixsocket	136	55	20	34	5	4007	634
1267	JodaOrg-joda-collect	80	37	24	13	4	1886	268
1268	JodaOrg-joda-time	418	150	55	89	5	23320	1459
1268	JodaOrg-joda-time-hibernate	439	227	61	153	6	62588	1721
1269	JodaOrg-joda-time-i18n	8	0	0	0	0	12	12
1270	joel-costigliola-assertj-neo4j	253	129	12	103	6	151975	1602
1271	johnlcox-toml4j	35	19	4	14	5	1197	336
1271	johnlpage-POCDriver	98	32	10	21	6	1205	281
1272	JohnsProject-JGameEngine	8	7	5	1	5	66	21
1272	jon-hanson-parsecj	33	19	5	14	3	1072	88
1273	jonatan-kazmierczak-class-visualizer	3	3	1	2	2	20	8
1274	jonathanhds-sql-builder	78	38	14	23	5	100369	291
1275	joniles-mpxj	897	443	118	303	7	15802973	42524
1275	joniles-rtfparkerkit	22	5	0	4	6	28816	108
1276	jonpereiradev-diff-objects	22	9	0	8	6	1022	125
1277	JoonasVali-jartin	14	0	0	0	0	25	17
1277	jordw-heftydb	281	142	47	92	5	4987253	11656
1278	joshgontijo-rest-client	471	200	73	112	7	69700	2148
1278	jottley-spring-social-salesforce	348	148	56	76	7	44978	2168
1279	jpenren-thymeleaf-ui-dialect	200	79	28	47	5	15990	4388
1280	jprante-elasticsearch-transport-websocket	1313	640	204	387	7	313052	7706
1281	jqassistant-archive-jqa-graphml-plugin	212	117	3	99	6	97135	1465
1281	jqassistant-archive-jqa-javase6-plugin	245	119	2	104	6	482273	2281
1282	jrmojo-indexed-file-reader	9	2	0	2	2	310	21
1282	jrieken-gae-java-mini-profiler	36	10	3	7	4	211	65
1283	jrmelsha-keccak	2	2	1	1	4	30	5
1284	jruby-jcodings	14	8	0	8	3	117	44
1284	jruby-joni	20	14	3	11	3	359	44
1285	js-cookie-java-cookie	104	44	13	27	6	1074	277
1286	jscep-jscep	388	133	8	115	6	30438	3563
1286	jsolve-templ4docx	209	98	25	59	7	34623	1631
1287	jsonld-java-jsonld-java	632	273	46	192	8	5285785	7255
1288	jtidy-jtidy	127	59	14	43	6	61881	2418
1288	jtmelton-attack-surface-analyzer	201	94	22	66	7	166794	4857
1289	juandes-i-email4j	123	69	24	42	6	13277	519
1290	julienchastang-charts4j	141	103	30	54	7	49682	1192
1290	julietkilo-CANBabel	18	8	1	5	5	32338	203
1291	junichi11-netbeans-color-codes-preview	331	130	49	73	10	34546	1536
1292	Juniper-netconf-java	286	142	12	116	6	478305	2517
1292	justauth-JustAuth	105	48	4	42	5	5095	355
1293	jvirtanen-config-extras	46	24	12	12	4	921	92
1294	jvitorr-Jeasier	35	7	3	4	2	1760	81
1294	jzy3d-jGL	6	4	2	2	3	24	12
1295	k55k32-simple-codegen	42	7	4	3	4	330	97
1296	kabutz-striped-executor-service	21	7	5	2	3	661	52
1296	kamaladafrika-codice-fiscale	20	14	9	5	3	5070756	123

	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1301								
1302	kamranzafar-jtar	24	9	1	6	6	510	84
1303	kapoorlabs-kiara	235	40	13	16	8	8700158	104731
	KasperFranz-AntiAd	5	1	0	1	3	94	7
1304	kayahr-pherialize	18	3	0	3	4	389	181
1305	kazuhikoarase-jaconv	4	2	0	2	2	148	32
	keighrim-mae-annotation	318	143	27	101	7	142294	1761
1306	keikai-dev-ref	301	56	14	35	6	9073	845
1307	keith0591-pgp-encryption	225	57	18	38	7	8686	1977
	kevin-wang001-mockj	70	41	9	32	4	7613	394
1308	kevin-wang001-poi-el	118	54	13	40	5	4574	571
1309	KevinStern-software-and-algorithms	89	27	14	13	4	10209	818
	kgalant-PackageBuilder	20	11	2	6	8	817	83
1310	kifj-jboss-syslog	5	4	0	4	2	83	17
	killbilling-recurly-java-library	269	102	32	68	5	2220282	3362
1311	kittylust-ocelotvm	35	11	3	7	5	609	117
1312	kklisura-props-to-constants-generator	17	7	2	4	5	113	53
1313	knowm-jspice	68	40	4	26	8	21317	592
	koen-serneels-ws-proxy	34	13	7	6	3	355	158
1314	koendesnacht-bow-utils	91	30	9	19	6	2403	226
1315	kohsuke-wordnet-random-name	2	2	0	2	4	2971622	7
	kolchagov-java-crud-api	46	29	7	20	6	1022241	2781
1316	konsolas-ConditionalCommands	2	1	1	0	1	12	8
1317	KosherJava-zmanim	3	3	0	3	2	24	10
	kravchik-jcommon	58	27	5	18	6	860	255
1318	kristofa-mock-http-server	231	96	40	49	7	6162	735
1319	kristofa-wicket-tagcloud	11	2	0	2	3	45	26
	krpors-delver	7	1	0	1	2	31	17
1320	krullert-universe	157	84	40	43	5	10544	408
	ksprojects-zkcopy	211	117	4	103	6	207226	2061
1321	kstateome-canvas-api	181	74	26	44	5	6316	444
1322	Kuangcp-NettyBook2	2	1	0	1	3	4000012	16
1323	Kugin-data-reconciliation	41	18	6	11	7	1006	116
	kungfoo-geohash-java	40	20	1	18	5	2556349	230619
1324	Kurento-kurento-module-creator	172	107	29	65	7	185162	1469
1325	kwart-demo-kerberos-in-java	45	20	2	16	5	705	158
	Labs64-swid-generator	26	10	4	6	3	123	42
1326	lafaspot-ja3_4java	10	1	0	1	2	38	20
1327	LarryDpk-Google-Bard	410	198	19	160	6	129588	3102
	lastaflute-lastaflute	329	114	27	76	7	39342	4575
1328	lastfm-coverartarchive-api	145	51	19	29	6	2256	375
1329	LatencyUtils-LatencyUtils	20	9	3	6	4	321	127
	laze-freemarker-java-8	208	77	21	49	7	119684	1113
1330	lbehnke-hierarchical-clustering-java	15	10	2	8	3	11165297	3184
1331	Lcry-java-png-compress-util	6	0	0	0	0	13	13
	lemire-externalsortinginjava	49	21	2	14	7	1392	273
1332	leonbloy-pngj	132	60	17	39	5	156399	619
1333	leonhad-paradoxdriver	170	96	21	69	7	4564442	2357
	leonliao-wechat-app-pay-java-sdk	292	127	39	83	8	10754	1220
1334	lerndevops-samplejavaapp	33	8	4	4	2	109	48
1335	lettuce-io-lettuce-core	1356	475	105	335	6	2439368	7239
	levigo-jbig2-imageio	39	25	6	18	5	15996	410
1336	lexburner-consistent-hash-algorithm	3	2	0	1	6	56100216	27
1337	lexburner-kdio	4	2	1	1	2	8198	6
	lfkdsk-bnf-ast	47	17	11	6	3	633	110
1338	lhncbc-metamaplite	126	83	17	56	11	23073	1685
1339	liangbaika-validate	2	0	0	0	0	4	4
	LianjiaTech-json-diff	46	15	8	7	4	6542	441
1340	libcoolsocet-java	8	3	1	2	3	43	26
1341	LibrePDF-OpenRTF	54	15	5	9	5	322	99
	lightningMan-flash-netty	116	37	6	31	4	981	272
1342	lightoze-gwt-i18n-server	42	24	6	15	5	4306	541
1343	lingyejun-tick-authenticator	6	3	1	2	2	448	20
	linked-solutions-jarql	265	119	39	76	5	9848	1679
1344	linux-china-plantuml-gist	260	115	12	98	6	88294	941
1345	linux-china-rocker-template-demo	32	7	2	5	3	70	48
	linux-china-toolchains-maven-plugin	103	37	15	21	5	3423	276
1346	liqpay-sdk-java	15	4	0	3	5	104	56
1347	liuanxin-api-document	49	6	2	4	3	141	87
	liudongdong0909-mybatis-generator-core-fix	20	16	4	8	5	973	125
1348	LiveRamp-HyperMinHash-java	9	6	0	5	5	33218916	72
1349	lizard-framework-lizard-spi	3	2	0	2	2	70	8
	llatinov-sample-dropwizard-rest-stub	7	2	0	2	4	38	20
1350	loadtest4j-loadtest4j	247	118	5	105	6	707196	1569
1351	locationtech-spatial4j	451	280	66	200	7	5804871	7919
	loehndorf-scengen	6	2	0	0	5	67	19
1352	LogisticsCraft-OcclusionCulling	6	0	0	0	0	592	19
1353	logpresso-CVE-2021-44228-Scanner	34	20	4	13	6	9058	113
	loong0306-commutits4j	56	10	1	9	4	198	121
1354	lucaspozac-contiperf	74	52	16	34	5	18109	236
1355	luigiselmi-flink-kafka-consumer	7	1	0	1	2	16009	13
	lujinfeifly-jsoncode	6	6	2	4	4	361	51
1356	lukas-vlcek-elasticsearch.demo	1123	525	163	324	7	147316	8229
1357	lukfor-pgs-calc	355	230	56	160	7	55087678	7759
	lyg5623-lightgbm_predict4j	106	27	10	17	4	100353	240
1358	lzgabel-camunda-cloud-bpmn-converter	148	89	30	52	6	116093	1359
1359	macacajs-wd.java	476	183	67	109	6	10938	1767
	magdel-MapNav	9	6	5	1	2	40	8
1360	MagicTheGathering-mtg-sdk-java	330	153	62	82	7	3487220	9749
1361	mahjong4j-mahjong4j	116	101	54	47	4	22213	729
1362	maihaoche-rocketmq-spring-boot-starter	613	298	71	201	6	44468	2141
1363								
1364								
1365								



	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1366								
1367	mailjet-mailjet-apiv3-java	126	59	30	26	6	2537	478
1368	mambu-gmbh-Mambu-APIs-Java	148	38	14	20	5	74652	373
1368	mangstadt-biweekly	1006	335	112	199	7	2569942	7283
1369	ManuelB-facebook-recommender-demo	22	16	5	11	3	645500	155
1370	mapping-java-maven-calculator-web-app	1	0	0	0	0	2	2
1370	marcosvidolin-doco	186	68	23	39	8	1403	501
1371	MarkShen1992-Mashibing_High_Concurrency	5	1	0	1	2	12	10
1372	marshall-path-classloader	45	10	5	4	6	280	134
1372	marshall-svn-diffstat	18	1	0	1	3	22	10
1373	martin-g-wicket-jquery-selectors	175	82	34	42	6	2145	534
1374	martincooper-java-datatable	30	17	13	3	5	4433	162
1374	marwin1991-keep-changelog-maven-plugin	15	8	1	3	6	112	38
1375	Maschell-JNUSLib	23	11	2	8	5	14974	68
1376	massigerardi-ta4j-strategy-parser	100	34	4	27	5	383902	1032
1376	Mastercard-client-encryption-java	554	262	54	183	7	372232	8528
1377	Mastercard-oauth1-signer-java	95	21	10	8	7	201051	204
1378	mateiw-littlebasic	57	30	6	23	7	7486	647
1379	mattdavey-EuronextClone	243	123	36	83	5	35149	2206
1379	matthewhorridge-mdock	6	6	2	4	4	168	26
1380	matthiaszimmermann-ethereum-paper-wallet	253	91	21	64	7	15716	2537
1380	mattsheppard-gethostname4j	1	0	0	0	0	2	2
1381	maven-nar-nar-maven-plugin	148	95	43	50	6	5250	358
1382	maxmind-geopip-api-java	6	0	0	0	0	23	7
1382	maxtomin-decimal	6	2	1	1	2	3503	21
1383	mbizhani-Adroit	442	150	50	89	7	46695	2865
1384	mbronshteyn-quarkus-jdbi-project	2104	753	202	498	9	335936	11209
1384	mdeanda-lorem	9	5	0	5	4	10316	67
1385	mdewilde-opml-parser	330	175	28	130	6	66776	2002
1386	mdewilde-podcast-parser	213	68	17	43	6	88015	1032
1386	medmes-keycloak-monitoring-spi	35	23	7	14	6	28039	480
1387	meixuesong-aggregate-persistence	44	17	4	10	6	2375	251
1388	meltmedia-jgroups-aws	87	7	2	5	3	659	196
1388	mercado-pago-sdk-java	99	36	17	16	7	11260	784
1389	Mercateo-spring-security-jwt	395	182	25	137	6	191924	2393
1390	messai-engineering-Yuga	97	30	10	17	7	23241	457
1390	messenger4j-messenger4j	326	127	9	110	6	23117	1479
1391	metamug-java-jwt	11	10	3	7	3	303	40
1392	meteoinfo-wContour	1	0	0	0	0	2	2
1392	MezereonXP-AnomalyDetectTool	27	19	8	10	5	1323046	678
1393	mfathi91-persian-date-time	13	3	0	3	3	51	42
1394	mguymon-model-citizen	502	150	39	105	6	15735	1507
1394	mshams-jnbis	24	20	14	6	3	2357	68
1395	michaeltandy-log4j-json	29	12	5	5	5	342	69
1396	michaelwittig-java-q	19	16	4	11	5	314	90
1396	microsoft-AppCenter-Test-Appium-Java-Extensions	100	40	31	8	5	19931	381
1397	MieskeB-json-api-spring-boot	26	13	4	9	3	22003	159
1398	mike10004-common-helper	596	243	109	129	5	26582	2029
1398	mike706574-java-map-support	7	4	3	1	3	41	9
1399	mikera-enlight	71	42	12	29	6	153823	780
1399	mikera-mikera	229	81	48	27	7	64543	1209
1400	mikera-randomz	5	1	1	0	1	115	102
1401	mileschenrichs-QuifFFT	42	13	3	10	4	960	119
1402	mimno-Mallet	341	162	34	124	6	62585384	1379
1402	mincloud1501-DevOps	1	0	0	0	0	2	2
1403	mirabeau-nl-ceddl4j	72	43	17	22	6	25272	939
1404	MitchTalmadge-ASCII-Data	9	4	1	3	2	1523	32
1404	mixer-beam-client-java	46	19	8	10	5	304	119
1405	Mixermachine-base-test	32	20	3	17	3	32583	119
1406	mixpanel-mixpanel-java	33	15	7	7	5	11079	167
1406	mjsalerno-UnoBot	23	6	1	5	3	384	92
1407	mlaccetti-rocksaw	3	1	0	1	2	10	8
1408	mlieshoff-jcrapi	431	142	60	80	5	1297159	3247
1408	mock-server-mockserver-maven-plugin	715	289	65	203	7	310615	5210
1409	moenik-science-geogrid	7	4	2	2	4	4000577	63
1410	mojohaus-aspectj-maven-plugin	132	65	44	20	5	418067	31419
1410	mojohaus-extra-enforcer-rules	256	135	7	111	6	274543	1602
1411	mojohaus-license-maven-plugin	149	62	17	42	7	7165	548
1412	mokiat-java-data-front	336	152	38	101	6	24300	1154
1412	monitorjbl-excel-streaming-reader	266	102	39	56	6	31242	1806
1413	monkeymq-jgossip	228	83	27	51	6	5359	971
1414	MottoX-BeanUtils	6	2	1	0	5	61	31
1414	MottoX-TAOMP	7	4	2	2	4	1700035	17
1415	MountCloud-graphql-client	52	8	2	6	4	167	134
1416	moznion-java-random-string	9	6	1	5	3	583	64
1416	mp911de-logstash-gelf	1184	420	88	289	7	599296	33516
1417	mpatric-mp3agic	233	104	16	81	6	21781	730
1418	MPriess-GeoJSON-POJO	106	61	23	32	6	5355	544
1418	mraible-jhipster6-demo	257	104	79	24	5	174121	2380
1419	MRPanyu-excel-imp-exp	428	172	58	101	8	207457	6649
1420	msanez-sonar-branch-community	334	145	13	120	6	205991	2127
1420	msarhan-ummalkura-calendar	3	0	0	0	0	9	9
1421	msemys-esjc	53	32	9	23	3	615	136
1422	msigwart-fakeload	387	171	22	139	7	3134813	2102
1422	msojocs-OmenChallengeHelper	2	0	0	0	0	6	6
1423	mulesoft-labs-rhinodo	148	72	33	37	7	13413	453
1424	murffi-zebra4j	145	54	19	35	4	685081	3671
1424	murrelsCoding-auth	1	0	0	0	0	2	2
1425	MutabilityDetector-MutabilityDetector	657	287	64	204	6	349386	5808
1426	mvallim-emv-qrcode	80	26	19	7	4	4353	356
1426	mvel-mvel	808	159	34	111	8	10251214	9636

	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1431								
1432	mvp4g-mvp4g	371	122	23	85	7	48686	1841
1433	mvpjava-springboot-JUnit5-tutorial	168	86	4	75	6	6955	760
1434	mwanji-toml4j	127	72	21	47	7	17931	1295
1435	mybatis-mapper-provider	335	145	34	102	11	13150	910
1436	myui-btree4j	44	14	1	12	7	40361420	1546
1437	named-data-jndn	128	67	24	43	4	6820	553
1438	naosense-markdown-preview-sync	11	1	0	1	3	28	25
1439	narupley-not-going-to-be-commons-ssl	499	205	28	153	7	477767	3278
1440	natf17-shopify-embedded-app	1235	508	111	360	10	524827	4727
1441	naver-lucy-xss-servlet-filter	51	25	7	17	5	8541	405
1442	NawaMan-NullableJ	12	5	0	5	2	59	27
1443	neilswainston-FragGenie	93	48	16	31	7	13403	657
1444	neo-search-multiple-string-searcher	47	15	4	11	4	33453	323
1445	Neop-mudmap2	106	40	12	25	9	5009	687
1446	netarchivesuite-heritrix3-wrapper	6	1	0	1	2	32	30
1447	neuland-jade4j	303	144	31	95	7	417019	5982
1448	nicolas-raoul-jakaroma	10	9	2	6	5	654	129
1449	nicoulaj-checksum-maven-plugin	126	33	1	29	7	9944	1934
1450	niesfisch-java-code-tracer	77	25	2	22	5	653	134
1451	NightFlightCaptain-ssm	2	0	0	0	0	7	7
1452	Nilhcem-FakeSMTP	110	31	6	25	4	681	241
1453	ning-compress	61	12	6	6	3	7587	118
1454	ning-tr13	7	5	1	3	5	108	29
1455	NishkarshRaj-Maven-Using-CMD	2	0	0	0	0	2	2
1456	nla-outbackcdx	620	215	79	121	6	19415	2271
1457	NLP2RDF-NIF-lib	577	268	95	153	7	109705	3506
1458	NLPchina-ansj_seg	187	84	23	48	7	5267696	10434
1459	noelherrick-jell	14	7	2	5	4	3173	87
1460	nonblocking-nonsnapshot-maven-plugin	76	33	3	21	10	1683	372
1461	noophq-subtitle	14	12	9	2	6	25956	29
1462	Nordstrom-nifi_terraform_generator	63	39	9	23	5	3202	513
1463	nothingax-micro-DB	88	46	9	33	6	2128151	1079
1464	npathai-hamcrest-optional	3	2	0	2	3	39	11
1465	nRo-DataFrame	240	126	30	90	7	62708	2472
1466	NTTDATA-EMEA-QAT-cherry	207	106	6	96	6	13079	918
1467	nurkiewicz-typeof	2	1	1	0	1	4	2
1468	nutzam-nutzwx	116	59	14	41	6	22943	959
1469	o19s-RankyMcRankFace	62	41	11	25	8	84177	419
1470	ocaffe-numero-por-extenso	4	4	1	2	5	2353	65
1471	ocpsoft-common	10	8	2	5	5	211	49
1472	octavian-h-time-series-math	220	121	6	105	6	1295220	542408
1473	odiszapc-nginx-java-parser	94	54	11	37	7	34869	1141
1474	offbynull-kademlia	45	19	7	7	5	10828	619
1475	offbynull-portmapper	77	41	14	21	7	10744	486
1476	ogibayashi-kafka-topic-exporter	85	43	12	26	6	2640	227
1477	ogrodnek-java_fathom	1	1	0	1	2	26	2
1478	ohioit-rundecck-http-plugin	648	279	103	164	7	850795	3659
1479	olcaytaner-201-DataStructures-Java	2	2	0	2	2	35	9
1480	OnlineCodex-OnlineCodex	190	79	20	57	5	457749	38881
1481	ooxi-jdatauri	5	2	0	2	4	102	28
1482	open-dis-open-dis-java	41	6	4	2	2	133	60
1483	open-eid-cdoc4j	371	176	28	146	7	99334	2440
1484	openapi-tools-swagger-maven-plugin	15	1	0	1	2	30	26
1485	opencharles-charles-rest	294	115	70	45	4	26096	1988
1486	opendatalab-de-geojson-jackson	140	68	30	33	6	9717	680
1487	OpenGamma-ElSql	61	28	7	19	7	3590	397
1488	opengeospatial-ets-ogcapi-features10	932	409	122	252	9	3761717	18157
1489	openhkr-hkr-si	118	29	6	19	5	3043	281
1490	OpenLiberty-ci.common	161	62	8	46	7	3538	542
1491	openshift-openshift-restclient-java	639	237	32	187	6	1166616	5015
1492	openskynetwork-java-adbs	6	1	0	1	2	11	7
1493	opentimestamps-java-opentimestamps	123	45	8	26	10	121831	1658
1494	opentracing-contrib-java-concurrent	26	7	2	5	4	374	46
1495	opentracing-contrib-java-jdbc	73	27	8	18	5	1365	228
1496	optimize-command4j	29	13	6	7	3	282	58
1497	OrderLab-OKLib	116	60	9	42	7	271070	4364
1498	OrhanKupusoglu-bazelize-maven-plugin	15	3	1	2	2	43	36
1499	os72-protobuf-dynamic	70	35	12	20	5	3320	370
1500	osglworks-java-tool	477	135	50	77	7	1356768	2025
1501	oskopek-javaanpr	214	108	7	95	6	92632	1076
1502	OWASP-json-sanitizer	21	4	1	2	5	62899	12716
1503	OWASP-OWASP-WebScarab	38	12	9	3	2	991	125
1504	OWASP-url-classifier	170	79	30	45	7	13127611	10928
1505	Pablissimo-SonarTsPlugin	370	177	30	132	6	395513	3085
1506	pablobastidasv-kc_security	75	45	21	22	6	4517	580
1507	package-url-packageurl-java	34	17	5	12	4	2634	321
1508	PacktPublishing-Learn-Algorithms-and-Data-Stru...	33	14	4	7	5	557	181
1509	pagehelper-Mybatis-PageHelper	654	246	70	157	12	368096	3715
1510	palatable-lambda	667	167	41	114	6	5307960	43855
1511	palatable-shoki	58	23	14	8	5	48044	399
1512	palindromicity-simple-syslog	85	48	7	36	5	11170066	2461
1513	parship-roproperty	350	155	15	123	7	288612	2461
1514	pascalgn-jiracli	424	201	62	126	7	37009	3793
1515	patrickfav-uber-adb-tools	63	44	9	23	6	10610	396
1516	patriques82-alphavantage4j	91	14	8	6	3	1796	184
1517	pawandubey-griffin	2	0	0	0	0	9	9
1518	PawelGorny-lostword	57	22	6	15	5	45980	117
1519	paypal-Gibberish-Detector-Java	6	6	1	5	4	716142	8364
1520	PearsonEducation-StatsAgg	702	257	74	171	6	99818	4868
1521	pebbleblog-pebble	250	100	27	64	8	50427	591
1492								
1493								
1494								
1495								

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1496								
1497	pedrovg-Algorithms	147	52	38	14	4	567	228
1498	peter-lawrey-admin-Chronicle-Ticker	2	1	0	1	2	78	18
1499	peterbencze-serritor	334	169	20	133	6	216053	12824
1500	PeterisP-morphology	154	69	11	43	7	67493035	28318
1501	petterobam-mds2index.html	175	87	25	56	6	71868	2694
1502	pfmiles-min-velocity	93	24	4	15	7	2228	340
1503	PhantomThief-thrift-pool-client	11	6	3	3	2	1544	18
1504	phax-ph-events	91	34	10	21	7	3714	200
1505	pheerathach-promptpay	14	11	2	9	4	2270	59
1506	philihp-weblabora	52	29	12	16	5	35108	853
1507	pierredavidbelanger-logback-awslogs-appender	214	99	6	84	6	10373	996
1508	pingcap-tidb-loadbalance	16	7	1	6	3	54	21
1509	pizihao-crow	104	43	10	30	5	1665614	1223
1510	pk8est-table-printer	64	26	12	13	5	17260	998
1511	PlayPen-playpen-core	6	3	1	2	2	27	18
1512	plutext-docx4j-export-FO	449	231	55	157	7	61706	1626
1513	pmlopes-aws-lambda-native-vertx	62	31	9	21	5	3493	148
1514	PoslavskySV-libdivide4j	9	8	0	8	2	226476	38
1515	pouyaesm-signed-community-detection	16	12	4	5	5	2190	110
1516	ppke-nlpg-purepos	115	53	13	27	5	5938687	658
1517	prat-man-unique4j	45	18	6	7	12	929	117
1518	printingin3d-javascad	298	165	27	126	7	9669850	7022
1519	profesorfalken-jPowerShell	3	0	0	0	0	8	8
1520	profesorfalken-jSensors	26	13	5	5	5	845	223
1521	Progether-JAdventure	177	62	12	48	6	34093	735
1522	Proteus1989-Air-Explorer-Decrypter	5	3	0	3	4	28	11
1523	prpatel-serverless-java-mini-workshop	0	0	0	0	0	0	0
1524	psjava-psjava	112	69	14	55	4	49503	1255
1525	purcell-jargs	10	6	3	3	4	384	22
1526	purecloudlabs-elasticsearch-lambda	311	144	48	89	6	5818	882
1527	PureMVC-puremvc-java-standard-framework	7	0	0	0	0	30	15
1528	PvdBerg1998-PNet	43	10	1	9	4	442	64
1529	pvto-konte-art	73	42	9	31	5	2138	268
1530	qala-io-java-beginner-course	2	2	1	1	2	9	3
1531	qmx-jitescript	22	9	4	5	4	480	79
1532	qoomon-banking-swift-messages-java	317	143	13	116	6	1324263	2293
1533	qqilhq-property-editor	11	4	2	2	2	47	19
1534	qubole-qds-sdk-java	465	195	53	124	8	30549	1805
1535	qwhai-algorithms-sort	10	4	3	1	2	428	32
1536	qzw1210-JustAuth	116	53	11	40	7	2818	460
1537	radkovo-Pdf2Dom	619	241	91	131	7	732207	6010
1538	RagedUnicorn-github-release-maven-plugin	225	107	40	64	5	31166	3283
1539	RakhmedovRS-DataStructuresAndAlgorithmsInJava2n...	77	30	14	16	2	4987	189
1540	ralscha-bsoncodec	38	12	2	9	5	461	76
1541	random-maven-profile-activator-extension	32	6	2	4	2	113	59
1542	raydac-java-binary-block-parser	3696	454	82	358	7	1796239	17187
1543	RayDeCampo-java-xirr	190	85	5	73	6	14982	858
1544	raymanrt-orientqb	42	24	10	13	6	6290	121
1545	razorpay-razorpay-java	321	165	16	133	6	149997	2576
1546	reactiverse-vertx-maven-plugin	752	357	72	256	8	361303	6247
1547	realexpayments-rxp-hpp-java	328	114	36	65	6	91035	1772
1548	RealZimboGuy-ewelink-api-java	13	11	1	10	3	285	43
1549	reckart-tt4j	18	7	3	4	2	86	44
1550	redlink-gmbh-redlink-java-sdk	152	63	19	43	5	1437	376
1551	reggert-reb4j	12	4	3	1	2	53	18
1552	reinert-JJSchema	83	44	19	19	5	9660	271
1553	remondis-it-pact-consumer-builder	416	231	42	174	7	34070	2589
1554	renfei-ik-analyzer	40	20	2	15	5	28817059	922
1555	resourcepool-ssdp-client	8	6	1	4	5	101	29
1556	RestComm-jasn	14	6	1	5	2	222	31
1557	RestExpress-PluginExpress	508	182	81	90	7	173849	998
1558	resurfaceio-logger-java	84	27	9	14	6	15012	671
1559	RetailMeNot-TestRailSDK	143	55	21	33	5	42549	990
1560	retest-recheck.cli	196	64	23	39	5	1375	403
	retog-wymiwyg-commons-core	6	4	0	4	2	45	17
	retomerz-mosquito	1	0	0	0	0	5	5
1561	rex-soft-rexdb	44	12	0	11	8	639	133
1562	ricksbrown-jgenhtml	84	56	13	38	6	908197	805
1563	righttod-pst-digger	84	30	8	21	5	1287	201
1564	RIGS-IT-sonar-xanitizer	101	50	15	32	7	194575	547
1565	ripreal-V8LogScanner	458	187	32	140	6	44185	2526
1566	riversun-bigdoc	14	14	3	10	6	2998	106
1567	riversun-java-promise	84	39	20	18	6	9636	166
1568	rjohnsondev-java-libpst	6	4	0	4	3	165	15
1569	rjstanford-spreedly-java	4	1	0	1	2	13	9
1570	rjwut-ian	231	80	31	43	7	6439	724
1571	RKumsher-utils	47	10	6	4	3	441	124
1572	rnorth-duct-tape	23	7	3	4	2	1149	44
1573	rnorth-visible-assertions	28	14	2	12	3	758	94
1574	robert-bor-aho-corasick	82	17	5	12	4	97060	444
1575	RobertStewart-privateer	3	0	0	0	0	6	6
1576	robshep-logback-logdna	112	33	9	22	5	1042	276
1577	rohanpadhye-vasco	1398	652	223	395	8	20382156	106320
1578	RokLenarcic-AhoCorasick	45	44	14	28	6	37722	2495
1579	romanb-JPA-NestedSet	533	325	99	201	7	30950	2484
1580	rombert-desktop-maven-notifier	6	0	0	0	0	11	11
1581	romix-java-concurrent-hash-trie-map	41	6	4	2	3	324715	2292
1582	ronmamo-reflections	131	78	32	45	5	226395	857
1583	roskart-dropwizard-jaxws	852	333	80	241	8	39879	1912
1584	rovats-java-utils	6	1	1	0	1	26	16

	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1561	rpau-javalang	92	58	20	34	5	67939	2199
1562	rponte-dbunitmanager	8	3	2	1	2	28	15
1563	rponte-pin-decrypter	3	3	0	3	2	50	6
1564	rpuch-xremoting	290	124	51	62	5	46810	804
1565	rrice-java-string-similarity	10	3	0	3	3	221	31
1566	rsatrio-Keycloak-Federation-ExistingDB	375	180	16	147	6	712140	6488
1566	rstoyanchev-spring-mvc-chat	389	161	40	115	5	4459	706
1567	RTBHOUSE-avro-fastserde	259	71	20	50	5	56174	1750
1567	rtyley-animated-gif-lib-for-java	8	3	0	3	3	62	11
1568	RUB-NDS-BurpSSOExtension	21	6	0	6	3	726	354
1569	rusakovichma-DocsReporter	140	50	26	23	5	1235546	388
1569	rweather-noise-java	13	8	3	5	2	441981	120
1570	ryenus-rop	14	5	1	2	5	533	237
1571	rynr-launchpad	1	0	0	0	0	6	6
1572	rythmengine-rythmengine	1166	253	68	164	7	2209972	6045
1572	sabomichal-liquibase-mssql	73	33	3	20	6	23477	349
1573	sagiegurari-fax4j	703	306	37	244	6	490765	3989
1574	sailthru-sailthru-java-client	304	129	7	106	6	173596	2207
1574	sambatrister-sql-formatter	6	0	0	0	0	7	7
1575	sangkeon-java-opa-wasm	24	7	2	5	2	136	40
1575	sangupta-bloomfilter	14	0	0	0	0	2000027	28
1576	sangupta-gather	41	17	10	7	3	2279	183
1577	sangupta-murmur	16	1	0	1	3	104	64
1578	saoj-mentabean	160	78	16	55	7	72221	3691
1578	SAP-archive-cloud-paulpredicts	1089	490	138	317	7	379682	14207
1579	sarojaba-prettytable4j	61	13	6	7	3	743	126
1579	Sayi-swagger-diff	305	195	37	121	8	182563	3293
1580	sbesada-java.math.expression.parser	21	14	3	11	4	328001872	135
1581	sbesada-java.math.numerical.library	64	28	15	13	4	1297684	407
1581	schmatterer-musicbrainzws2-java	204	119	33	79	7	121687	1257
1582	SchweizerischeMusbahn-springboot-graceful-...	64	16	3	12	5	1367	145
1583	scijava-scripting-clojure	163	77	19	51	6	73632	955
1583	Scout24-illegal-transitive-dependency-check	53	25	6	15	7	4551	176
1584	Scout24-spring-boot-rpm-maven-plugin	90	40	10	26	7	100523	436
1585	scoutant-polyline-decoder	12	4	1	3	2	1058	58
1586	scouter-contrib-scouter-plugin-server-alert-sla...	6	1	0	1	2	33	11
1586	scylladb-kafka-connect-scylladb	54	12	6	5	7	673	127
1587	sd4324530-JTuple	137	22	7	15	4	1435	212
1587	sdorra-shiro-unit	270	129	7	109	6	24499	1169
1588	seahen-maven-s3-wagon	14	1	1	0	1	153	29
1589	seansegal-tincisnotcatan	79	37	10	23	5	16639	446
1589	searls-jasmine-maven-plugin	483	229	33	175	6	1787995	4634
1590	seaswalker-netty-wheel	41	12	2	9	6	294	78
1591	secure-software-engineering-sootdiff	105	54	25	28	5	390996	1525
1592	sedran-moment4j	6	2	0	2	3	26	18
1592	seintur-jmixer	131	62	26	35	5	2550	349
1593	seregamorph-hamcrest-more-matchers	34	21	6	14	5	265	111
1594	serg472-htmlcompressor	271	174	53	112	8	771785	11361
1594	sgoertzen-sonar-break-maven-plugin	82	48	22	24	6	1003	243
1595	sgoeschl-freemarker-cli	882	320	128	169	7	309231	4880
1596	sgreben-regex-builder	39	20	3	15	6	2985	257
1596	shapesecurity-salvation	64	43	10	30	5	27572	677
1597	shazam-shazamcrest	156	67	23	41	5	167637	903
1597	shipilev-jdk-backports-monitor	4	3	0	3	3	24	15
1598	shred-commons-xml	198	89	4	78	6	26457	941
1599	shreyasht-java8-validator	2	1	0	1	3	22	8
1599	Shunshun94-discord-bdcebot	212	89	38	48	9	25411	2261
1600	SiftScience-kafka-assigner	27	14	2	10	6	1229	202
1601	silentsoft-oss-notice-file-generator	8	3	1	2	3	455	22
1602	simonnagl-netdata-java-orchestrator	773	372	51	289	6	615926	9615
1602	SimpleAstronomy-simple-astronomy-lib	5	3	0	3	4	120171	20
1603	SimpleFinance-kafka-dropwizard-reporter	29	1	0	1	2	104	62
1603	simplenlg-simplenlg	263	134	57	65	7	17950629	2182
1604	simplymequeeny-json-string-schema-generator	83	40	8	26	5	9078	398
1605	sinrimin-netty-socktio-client	93	31	16	15	3	13649	120
1606	sjbutler-idtk-j	28	8	5	3	3	189	85
1606	skayvanfar-cheetah	5	0	0	0	0	14	14
1607	skyscreamer-JSONassert	51	32	5	24	7	8488	282
1608	slub-urnlib	36	11	4	5	8	953	145
1608	smacke-jaydio	20	7	4	3	2	101	28
1609	smallest-fastjson-jaxrs-json-provider	563	307	78	200	8	245011	3325
1610	smartics-smartics-jboss-modules-maven-plugin	68	43	17	25	5	1637	259
1610	smartics-RestFixture	193	87	29	51	7	7649	619
1611	smartystreets-smartystreets-java-sdk	369	170	30	124	6	30436	2942
1611	smola-galimatis	147	62	19	42	5	422921	1768
1612	smsapi-smsapi-java-client	1	0	0	0	0	2	2
1613	sndyuk-logback-more-appenders	363	139	46	86	6	18522	2401
1613	solita-functional-utils	75	28	9	17	5	9896	927
1614	Sonal0409-DevOpsCodeDemo	20	5	1	4	2	108	46
1615	SonarSource-sonar-auth-bitbucket	309	152	14	124	6	58765	1412
1615	SonarSource-sonar-auth-github	110	49	12	33	5	5052	412
1616	sonatype-heuristic-version	120	70	14	50	7	5156852	3955
1617	sonian-elasticsearch-jetty	1445	713	229	424	7	730837	12460
1617	soot-oss-heros	393	212	29	157	7	235000	3286
1618	sorra-TraceSonar	2	2	1	1	2	10	7
1619	sparkapi-SparkJava	295	87	38	43	7	93524	1356
1619	spinscale-elasticsearch-graphite-plugin	1387	694	226	415	7	352700	9263
1620	spooofzu-DeepViolet	99	42	18	20	6	1300	569
1621	spotify-annoy-java	4	4	1	2	5	1362	46
1621	spotify-async-datastore-client	123	39	12	25	5	2549	407

	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1626								
1627	spotify-futures-extra	304	124	12	98	6	80798	1229
1628	spotify-hdfs2cass	67	22	7	14	5	678	161
1629	spotify-netty-zmtp	326	111	37	70	5	71180	787
1630	spotify-simple-bigtable	27	11	8	3	2	799	54
1631	spotify-ssh-agent-proxy	31	7	1	6	4	142	58
1632	spotify-trickle	192	85	29	56	4	11278	1147
1633	spring-projects-spring-session-data-mongodb	177	57	27	28	5	29583	310
1634	springml-salesforce-wave-api	910	327	76	230	6	385107	3843
1635	SpringStudent-GyJdbc	370	185	39	136	5	61252	2494
1636	spullara-cli-parser	55	14	9	5	3	5789	505
1637	spullara-java-future-jdk8	16	5	0	4	5	433	136
1638	spyhunter99-installcert	54	7	0	7	3	500133	121
1639	square-burst	13	3	1	2	2	56	26
1640	square-gifencoder	29	23	2	21	4	12568	462
1641	square-jna-gmp	19	8	5	3	3	160	79
1642	square-osstrich	9	9	7	2	2	6121	12
1643	square-pagerduty-incidents	1	1	0	1	2	6	2
1644	sranka-jdbcimage	37	16	5	9	5	686	90
1645	srikanth-lingala-zip4j	16	0	0	0	0	76	44
1646	sritejakv-splitwise-java	272	139	16	109	6	152705	1867
1647	ssedano-jump-consistent-hash	208	112	5	99	6	68085	1392
1648	sstrickx-yahooofinance-api	4	1	1	0	1	10	9
1649	starkbank-ecdsa-java	104	36	14	19	7	20758	425
1650	StarlangSoftware-Corpus	7	5	1	4	2	117	60
1651	StarlangSoftware-TurkishDeasciifier	20	14	5	9	3	421989	369
1652	StarlangSoftware-TurkishMorphologicalAnalysis	51	34	11	22	5	1512396	5340
1653	StarlangSoftware-TurkishMorphologicalDisambiguation	154	56	10	42	9	47373793	22862
1654	StarlangSoftware-TurkishPropBank	71	50	15	33	5	244001149	28275
1655	StarlangSoftware-TurkishSentiNet	15	10	6	4	3	36922516	93
1656	StarlangSoftware-TurkishSpellChecker	7	4	0	2	5	63329671	31
1657	StaticBeagle-ETK4J	77	56	8	43	7	24542090	27692
1658	stefanbirkner-fake-sftp-server-rule	20	12	8	4	2	349	74
1659	stefano81-dcpabe	288	141	40	91	6	29235	1178
1660	STEMLab-JIneditor	341	209	66	124	7	204106	6283
1661	steveash-jopenfst	55	13	2	11	3	220	162
1662	stevespringett-CPE-Parser	131	55	20	35	4	129815	5720
1663	stevespringett-cvss-calculator	106	41	15	26	4	2641	547
1664	stevespringett-owasp-risk-rating-calculator	3	3	0	3	2	518	12
1665	stevespringett-threatmodel-sdk	1	0	0	0	0	4	4
1666	stoicflame-ofx4j	21	9	1	7	6	2750	103
1667	str4d-ed25519-java	147	61	20	39	5	26209	492
1668	streamx-co-ExTree	20	10	3	7	3	15730	57
1669	streamx-co-FluentJPA	3	1	1	0	1	79	3
1670	stripe-interview-java-interview-prep	142	42	22	19	5	54920	1364
1671	studerw-td-ameritrade-client	2	0	0	0	0	6	6
1672	stupid1t-poi-excel	532	159	59	89	6	49242	3616
1673	SumoLogic-sumologic-kinesis-connector	257	102	29	59	6	86450	3731
1674	Supera-Inovacao-Tecnologia-PS-Java	417	215	77	126	6	15759	1549
1675	supercargo-guice-persist-jooq	559	152	37	105	7	17713	1807
1676	SValentyn-Payment-Management-System	463	185	31	140	6	169215	2088
1677	SvenEwald-xmlbeam	12	0	0	0	0	20	17
1678	Sweetiee-yi-Jaba	235	86	20	55	12	1097848	1614
1679	swtupro-jingtum-lib-java	34	19	7	10	5	22132139	4969
1680	sylvainlaurent-swagger-validator-maven-plugin	154	109	8	100	7	15656	2009
1681	sysco-middleware-kafka-client-collector	678	263	79	158	8	107685	11323
1682	szagriichuk-search-api	187	109	22	85	7	22881	2895
1683	tacitknowledge-jcr-mock	20	13	0	13	3	19726	65
1684	TakahikoKawasaki-nv-i18n	72	13	6	7	4	2704	212
1685	TakahikoKawasaki-nv-websocket-client	12	3	0	3	2	287	23
1686	takari-directory-watcher	11	3	0	2	5	120	37
1687	takari-maven-profiler	21	7	4	3	4	151	33
1688	takari-takari-local-repository	125	46	23	22	5	149481	580
1689	takashi-ishio-selogger	120	73	14	52	7	22189	1329
1690	talios-coffee-maven-plugin	128	68	21	45	7	439842	615
	taurus-io-expression	120	61	29	32	4	2267469	1833
	taxjar-taxjar-java	86	45	5	36	7	707602	1399
	tbuktu-ntru	115	29	22	7	3	8439	337
	tchristofferson-Config-Updater	28	9	3	6	4	1168	145
	tcurdt-hadoop-lzo-java	85	45	8	27	7	136864	3870
	tcurdt-jdeb	5	1	0	1	2	21	8
	tcurdt-jdependency	739	370	39	308	7	318855	4339
	tdebatty-java-LSH	57	27	3	23	8	1019520	1187
	tdebatty-java-string-similarity	4	2	0	2	4	9008	609
	tdunning-anomaly-detection	20	18	10	6	7	334	109
	tdunning-bandit-ranking	1	0	0	0	0	3	3
	tdunning-open-json	14	10	8	2	3	8004874	30
	teacy-apns4j	57	26	6	20	4	133324	460
	tecsinapse-tecsinapse-data-io	10	1	0	0	5	54	20
	telefonicaid-netphony-network-protocols	554	252	90	141	8	1124098	19165
	tencentyun-cos-java-sdk-v4	256	190	39	145	6	107094	1466
	tenlee2012-elasticsearch-analysis-demo	12	1	1	0	1	16	13
	terrestris-shogun-legacy	71	29	11	17	5	909	185
	tfredrich-DateAdapterJ	103	32	4	24	6	2511	362
	thammegowda-tika-ner-corenlp	1	1	0	1	2	24	4
	ThangLeQuoc-aqi-calculator	195	66	21	35	7	20851	668
	Thare-Lam-fast-elasticsearch-query-builder	34	12	3	9	4	1782	187
	TheBlackChamber-commons-encryption	106	18	5	13	3	664	221
	theborakompanioni-thymeleaf-extras-shiro	187	116	7	106	10	1232681	3971
	thegedge-java-radix-tree	215	117	21	90	6	49331	4549
		18	4	1	3	4	2353667	3170



	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1691								
1692	TheHolyWaffle-TeamSpeak-3-Java-API	16	7	4	3	3	163	62
1693	ThinkingDataAnalytics-java-sdk	70	24	3	19	7	2816	275
1694	thomasmueller-minperf	20	11	3	7	5	6734102	418
1694	thomasmueller-tinyStats	22	11	3	8	4	4071777	865
1695	ThoughtWire-hazelcast-locks	388	188	43	131	8	63464	3714
1695	thrau-jarchivelib	228	99	29	61	7	10889	834
1696	threedr3am-dubbo-exp	10	1	1	0	1	11	7
1697	threefish-nutz-sqltpl	140	58	11	38	7	24856	1521
1697	threerings-react	91	11	6	4	5	594	183
1698	ThreeTen-threetenbp	375	227	42	174	7	14423427	2318
1699	thundra-io-thundra-lambda-warmup	355	147	15	120	8	39292	1606
1699	thymeleaf-thymeleaf-itorial	89	15	7	8	4	5862	3987
1700	thymeleaf-thymeleafexamples-layouts	5	1	1	0	1	11	10
1701	TiBeN-ia-rcade	62	30	5	16	6	3627	282
1701	tking-JSTUN	6	4	1	3	2	118	9
1702	tkutcher-jgrade	60	35	15	16	5	1177	134
1703	TNG-property-loader	305	132	7	109	6	330290	2462
1703	tobyweston-Refactoring-Chapter-1	5	5	1	3	5	142	30
1704	tommyettinger-BlazingChain	4	3	0	2	6	3434	40
1705	tommyettinger-RegExodus	31	12	5	5	5	711703	6202
1705	tomsik68-mclauncher-api	6	0	0	0	0	12	12
1706	tomwhite-set-game	54	38	14	20	5	2149530	36798
1707	tonikolaba-BatBat-Game	18	10	4	6	4	1775	43
1707	tony19-named-regex	20	8	2	5	5	470	77
1708	tonydeng-fmj	94	32	10	22	4	1165	257
1709	toolbox4minecraft-amidst	68	28	7	20	5	376586	882
1709	toolfactory-narcissus	17	5	0	5	3	248	144
1710	topwingo-zeroFlow	198	87	19	67	6	9567	977
1711	ToryZhou-design-pattern	50	14	1	13	2	150	91
1711	traiana-kafka-spiffe-principal	192	88	2	79	6	16550	842
1712	trekawek-coffee-gb	19	4	2	1	5	1256	138
1713	trganda-yaml2http	155	83	27	51	8	16242	1670
1713	Trigary-AdvancementCreator	25	8	3	5	2	3626	61
1714	triologygmbh-reCAPTCHA-V2-java	607	227	88	128	7	17564	1984
1715	tripluo-jrouter	631	274	68	194	6	411584	2187
1716	trystan-AsciiPanel	87	31	12	16	5	235433	586
1716	Tsovak-selenium-wrapper-framework	102	21	16	5	3	7976	473
1717	tsurdilo-temporal-java-workshop	1051	353	93	239	6	52514	4063
1717	tud-fop-j-Algo	1	1	0	0	5	761	44
1718	tupilabs-tap4j	123	39	12	24	5	14460	1308
1719	tv2norge-collab-java-serf-client	7	1	0	1	2	16	8
1719	tvesalainen-bcc	51	22	12	10	3	785	208
1720	twitter-joauth	56	25	11	13	5	679309	303
1721	twitter-netty-http2	158	50	14	36	4	2578	237
1721	twitter-nodes	90	26	14	11	5	4238	361
1722	twitter-sbf	91	50	28	19	7	833540	15121
1723	twitter-twitter-korean-text	45	13	12	1	2	12332671	49365
1723	typesafehub-netty-http-pipelining	43	16	4	12	4	1912	84
1724	uber-common-jvm-profiler	205	66	21	37	9	2575	550
1725	udger-udger-java	17	12	4	7	5	20293	54
1726	uklimaschewski-JMXWrapper	10	9	4	4	7	942	48
1726	ukman-kolobok	7	5	0	4	5	134	31
1727	undera-perfmon-agent	53	12	6	5	5	904	147
1727	unitsofmeasurement-unit-ri	52	16	5	9	5	1839	100
1728	unitsofmeasurement-uom-se	69	26	12	13	5	2946	200
1729	unruly-control	234	130	7	112	6	16018	992
1729	unruly-java-8-matchers	15	8	2	6	3	411	120
1730	uPortal-Project-portlet-utils	168	63	17	43	5	5240	579
1731	uPortal-Project-WebproxyPortlet	162	65	49	16	4	273796	2097
1731	uprotocol-platform-java	121	107	10	96	7	380671	2419
1732	uppyun-java-sdk	133	56	23	26	8	2918	395
1733	usingsky-KoreanLunarCalendar	3	0	0	0	0	6	6
1733	usnistgov-Lineage-Mapper	84	54	4	40	6	11783	899
1734	uwolfer-gerrit-rest-java-client	516	209	63	135	5	51052	2382
1735	valery1707-kaitai-maven-plugin	143	66	17	42	6	13977	1373
1735	valfirst-jbehave-junit-runner	563	340	38	270	6	742481	4651
1736	vangj-jbayes	303	104	42	53	6	1583859	1476
1737	vashishthask-eclipse-to-maven	43	13	8	5	3	327	72
1737	vasia-gelly-streaming	1005	447	157	268	7	345655	6283
1738	VaughnVernon-mockroservices-java	42	18	6	11	5	723	179
1739	vaulttec-sonar-auth-oidc	439	183	20	132	10	258272	2683
1739	vdurmont-emoji-java	33	22	3	18	5	194414	392
1740	vdurmont-etaprinter	22	3	0	3	3	61	48
1741	vdurmont-semver4j	22	16	1	15	4	7164	191
1741	VerbalExpressions-JavaVerbalExpressions	22	7	1	6	2	1016	142
1742	verilylifesciences-genomewarp	497	150	38	89	8	134140	2199
1743	vert-x3-vertx-docgen	69	32	6	21	7	25308	1254
1743	vert-x3-vertx-maven-starter	197	36	15	19	5	3410	326
1744	vibur-vibur-object-pool	4	0	0	0	0	4	4
1745	victor-porcar-delayed-batch-executor	75	40	8	31	5	200309	564
1745	victorrentea-clean-code-dive	4	1	0	1	2	12	8
1746	vidstige-jadb	275	138	13	115	8	25867	1136
1747	vincentrussell-java-ini-parser	43	14	4	9	7	473	155
1747	vinhkhuc-lbfgs4j	0	0	0	0	0	0	0
1748	vinta-pangu.java	7	3	2	0	5	27	15
1749	vitalidze-chromecast-java-api-v2	173	93	40	43	6	48360	1533
1749	vivekragunathan-JINQ	47	25	8	14	6	1229	221
1750	viz-centric-flair-commons	28	22	0	22	3	384	92
1751	vizor-games-infraworld-cornerstone	33	13	5	8	4	3392	505
1751	vlingo-xoom-auth	403	168	30	132	5	275560	1649
1752								
1753								
1754								
1755								

	project	# methods	# IMMs methods	# IMMs with 1 spec	# IMMs with < 5 specs	IMM max specs	# traces	# unique traces
1756								
1757	vlingo-xoom-cluster	640	231	22	193	6	594840	1983
1758	vlingo-xoom-helloworld	1000	415	108	279	7	204074	4092
1759	vlingo-xoom-streams	108	39	8	30	5	3418	192
1760	vlingo-xoom-symbio	158	67	16	48	6	285401	21656
1761	vmzakharov-dataframe-ec	301	127	48	75	5	638570	2260
1762	volkodavs-secret-santa	30	12	2	9	5	529	51
1763	volodya-lombrozo-hg-revision-plugin	63	14	0	14	2	221	115
1764	vs49688-RAFTools	87	30	14	16	3	2140	272
1765	w3blogfr-zebra-zpl	12	3	1	2	2	75	39
1766	walmartlabs-gozer	498	165	50	105	6	12572	1549
1767	warmuuh-libsass-maven-plugin	38	27	7	16	7	4939	114
1768	wavefrontHQ-wavefront-fdb-tailer	137	76	27	43	6	4074	607
1769	wavefrontHQ-wftop	80	40	11	25	5	2355	315
1770	waynedyck-gwt-gantt	7	3	0	3	2	93	32
1771	wcnwyx-gm-encryption	113	97	1	95	7	32147	1884
1772	wdtinc-mapbox-vector-tile-java	168	103	34	66	7	59368	1549
1773	wealthfront-thompson-sampling	202	87	4	76	6	5868	823
1774	weaverj-erserver	3	3	1	2	2	26	5
1775	webbit-webbit	425	178	20	140	8	27460	1703
1776	webbynet-protostuff-runtime-proto	62	26	11	12	6	6417	447
1777	webjars-webjars-locator	245	106	37	63	7	361374	1265
1778	weblyzard-nilsimsa	3	3	0	3	2	170	12
1779	webmate-io-webmate-sdk-java	144	53	24	24	6	3354	755
1780	WebThingsIO-webthing-java	42	20	4	16	4	1580	138
1781	wechatpay-apiv3-CertificateDownloader	60	21	6	12	5	1482	288
1782	weibocom-yar-java	95	51	26	22	6	4953	442
1783	welk1n-ReverseShell-Java	45	6	2	4	4	158	57
1784	wepay-WePay-Java-SDK	3	0	0	0	0	6	6
1785	weswilliams-GivWenZen	637	298	76	198	6	251329	2348
1786	whizzosoftware-WZWave	403	142	27	107	6	9381	1083
1787	william-ferguson-au-asymmetric-crypto	2	1	1	0	1	4	3
1788	wiqer-ef-redis	29	7	2	5	2	40000171	77
1789	wmixvideo-bradesco-boleto-registro	11	4	1	3	3	50	24
1790	wnameless-workbook-accessor	512	235	84	137	6	371260	3473
1791	woodpecker-appstore-yonyou-nc-decrypter	1	0	0	0	0	2	2
1792	Workday-timeseries-forecast	10	8	0	8	3	148430	40
1793	wso2-config-mapper	357	157	43	95	8	55922	2389
1794	wstrange-GoogleAuth	16	13	1	10	5	392	98
1795	wttech-Maven-CRX-Plugin	43	21	8	12	7	558	127
1796	wuba-LPA-Detector	767	245	108	123	6	355098	2403
1797	wxyinhao-book118-downloader	150	46	14	28	7	23420	703
1798	wz2cool-mybatis-dynamic-query	151	83	44	34	6	3628	937
1799	xcbeyond-ConferenceTrackManagement	12	3	1	2	2	68	13
1800	Xchuanshuo-LiteNESEmulator	22	5	2	3	4	130	50
1801	xcsp3team-XCSP3-Java-Tools	65	48	15	29	6	2656121	922
1802	xebia-Xebium	523	55	28	27	3	57046	589
1803	xianfengyi-ExprEngine	55	34	5	27	7	44319	840
1804	xiangbohua-scales-bridge	0	0	0	0	0	0	0
1805	xingePush-xinge-api-java	120	39	15	20	6	3408	785
1806	xjodoin-torpedoquery	318	176	16	148	6	89322	1728
1807	xnnyygn-dynamic-log-level	3	1	1	0	1	8	7
1808	xspec-xspec-maven-plugin-1	931	472	136	316	6	28762000	8975
1809	xuanbo-dag-executor	26	13	6	7	4	6283963	152
1810	xuminwlt-j360-tools	4	0	0	0	0	8	8
1811	XUranus-lightsocks-java	22	5	2	3	2	2039	31
1812	yagarea-java-chat	6	4	0	4	2	50	16
1813	yawkat-reflect	1	0	0	0	0	1	1
1814	yfpeng-pengyifan-leetcode	56	25	7	16	5	4800	319
1815	yichen0831-OpenCC-Java	14	10	2	6	7	790	93
1816	yinlou-mltk	54	25	8	12	6	8865	465
1817	yomorun-hashids-java	6	5	0	5	3	11001073	42
1818	ysc-word	232	84	31	50	6	3568393	1767
1819	Yubico-yubico-j	1	0	0	0	0	3	3
1820	YuboLong-MyLive	146	40	11	29	4	1665	338
1821	yuch7-cwlexec	455	196	44	141	7	91159	11981
1822	yurelle-Base45Encoder	11	9	0	9	3	21656	10042
1823	zafarkhaja-jsemver	46	27	12	15	3	6758	198
1824	zalandoresearch-zap	1006	351	96	216	7	2021485	8501
1825	zapodot-embedded-ldap-junit	356	163	35	118	6	168789	2284
1826	zencoder-zencoder-java	154	85	32	45	5	35074	1393
1827	zeroturnaround-maven-jrebel-plugin	7	6	0	6	4	134	42
1828	zeroturnaround-zt-process-killer	128	47	10	36	6	3374	290
1829	Zettelkasten-Team-Zettelkasten	1154	534	40	446	6	8352929	73369
1830	zhaolihe-useragent-parser	88	31	6	24	5	78993	3952
1831	zheng93775-mysql-lock	26	11	4	5	6	735	149
1832	zhixiangli-code-similarity	4	4	1	3	2	61	37
1833	zhkl0228-TraceReader	16	5	3	2	2	20468552	187
1834	ZhongAnTech-dmids	131	60	22	35	5	3662	569
1835	zhongxunking-sync	28	5	3	2	3	94692	23547
1836	zhoujianling-PointCloudUtilities	139	69	26	38	5	6757171	40450
1837	Zlika-reproducible-build-maven-plugin	95	24	6	13	6	1350	237
1838	zman2013-scuttlebutt	306	113	12	94	6	8450	1050
1839	ZsBT-mrz-java	39	10	1	8	5	1970	249
1840	ztelur-consistent-hash-algorithm	3	1	0	0	5	6986	25



Table 9. Raw results from our IMM's formative study showing number of traces in IMM's, number of unique traces in IMM, number of intra-procedural repeatedly monitored identical traces, number of inter-procedural repeatedly monitored identical traces, number of IMM's in project's code, number of IMM's in test classes, and number of IMM's in third-party libraries.

project	# traces in IMM's	# unique traces in IMM's	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMM's in CUT	IMM's in test	IMM in library
2captcha-2captcha-java	10757	797	10772	258	1	1	93
3redronin-mu-server	1597030	4873	1767778	152576	234	107	229
520github-fw-parallel-task	32	4	32	0	2	1	0
520github-fw-perf-test	42	11	42	0	6	0	0
520github-fw-statemachine	6	2	6	0	1	0	0
6tail-lunar-java	134524	437	135258	45	72	6	0
6tail-tyme4j	24055	139	24034	0	26	2	0
AAA-AA-basic-tools	1000063	13	1000062	0	1	2	2
abahgat-suffixtree	423250	627	562611	1333	4	4	0
AccelerationNet-access2csv	6112	202	6190	88	1	0	33
acegi-xml-format-maven-plugin	15020	795	15153	408	7	8	97
AdamBien-jwtenizr	3807	153	3803	12	2	0	13
AdamBien-xplr	573	28	573	0	7	1	0
adminfaces-admin-persistence	879289	6376	917809	24597	6	17	555
adobe-commerce-cif-magento-graphql	22899	344	33782	7669	14	0	9
adobe-htl-tck	283	41	322	75	0	1	13
aeherc-ontology-core	5544	716	5542	251	13	0	79
aelstad-keccakj	10255918	84	10337788	32811	5	14	0
afranken-jmeter-analysis-maven-plugin	7821	438	8020	478	17	4	64
Afrozaar-wp-api-v2-client-java	4871	669	4984	407	3	0	96
afrunt-jach	70452	269	70427	924	24	3	11
agarciadom-xeger	13172395	536	15328363	456556	2	2	19
agentgt-jatl	1238	155	1166	9	10	2	0
agiledon-payroll-ddd	22372	816	22647	564	1	0	107
AgNO3-jcifs-ng	580	65	710	109	14	3	4
agoncal-agoncal-application-petstore-ee7	119560	1141	121755	4853	0	0	121
agrison-redux4j	229	54	215	71	2	2	12
aidhog-label	3580	199	3950	282	24	0	7
ainslec-picocog	23	16	16	2	2	0	0
ajantis-java-crdt	340	60	328	0	10	0	0
akamai-NetStorageKit-Java	534	76	517	0	9	0	1
AlanDelip-SpringBoot-Template	3645	217	7550	6735	1	0	102
albfernandez-itext2	2105383	10783	2246236	57183	263	44	73
albfernandez-javadbfs	137227	194	137445	0	12	13	0
aled-jsi	578671	1173	578441	2609	11	1	23
aleksandr-m-gitflow-maven-plugin	451	23	453	2	3	0	5
alex2chen-j-statemachine	0	0	0	0	0	0	0
alexcojocar-elasticsearch-maven-plugin	297437	1925	297633	852	10	0	122
alexec-docker-maven-plugin	15722	131	16195	1409	0	0	25
alexheretic-dynamics	34747	249	36475	12319	38	3	8
AlexP11223-JavaSpringMvcBlog	114	36	147	35	1	1	10
alexr007-ultimate8	0	0	0	0	0	0	0
alfasoftware-soapstone	1297882	4548	1475696	79471	26	5	495
alibaba-compileflow	56333	786	57161	1655	0	0	95
alibaba-rsocket-broker-rsocket-broker-gateway-m...	27	9	25	0	0	0	4
alipay-ams-java-sdk	3102	131	3119	0	6	2	13
aliyun-aliyun-log-flink-connector	6	1	6	0	0	0	1
aliyun-aliyun-log-logback-appender	1918	137	1984	133	1	0	38
almondtools-stringsearchalgorithms	62242225	4135	71160836	2546	100	3	53
almson-almson-refcount	5000214	8	5000212	0	1	3	1
alt236-apkdetails	79	27	77	0	3	0	0
amazon-archives-amazon-kinesis-connectors	16315	775	23558	3085	7	3	135
amazon-archives-aws-request-signing-apache-inte...	34	17	34	6	2	0	5
amazon-archives-dynamodb-key-diagnostics-librar...	353660	1743	359172	9181	1	1	173
amazon-archives-pocket-etl	1633534	5518	1723991	50280	43	10	386
amihaemil-zold-java-client	125	48	129	16	1	0	18
andree-surya-moji4j	182	41	172	0	7	0	0
andylamp-BPlusTree	5259211	24	7063555	276693	8	0	0
Ant-Grand-Grand	3021917	1294	3040019	3970	90	20	45
antherd-sm-crypto	0	0	0	0	0	0	0
Antibrumm-jackson-antpathfilter	9324574	313	9864723	765253	4	2	32
antlr-antlrworks	4622	691	4493	60	27	0	0
antlr-stringtemplate3	3537	305	3824	584	50	2	0
anubhavshukla-properties-to-yaml-converter	678	37	685	2	10	1	0
apache-commons-cli	6935	365	10797	1097	37	12	0
apache-commons-codec	3236017	1649	3621476	160366	66	62	1
apache-commons-compress	7368157	16626	9715364	119371	394	217	441
apache-commons-imaging	51914441	4880	51998589	100506	215	70	6
apache-commons-jxpath	372797	619	375696	4654	78	39	14
apache-dubbo-hessian-lite	240151	118	302961	541	13	9	0
apache-dubbo-rpc-jsonrpc	9065	483	9075	618	2	2	80
apache-maven-ear-plugin	12	4	10	0	0	0	1
apache-maven-shared-utils	865	129	865	100	0	2	16
apache-maven-verifier-plugin	10	5	10	0	0	0	1
apache-sling-org-apache-sling-dynamic-include	91901	1114	93011	2578	4	0	134
apache-sling-org-apache-sling-feature	101447	2416	107248	4019	70	7	153
apache-sling-org-apache-sling-query	212920	447	234107	12949	37	9	4
apache-sling-org-apache-sling-scripting-sightly	566722	2526	575979	16120	4	3	172
apache-sling-org-apache-sling-servlets-resolver	446027	2160	457184	15295	1	1	171
apache-xmlgraphics-commons	1095601	2637	1107581	17491	102	11	117
apanimesh061-VaderSentimentJava	2430655	2208	2429598	1954774	10	1	5
apereo-cas-server-security-filter	67311	939	68115	1894	7	0	106
Appdynamics-rabbitmq-monitoring-extension	1017	122	990	0	0	0	22
Appdynamics-redis-monitoring-extension	7127	150	7108	999	4	0	22
Appdynamics-zookeeper-monitoring-extension	436	65	432	2	0	0	19
appnexus-ElasticNet4j	716	61	703	59	8	0	0
AquaticInformatics-aquarius-sdk-java	11127	337	11096	13	4	15	23
arangodb-jackson-dataformat-velocitypack	3231050	6647	4751193	556167	191	79	283

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
1886								
1887	arangodb-java-velocypack	892	43	962	63	7	2	0
1888	archervanderwaal-storm-server	12786	329	13718	1616	3	0	79
	Ardesco-driver-binary-downloader-maven-plugin	8106	727	8651	559	17	2	145
1889	Ardesco-Query	201831	357	509392	367969	3	0	40
1890	arnaugarcia-sallefy	181012	1840	744043	569501	0	0	122
	asaflevy-SeleniumExtend	48	4	48	0	2	0	0
1891	Asana-java-asana	13012	272	13871	1637	8	0	36
1892	aschoerk-converter-page	5944	1250	5727	283	74	0	83
	asciidocdoctor-asciidoclet	349225	3562	362976	45238	7	0	298
1893	aseldawy-spatialhadoop2	3543107	3381	3545778	240334	92	16	255
1894	ashenwgt-awesome-bdd-with-cucumber	15873	502	19747	2119	1	2	93
	ashish-chopra-Structures	698	95	680	2	18	1	0
1895	AshisRaj-cucelasticsearch-maven-plugin	170373	2051	172922	4454	11	3	174
1896	ashwanthkumar-gocd-janitor	1485	282	1873	299	9	1	52
	ashwanthkumar-slack-java-webhook	8	2	19	0	1	0	0
1897	assertthat-selenium-shutterbug	0	0	0	0	0	0	0
1898	ATLANTBH-owl	2	1	2	0	0	1	0
	atorstling-bychan	28	2	28	0	1	0	0
1899	Atrox-haikunatorjava	51	11	48	0	1	1	0
1900	atteo-evo-inflector	554	109	481	6	4	0	2
	attoparser-attoparser	209465643	715	209465940	9650570	22	16	2
1901	augustd-burp-suite-jsonpath	436	24	432	0	2	0	0
1902	aurbroszniowski-os-platform-finder	4	2	4	0	1	0	0
	aurbroszniowski-Rainfall-core	100721	43	100708	0	6	3	1
1903	autermann-yaml	12685	249	14772	5675	6	0	33
1904	authlete-authlete-java-common	10579	530	11094	1499	16	1	45
	AuthorizeNet-sdk-java	2976	190	2933	22	0	4	33
1905	avaje-common-avaje-agentloader	359	32	357	25	2	0	13
1906	AVMf-avmf	937	44	926	0	12	0	0
	AwakenCN-InChat	12	2	12	0	1	0	0
1907	aws-amazon-neptune-sigv4-signer	6030	730	5967	179	6	3	98
1908	aws-cloudformation-cloudformation-template-sche...	9989	20	9985	0	2	0	0
	awslabs-amazon-kinesis-scaling-utils	278	71	271	11	0	0	21
1909	awslabs-amazon-sns-java-extended-client-lib	637760	1331	649487	17828	2	1	132
1910	awslabs-aws-glue-catalog-sync-agent-for-hive	1522	142	1508	22	4	0	30
	awslabs-route53-infima	6313065	260	7100569	5079	12	7	2
1911	axelhjalm-bitwig-midi-fighter-twister	296	2	296	0	0	1	0
1912	azam-ulidj	360	10	360	0	0	3	0
	azige-moebooru-viewer	2030	210	2055	58	2	0	38
1913	Azure-azure-functions-java-worker	310774	2416	330455	13137	12	0	192
1914	Azure-Samples-cassandra-proxy	2889	137	3097	453	1	0	35
	badlogic-basis-template	2745	224	2704	4	24	0	0
1915	baidu-smartapp-openapi-java	1420358	13095	1809844	108180	0	1	1696
1916	Bandwidth-java-bandwidth	7154	323	7138	1727	24	1	23
	BarcodeAPI-server	26434	443	30601	2498	10	2	89
1917	barrer-translate-online	5944	243	8592	587	10	0	27
1918	basdijkstra-tau-rest-assured	135616	3080	153245	5527	1	2	437
	baswerc-routes	3155	223	3111	0	21	1	4
1919	bazaarvoice-dropwizard-redirect-bundle	52	17	44	0	3	3	0
1920	bazaarvoice-jsonpps	1281	164	1470	409	1	0	31
	bazaarvoice-rison	1784	297	2171	168	2	2	49
1921	bbottema-java-socks-proxy-server	2965	346	2973	68	1	0	41
1922	bdupras-guava-probably	4043210	175	4043218	190	10	13	17
	BellaDati-belladati-sdk-java	159957	1169	172146	28796	98	28	101
1923	ben-xo-cdjscribbler	138469	1181	140524	3959	3	0	107
1924	beothorn-URISchemeHandler	56	3	56	0	1	0	0
	berlam-github-bucket	11141	438	11135	591	36	2	51
1925	bernardosulzbach-dungeon	10115	1147	9387	247	62	2	5
1926	berndporr-iirj	514826	94	514780	0	0	22	0
	bestyize-DoubanAPI	78	40	66	0	4	0	0
1927	beyonddream-JRAKE	295	35	286	0	4	0	0
1928	bfh-evg-unicrypt	83986262	4099	107191123	16620084	87	40	0
	bgandon-juli-to-slf4j	0	0	0	0	0	0	0
1929	binance-binance-connector-java	72929	599	79958	21240	10	1	80
1930	binance-binance-futures-connector-java	31879	307	35112	11056	8	1	74
	BingAds-BingAds-Java-SDK	321166	1423	401220	20066	94	137	60
1931	binghe001-mykit-holiday	2083	102	2061	0	3	0	19
1932	bingoohuang-asmvalidator	10545	278	10630	217	26	1	55
	bingoohuang-excel2javabeans	164443	2916	176632	47665	27	4	231
1933	bingoohuang-westid	1086	215	1068	145	2	0	56
1934	biouno-figshare-java-api	334	33	336	19	0	0	10
	biouno-pbs-java-api	0	0	0	0	0	0	0
1935	bkatwal-kafka-solr-sink-connector	70	27	82	20	0	0	9
1936	bkatwal-kafka-util	184966	2186	234631	18601	0	2	292
	bkiers-atlas	10921	74	10892	0	1	0	3
1937	blackbeard334-djoom3	12	2	12	0	0	1	0
1938	blackdoor-hate	2259	489	2483	170	3	0	52
	Blazemeter-xtn5250	42831	332	42884	10824	28	0	35
1939	blinkfox-mini-table	18	8	15	0	2	0	0
1940	blinkfox-zealot	6459	252	6808	2900	14	0	22
	blueapron-kafka-connect-protobuf-converter	5833	432	5754	76	6	4	35
1941	bluemix-NumberToArabicWords	138	24	136	0	2	1	0
1942	bmatthews68-ldapunit	52858	589	55422	12402	3	6	72
	bmwcarit-hmm-lib	612	100	604	10	14	2	0
1943	bohnman-squiggly	243799	1099	261047	19127	17	1	65
1944	bonnyfone-vectalign	3967513	12219	3990969	5231	12	1	0
	bookshelfdave-etp	7496	341	8297	882	13	0	28
1945	bouncestorage-chaos-http-proxy	0	0	0	0	0	0	0
1946	bpodgursky-jbool_expressions	74845	611	74705	0	23	0	2
	bpsm-edn-java	30979	296	31825	5161	34	7	0

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
1951								
1952	braintree-braintree_java	148618	2421	170167	24496	48	2	135
1953	bruceran-krpc	17002	1351	17820	940	62	5	160
	brutusin-commons	967	6	967	0	0	4	0
1954	brutusin-instrumentation	302	67	302	0	6	1	7
1955	bserdar-jcliff	1003	189	1034	43	12	1	6
	btrekkie-dynamic-connectivity	39	6	37	6	1	2	0
1956	bubuntux-poker-engine	34	15	29	0	4	0	0
1957	buddy-works-simple-java-project	0	0	0	0	0	0	0
	bvolpato-inutils4j	87	39	81	4	9	0	1
1958	c-rack-cbor-java	601205	136	601337	200147	20	0	0
1959	c0ny1-captcha-killer	141	45	125	0	2	0	7
	caligula95-spring_crud	10535	302	26043	19621	0	0	89
1960	camunda-camunda-xml-model	45655	755	46911	1273	66	41	10
1961	Cantara-Java-Auto-Update	133065	1906	135475	3805	13	3	188
	carlosbritojun-jflunt	128	6	128	0	2	0	0
1962	carlostse-jopenc	28	11	24	0	3	0	0
1963	CarmJos-AliDDNS-Updater	2214	142	2456	2043	0	0	18
	casbin-jcasbin	224693	2365	245962	13431	70	22	139
1964	casid-jusecase	52	9	52	0	3	1	0
1965	cbartosiak-bson-codecs-jsr310	3518	11	3518	0	2	3	1
	cellsrg-tabbypdf	0	0	0	0	0	0	0
1966	Celos-avro-json-decoder	1445	123	1521	195	2	1	19
1967	CeON-spark-utils	3678	184	3665	25	1	0	39
	ceridwen-com-ceridwen-standard-interchange-prot...	35194	309	35130	2	20	2	36
1968	cescoffier-vertx-completable-future	221378	192	221827	24083	0	5	57
1969	ChannelApe-shopify-sdk	605112	2682	727706	45828	12	2	257
	ChannelFinder-javaCFCClient	381	67	365	0	7	3	0
1970	Chatanga-Girinoscope	3	2	2	0	1	0	0
1971	cheese10yun-spring-jpa-best-practices	34239	510	75665	63751	0	0	118
	chengdedeng-waf	3553	118	3745	244	1	1	39
1972	chenhaiyangs-mybatis-encrypt-plugin	23	6	23	0	0	0	4
1973	chenjianjx-swagger2html	68774	2505	69194	1538	9	3	160
	chenjianjx-wsdl2html	6	2	6	0	1	0	0
1974	chrfrantz-DBSCAN	13	10	600	38	1	0	0
1975	chriswhocodes-FreeLogJ	70	14	70	10	1	1	0
	Chrris-RRDiagram	2928	335	3040	235	19	1	0
1976	cimiano-tbx2rdf	36795	390	41685	728	40	1	32
1977	CiscoDevNet-stealthwatch-data-exporter	1303	108	1285	0	7	0	10
	cjmatta-kafka-connect-irc	80	22	103	18	1	0	5
1978	clarkchen-data_structure	242	24	240	0	5	3	0
1979	cloudbees-diff4j	12705	344	12820	712	16	8	1
	cloudbees-oss-zendesk-java-client	81881	2168	87858	5104	10	1	283
1980	clouidiator-sword	2023	87	2044	31	8	0	25
1981	clouidiator-visor	2	1	2	0	0	0	1
	cloudspannerecosystem-pgadapter	632627	2337	643107	18681	15	0	115
1982	cm-heclouds-onenet-studio-api-java-sdk	4091	286	4083	2	11	1	47
1983	cocolian-cocolian-nlp	24367223	13665	24618319	496565	51	11	18
	CODAIT-stocator	460915	5253	526678	21459	11	5	463
1984	code4craft-xsoup	2885	177	3087	148	20	1	9
1985	codeclou-java-junit-xml-merger	10784	298	11049	887	1	2	56
	codedance-silken	332	38	336	24	1	0	4
1986	codeforamerica-pdfparser	4226	412	5561	735	0	2	53
1987	codeine-cd-codeine	775	190	810	71	28	2	11
	codelibs-jcifs	564	66	659	110	15	3	4
1988	codelibs-jhighlight	670	45	664	0	6	0	2
1989	codelibs-ranklib	27693	220	27670	1026	50	2	0
	codelion-gramtest	22904099	956	25319091	281664	5	0	19
1990	codorodde-OrderStatisticTree	4898	12	4898	0	5	0	0
1991	CodeShield-Security-Log4JShell-Bytecode-Detecto...	180592	200	180519	187	3	0	9
	CodinGameCommunity-XmasRush	83	31	80	2	11	0	0
1992	coekie-gentyref	747	39	743	15	8	0	0
1993	Col-E-Simple-Memory-Compiler	19	7	20	4	3	0	0
	coldnew-twse-captcha-solver-java	2994	96	3049	198	0	0	6
1994	confluentinc-castle	5700	855	6202	603	21	1	61
1995	confluentinc-kafka-connect-datagen	5028507	1804	5143335	2440064	4	3	83
	contentful-contentful-management.java	149243	820	191310	85039	31	4	79
1996	contentful-contentful.java	190733	1907	205042	35538	26	4	176
1997	conveyal-osm-lib	16842053	3218	16841217	519	19	2	72
	coralblocks-CoralME	9455	844	9482	342	3	0	90
1998	corentin59-ArtNetStack	8	2	8	0	0	1	0
1999	Coreoz-PPT-Templates	80805	2853	82011	661	7	0	69
	Coreoz-Wisp	178369	201	209653	39674	5	6	37
2000	couchbaselabs-couchbase-capi-server	26862	623	31904	3826	2	3	137
2001	Coveros-GitHub-Sandbox-selenified	325557	2105	334586	16719	98	5	216
	cowtowncoder-java-cachemate	4000050	13	4000050	0	2	2	0
2002	cowtowncoder-java-uuid-generator	20836449	105	20836441	126	8	17	0
2003	cowtowncoder-low-gc-membufers	576	64	576	0	6	20	0
	craigblake-redline	14609	691	14468	620	55	6	42
2004	crispab-javabuilderpattern	10	4	10	0	2	0	0
2005	crossoverJie-distributed-redis-tool	128	16	209	232	3	0	5
	crossoverJie-leetcode	120	24	113	0	4	0	0
2006	Crozin-Wykop.pl-Java-SDK	271	88	254	0	3	4	7
2007	Cryptonomica-cryptonomica	536	16	533	2	1	0	7
	ctapweb-AutoSubClause	1121320	3583	1302508	61604	5	3	181
2008	cternes-openkeepass	407783	6069	444708	103556	42	1	113
2009	ctran-TinyRadius	0	0	0	225	0	0	0
	ctrl-alt-dev-tps-parse	6072	201	6028	57	38	1	0
2010	ctron-rpm-builder	5	2	5	0	1	0	0
2011	CubeEngine-Dirigent	3381	186	3482	62	21	2	0
2012	CurrencyCloud-currencycloud-java	1357792	7442	1458840	115242	13	23	364
2013								
2014								
2015								

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2016								
2017	cutecharts-cutecharts.java	37539	673	38180	1138	0	0	84
2018	cyberborean-rdfbeans	55307	681	58968	4948	20	4	72
	d-plaindoux-suitcase	1260	69	1406	19	11	0	3
2019	daanvdh-JavaForger	1120	86	1112	11	7	2	11
2020	dadiyang-equator	303	30	303	0	4	2	0
	daimuuc-CampusLife-SSM-	36819	1515	38923	615	0	14	211
2021	daisy-jhyphen	248	37	242	3	3	1	5
	DaisyDiff-DaisyDiff	49441	556	51690	5051	33	7	3
2022	dakusui-jcunit	136440601	1901	136471278	37696	77	18	21
2023	damienclaveau-kafka-graphite	338	42	379	11	2	1	13
2024	damnhandy-Handy-URI-Templates	14121	618	14814	1110	24	4	51
	dampcake-bencode	434	63	428	64	10	0	1
2025	danieldk-dictomaton	30941264	8382	38609258	4153908	40	48	0
2026	danielflower-maven-gitlog-plugin	44451	216	45485	5802	22	5	18
	danielwegener-logback-kafka-appender	58880	1521	60280	1910	0	0	208
2027	dano-vertx-zeromq	10889	335	12452	1055	6	6	60
2028	darmiel-eeee	6539	68	6537	0	6	2	0
	dart-maven-plugin-dart-maven-plugin	196	27	187	2	0	0	7
2029	datadotworld-dw-jdbc	137027	1890	139953	4419	131	8	137
2030	datastax-native-protocol	135140	2168	141587	11720	34	16	126
	datoin-http-requests	4702	274	4722	307	2	1	77
2031	davidB-scala-maven-plugin	110	19	110	0	2	1	2
2032	DavidHerBet-java-codility	279	66	277	0	15	0	0
	davidmoten-aws-maven-plugin	196	39	182	5	0	0	5
2033	davidmoten-big-sorter	53887	352	56030	6622	29	9	10
2034	davidmoten-bplustree	63523753	135	63524133	3083	12	14	6
	davidmoten-guava-mini	10	6	7	0	2	0	0
2035	davidmoten-hilbert-curve	524530	169	524517	69905	3	5	2
2036	davidmoten-predict4java	2266	27	2337	39	5	1	1
	davidmoten-rtree	27288096	1320	32259854	850236	28	9	117
2037	davidmoten-rtree-multi	15555409	1393	18352016	1382089	24	1	99
2038	davidmoten-rtree2	12964835	1005	15481269	1023651	26	3	97
	davidmoten-rxjava-extras	7549589	4160	9946634	163105	32	20	120
2039	davidmoten-rxjava-slf4j	56259	890	57406	1461	8	3	98
2040	davidmoten-rxjava2-file	358	33	349	6	3	4	6
	davidmoten-sparse-hilbert-index	2197	141	2565	174	14	0	19
2041	davidmoten-word-wrap	1414	91	1359	0	6	3	1
2042	dbaggott-newrelic-dropwizard	50431	670	57428	16578	7	0	116
	ddopson-java-class-enumerator	18	6	16	0	2	0	0
2043	de-mklinger-tomcat-juli-slf4j	378	8	378	0	0	3	1
2044	delthas-JavaMP3	77	11	77	0	1	1	0
	delving-x3ml	1329433	2238	1465795	357874	41	21	136
2045	demidenko05-beigesoft-accounting	4312	14	4312	0	0	2	0
2046	demidenko05-beigesoft-webstore	30	15	28	0	1	1	0
	deniswsrosa-liquicouch	2891	165	3408	986	6	4	33
2047	dennisknief-GQLRaider	6236	477	6246	251	4	0	29
2048	DenzelCode-AdvancedSQL	392	39	380	120	2	0	9
	dernasherbrezon-jradio	25445530	6110	25891000	685054	113	25	124
2049	devnied-Bit-lib4j	43	24	32	0	4	0	1
2050	devopshydclub-vprofile-project	5049	165	14101	8201	1	1	76
	devopshydclub-vprofile-repo	3858	156	10904	5917	1	1	73
2051	dgroup-docker-unittests	12829	561	25083	11964	4	1	105
2052	dgroup-laonic-velocity	448	90	436	94	3	0	21
	dhananjaypatkar-kafka-connect-phoenix	377	87	455	4	0	0	20
2053	dhatim-business-hours-java	1088223	980	1450341	4312	12	0	0
2054	dibbhatt-kafka-spark-consumer	108	36	108	0	2	0	0
	digipost-http-client-builder	21	7	21	0	1	0	2
2055	digital-preservation-utf8-validator	124	21	124	18	2	0	0
2056	digitalfondue-npjt-extra	22310	766	24490	754	8	18	151
	digitalheir-java-nfa	268	30	431	101	0	1	10
2057	DigitalPebble-TextClassification	1277	150	1252	0	10	2	6
2058	dikhan-pagerduty-client	318642	1718	351950	14772	7	2	246
	dingjs-javaagent	22	7	19	0	2	1	0
2059	dizitart-jbus	120972	1313	167799	7123	16	2	145
2060	dkellenb-formula-evaluator	2364	81	2365	32	9	1	0
	dmak-jaxb-xew-plugin	286986	2013	306380	21142	0	1	182
2061	dmcg-okey-doke	192	18	199	7	9	1	1
2062	dmeoli-WS4J	955927	582	958346	3399	28	1	8
	dmitry-zhuravlev-jooq-postgis-spatial	0	0	0	0	0	0	0
2063	dnsjava-dnsjava	1873736	6583	2081175	76463	224	41	331
2064	Doccrazy-keycloak-protocol-cas	1669	237	1829	364	4	0	49
	domclick-kafka-logback	126743	1258	126809	326	0	1	113
2065	dpaukov-combinatoricslib	260604	242	707625	767	30	15	0
2066	dperezcabrera-jpoker	96170960	363	96170971	48	6	21	62
	dpressel-sgdtk	720	9	724	4	2	0	0
2067	dreezey-argon2-password-hash-provider	312	77	319	33	2	0	18
2068	DReichLab-ADNA-Tools	100549	1272	101931	1733	30	1	57
	Driftt-EmailReplyParser	624	112	717	220	1	0	16
2069	dropwizard-dropwizard-elasticsearch	125730	3148	136625	8341	0	0	483
2070	dsc-cmt-cmt-statemachine	4188	246	4428	364	15	1	32
	dspinellis-ckjm	330	30	324	89	1	0	10
2071	dsyer-spring-security-rsa	196	18	196	0	2	2	4
2072	dubasdey-portable-ftp-server	876	12	876	2	1	0	7
	dubin555-Kafka-Insight	0	0	0	0	0	0	0
2073	duguying-pinyin	275004	22	275004	0	5	1	0
2074	duma-repo-manis-study	14	5	14	0	2	0	1
	dyng-polling	86	14	79	0	1	3	0
2075	dyorgio-cpu-watcher	14311	60	14306	9	2	0	13
2076	e-gineering-gitflow-helper-maven-plugin	0	0	0	0	0	0	0
	earcut4j-earcut4j	6	4	4	0	1	0	0
2077								
2078								
2079								
2080								

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2081								
2082	eBay-bsonpatch	478991	3900	588772	102700	14	7	22
2083	eBay-FeedSDK	745	91	779	58	2	0	27
2084	eBay-json-comparison	25023	989	25247	612	1	0	128
2085	ECharts-Java-ECharts-Java	56970	1441	56595	210	8	0	44
2086	echisan-wbp4j	477	71	469	8	12	0	16
2087	ecki-et-otp	1026	6	1024	0	1	0	0
2088	eclipse-jbom	71231	1197	72488	1794	13	1	50
2089	edgexfoundry-support-rulesengine	22394	331	23044	772	3	7	67
2090	eightbitjim-cassette-nibbler	188990387	253	188998046	11564	61	9	0
2091	EladLeev-KeyToField-smt	328	60	357	28	3	1	10
2092	elasql-elasql	4	2	4	0	1	0	0
2093	elasticpath-json-unmarshaller	142128	1090	143305	787	11	0	90
2094	EnterpriseQualityCoding-FizzBuzzEnterpriseEditi...	455711	728	459476	18052	7	1	107
2095	entrusc-xdata	1205	78	1408	10	19	0	0
2096	eolinker-sql2dsl	4028	202	4127	40	2	0	30
2097	erdtman-java-json-canonicalization	233	81	188	0	3	2	0
2098	errai-errai	83431	1325	97213	8446	133	8	10
2099	esamson-logback-luhn-mask	11257	732	11289	372	1	0	96
2100	EsmerilProgramming-overtown	3684	197	3743	180	14	1	42
2101	EsotericSoftware-yamlbeans	41701	587	42754	8001	56	5	0
2102	ethlo-jsons2xsd	3118	122	3188	161	14	1	10
2103	etsy-arbiter	2445	186	3456	1077	11	1	23
2104	etsy-statsd-jvm-profiler	2440	283	2556	173	8	2	78
2105	eurekaclinical-datastore	4881	446	4924	148	1	0	62
2106	eurekaclinical-javautil	59	12	59	0	3	1	0
2107	everwatchsolutions-json-data-generator	12000	12	12000	0	0	3	0
2108	exchange-core-orderbook	26411	1203	27759	1530	6	1	105
2109	EXIficient-exifcient-core	11353	64	11547	166	14	0	0
2110	ExpediaGroup-avro-compatibility	4962	114	5458	1325	3	0	18
2111	ExpediaGroup-jasvorno	5037	274	5190	432	9	0	36
2112	eyp-serfj	6186	94	6184	2514	9	3	23
2113	f-lab-edu-real-time-delivery-market	10398	165	24866	19285	0	0	40
2114	f0ng-captcha-killer-modified	141	45	125	0	2	0	7
2115	f4b6a3-ksuid-creator	160458	16	160890	0	2	5	0
2116	f4b6a3-tsid-creator	658172	151	658999	0	5	19	0
2117	f4b6a3-ulid-creator	164318	19	164606	0	3	7	0
2118	f4b6a3-uuid-creator	535526	190	602934	12	16	53	0
2119	fabric8io-docker-maven-plugin	1633898	8672	1736487	66781	201	42	313
2120	fanchao0-hahu	20101	396	51912	14494	0	4	97
2121	fangyidong-json-simple	219	58	245	4	3	3	0
2122	fasseg-exp4j	206779	205	206700	0	12	1	0
2123	FasterXML-jackson-benchmarks	16	4	16	0	1	0	0
2124	FasterXML-java-classmate	915	118	1315	57	25	0	0
2125	fdinoff-neovim-java-client	2720	314	3056	635	5	0	49
2126	FDMediagroep-hamcrest-jsoup	1444	95	1688	507	0	0	26
2127	feiYouLian-jpinyin	1686	33	1681	0	7	0	0
2128	FelixGail-gplaymusic	22	6	22	0	1	0	1
2129	fengwenyi-api-result	0	0	0	0	0	0	0
2130	ferstl-pedantic-pom-enforcers	348476	2221	354964	11057	30	15	148
2131	fhoeben-hsac-fitness-plugin	1170702	2060	1206175	12393	57	45	166
2132	figo-connect-java-figo	101	39	93	5	1	0	9
2133	fiji-AnalyzeSkeleton	553	37	764	74	10	1	0
2134	finmath-finmath-lib	280677585	5327	280717750	11842037	514	180	24
2135	finn-no-retrieable-kafka-consumer	52293	1044	53083	1799	6	2	118
2136	finos-messageml-utils	110587	2785	112884	4252	103	29	196
2137	firebase-firebase-admin-java	4194449	7644	4832776	117111	256	115	311
2138	fizzed-jne	1283	206	1253	1200	16	0	23
2139	flipkart-incubator-databuilderframework	41717976	866	45000866	6549043	20	17	46
2140	floppylab-markdown2document	214618	837	214996	11502	4	0	143
2141	flowerfelt-find-and-replace-maven-plugin	4650	82	4706	72	11	1	1
2142	Flying9001-pay	0	0	0	0	0	0	0
2143	forcedotcom-SiteCrawler	34	8	32	0	1	0	1
2144	forcedotcom-wsc	481483	1068	519941	13752	66	5	80
2145	fordfrog-ruian2pgsql	348	123	315	46	18	2	0
2146	forgemo-bittrex-java-client	25410	881	28148	1222	0	3	65
2147	ForgeRock-OpenBanking-UK-Datamodel-Java-SDK	80004	2169	83976	442	0	0	147
2148	ForteScarlet-Mock.java	6	4	4	0	1	0	0
2149	fortitutedec-sonar-ruby-plugin	111279	354	111432	10129	3	1	83
2150	Francesco149-koohii	19567	4137	17788	1489	4	1	0
2151	francisdb-serviceloader-maven-plugin	1076	69	1089	6	4	0	5
2152	fraunhoferfokus-Fuzzino	467403	5202	483356	18686	107	61	0
2153	freva-ascii-table	390	39	403	14	5	3	0
2154	fsantiag-sonar-clojure	42746	1378	43500	1503	14	0	148
2155	Fundynamic-dune2themaker4j	1463585	3649	1574378	20220	73	6	125
2156	fusion-jena-JaroWinklerSimilarity	112519668	1449	118216984	19206982	13	5	0
2157	fuzziness-kabeja	83	17	81	0	6	0	0
2158	fzakaria-ascii85	0	0	0	0	0	0	0
2159	g4dpz-predict4java	1315	17	1343	7	5	0	1
2160	gabrie-allaire-sonar-gitlab-plugin	64453	1221	65856	6282	41	29	143
2161	games647-ColorConsole	260	97	265	91	3	0	15



	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2146								
2147	ganskf-LittleProxy-mitm	66450	619	66447	380	10	2	144
2148	GaoLeiQin-SwordOffer	110	27	100	0	5	0	0
	gaols-reduce-rule	4000	400	4000	0	1	1	0
2149	GeBeater-dozer-jdk8-support	0	0	0	0	0	0	0
2150	geftimov-hadoop-map-reduce-patterns	0	0	0	0	0	0	0
	george-haddad-cardme	6216	581	7076	73	65	1	0
2151	geosolutions-it-geoserver-manager	6130	174	8300	4849	17	4	17
2152	geosolutions-it-http-proxy	36537	2002	42971	7430	11	0	344
	gesellix-Nimbus-JOSE-JWT	495	93	469	2	12	0	5
2153	ghacupha-book-keeper	2157	88	2130	907	6	0	7
2154	ghaffarian-progex	18755703	5687	19759844	730765	148	0	40
	ghosthack-turismo	0	0	0	0	0	0	0
2155	Gikkman-Java-Twirl	843	110	805	0	11	3	0
2156	giltene-jHiccup	0	0	0	0	0	0	0
	gini-dropwizard-gelf	145206	6432	167756	9038	0	0	613
2157	gisarmory-mbtiles4j	4	2	4	0	1	0	0
2158	gitbucket-markedj	12042	328	13618	239	24	2	10
	GitHub-Laziji-reverse-regex	3429	216	3393	0	7	3	0
2159	gkopff-gson-javatime-serialisers	277	45	271	0	0	0	6
2160	gkopff-gson-jodatime-serialisers	790	86	857	63	0	0	14
	gmr-rabbitmq-flume-plugin	44	7	55	12	0	1	2
2161	GMWolf-artemis-odb-eel	893	20	901	52	1	0	5
2162	goncalomb-NBTEditor	284	4	284	0	1	0	1
	gongdaowen-ofdparser	759500	651	760697	15795	7	1	84
2163	google-closure-stylesheets	147045	1838	202644	48212	198	28	43
2164	google-escapevelocity	35875	517	42275	8151	41	5	50
	google-guava-beta-checker	18502	156	21159	3671	2	1	32
2165	google-jstoken	985	76	1035	201	6	0	13
2166	googleapis-disco-to-proto3-converter	750718	2081	948561	88473	65	0	34
	googleapis-java-pubsub-group-kafka-connector	184616	2033	189072	7435	13	4	190
2167	googleapis-java-pubsublite-spark	96800	1498	98908	3054	7	1	154
2168	GoogleCloudPlatform-app-maven-plugin	1200664	2773	1220402	32814	8	6	128
	GoogleCloudPlatform-kafka-pubsub-emulator	106726	2119	114779	9900	29	9	241
2169	GoSimpleLLC-jpgAgent	0	0	0	0	0	0	0
2170	goxr3plus-java-google-speech-api	124	23	114	0	0	0	3
	gradusnikov-jmatio	12789	145	12774	304	17	0	0
2171	grantneale-kafka-lag-based-assignor	198	81	184	30	3	0	6
2172	graphhopper-jackson-datatype-jts	850	43	1149	189	0	0	14
	graphstream-gs-core	6498934	437	6500840	730	69	12	0
2173	graylog-labs-syslog4j-graylog2	7005	710	6947	59	5	0	89
2174	Graylog2-gelfclient	126868	1178	129334	3771	6	1	117
	GreenButtonAlliance-OpenESPI-ThirdParty-java	292	50	477	128	0	0	16
2175	gregorriegler-babdev-spring	10	5	10	0	0	0	2
2176	gridgain-yardstick	602	6	602	0	2	1	0
	gridkit-jvm-attach	6	3	6	0	1	0	0
2177	grpc-grpc-java-api-checker	38241	178	48380	15033	3	8	42
2178	grunlimited-geocalc	16	4	16	0	1	0	2
	Grundtrefleck-ASM-NonClassloadingExtensions	26724783	1304	29616378	2434146	1	1	111
2179	gturri-aXMLRPC	18908	1270	22980	4128	7	1	224
2180	Guo-xm-mycatis-expand	104726	138	104962	8	0	0	22
	habernal-confusion-matrix	6622	607	7183	266	18	0	0
2181	hackingwu-Java-Promise	0	0	0	0	0	0	0
2182	hageldave-ezFFTW	19314	75	19326	57	5	1	7
	hajhouj-fastsico	0	0	0	0	0	0	0
2183	hankcs-hanlp-lucene-plugin	8633	1070	8702	411	4	2	131
2184	hantsy-angularjs-springmvc-sample	4926	358	10842	7861	0	0	98
	harawata-appdirs	442	25	442	0	2	0	2
2185	Harium-etyl	0	0	0	0	0	0	0
2186	Harium-keel	4008	242	3866	355	16	0	2
	HarvardPL-AbcDatalog	130797	1901	142790	3405	80	7	0
2187	hazelcast-hazelcast-aws	174927	1635	229213	37225	26	2	248
2188	hazelcast-hazelcast-azure	106317	1570	138656	20760	10	0	274
	HdrHistogram-HdrHistogram	1751297	2604	1750784	5635	28	20	0
2189	HebiRobotics-HebiCam	3	1	3	0	1	0	0
2190	HelixNetwork-pendulum	10369161	5506	11368617	743733	78	13	584
	hellige-ccs	14614	898	15039	1541	27	6	0
2191	hellokaton-webp-io	66	23	66	0	3	0	0
2192	hengyunabc-metrics-zabbix	27164	911	27061	58	0	0	98
	heremaps-oksse	0	0	0	0	0	0	0
2193	hermannpencole-nifi-config	3010	261	2976	80	11	2	32
2194	Heroicai0101-abtest	740061	23	740052	0	1	2	2
	heroku-heroku-jvm-application-deployer	0	0	0	0	0	0	0
2195	hertzsprung-hamcrest-json	457	76	486	64	0	1	21
2196	hevoio-recoverable-kafka-producer	165	75	177	28	0	0	22
	hifly81-bank-account-axon	567	103	574	15	0	7	27
2197	HiveRunner-mutant-swarm	43033	418	241738	169589	0	1	45
2198	hivsuper-document-converter	0	0	0	0	0	0	0
	hkhcoder-vprofile-project	5049	165	14101	8201	1	0	77
2199	hlavki-jlemmagen	1232092	223	1254496	4636	12	1	1
2200	hneemann-digitalCustomComponents	933	81	941	283	0	0	34
	hneemann-Oscilloscope	11612	8	11612	0	0	4	0
2201	hoereth-springfox-enum-plugin	270	70	282	42	2	1	20
2202	hoijui-Jawk	1175	176	1135	34	10	0	22
	hoijui-ReZipDoc	914	165	892	59	16	10	2
2203	hongbeomi-Programmers	497	64	482	0	0	0	17
2204	hongliuliao-thrift-generator	5930	286	6670	380	13	0	43
	houbb-heaven	36	12	36	0	2	0	0
2205	houbb-nlp-hanzi-similar	770337	81	771824	12	4	0	13
2206	houbb-openc4j	611688	208	1135388	45	11	0	11
	houbb-pinyin	669759	149	671280	30	6	0	10

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2211	houbb-segment	5913206	230	5913613	192	18	0	12
2212	houbb-sensitive-word	99406611	239	99408191	982	18	0	3
2213	houbb-word-checker	10243	160	10345	73	12	0	7
2214	hs-web-hsweb-utils	1262	217	1094	18	2	1	4
2215	hsiafan-apk-parser	23191	2065	23176	2081	29	0	105
	hsluv-hsluv-java	114648	7	114648	0	2	1	1
2216	huaban-jieba-analysis	18201569	509	18835886	72254	8	0	0
2217	huangbowen521-SpringJMSSample	86006	1738	99645	14401	2	9	372
	huangp-entityunit	375035	7561	405211	51518	40	7	473
2218	hubert-marteau-MultiChainJavaAPI	432	56	439	0	2	0	8
2219	HugoJhonathan-Challenge-Oracle-ONE-conversordem...	0	0	0	0	0	0	0
	huiwang-cracking-the-coding-interview	813	98	852	9	16	0	0
2220	huiyang100-excel-formula-engine	137199	178	137946	978	0	1	24
2221	humbertodias-java-data-structures-algorithms	3248	127	3260	16	22	11	0
	hummeling-if97	18	2	18	0	0	1	0
2222	iamazy-elasticsearch-sql2	6490	515	6984	1407	23	0	78
2223	ibit-tech-sql-builder	22466	290	22481	580	50	0	2
	IBlogLab-enhance-gateway	915	115	2982	2345	0	2	24
2224	IBM-Cloud-gp-java-client	144	11	144	0	3	0	2
2225	iceenongli-iceworkday	0	0	0	0	0	0	0
	idealo-mongodb-slow-operations-profiler	3686	145	3755	96	7	0	6
2226	ifpe-cti-saudegaranhuns	1226	227	1163	21	0	3	31
2227	igniterealtime-openfire-hazelcast-plugin	4780	212	4736	36	1	1	44
	igniterealtime-tinder	90511	234	107219	17760	25	1	18
2228	iipc-jwarc	84625	209	84960	31	35	8	0
2229	iipc-openwayback	17684	1033	18324	1540	107	46	84
	iipc-urlcanon	12713	389	12988	469	16	2	5
2230	iipc-webarchive-commons	284875	2661	423188	69092	115	52	25
2231	imadcn-idworker	52450	1606	55445	3645	9	13	313
	imagej-example-script-collection	115850	1615	116829	259	0	0	175
2232	imagej-imagej-omero	1261242	1163	1300667	3158	12	9	97
2233	Imaginary11-bionic-utils	142	38	132	0	3	0	9
	imixs-muluk	0	0	0	0	0	0	0
2234	imohsenb-ISO8583-Message-Client-java	116	39	116	0	7	0	1
2235	implydata-druid-example-extension	7899	983	8296	565	0	1	125
	in-the-keyhole-khs-sherpa	0	0	0	0	0	0	0
2236	in28minutes-JUnitIn28Minutes	10	3	10	0	2	0	0
2237	iNamik-java_text_tables	2364	67	2358	3	11	0	0
	indeedeng-mph-table	158007	1152	158122	623	31	1	68
2238	indeedeng-vowpal-wabbit-java	192702366	153	258995614	28485424	20	5	9
2239	indexdata-cql-java	246419	1436	245270	46	16	8	0
	indrasak-bouncycastle-fips-examples	85847	884	85847	18	0	0	77
2240	InfoSec812-sonar-auth-google	2095	112	2136	64	5	0	31
2241	Ingenico-ePayments-connect-sdk-java	7232	725	7698	673	38	16	72
	inreachventures-aws-signing-request-interceptor	1029	163	1187	280	8	2	25
2242	instana-instana-java-opentracing	384	45	389	18	3	2	7
2243	InstantWebP2P-tweetnacl-java	4914	298	4770	0	2	14	0
	intel-jndn-mock	900	59	1142	213	10	1	14
2244	intel-jndn-utils	4317	212	5705	1005	30	2	29
2245	internetitem-logback-elasticsearch-appender	16	2	16	8	0	0	2
	intive-FDV-DynamicJasper	3961612	9562	4044381	141907	170	40	722
2246	intuit-graphql-filter-java	164406	467	304804	252263	4	0	74
2247	inversoft-jackson5	32547	159	40743	4413	0	3	34
	inversoft-rectify	523	135	521	36	9	1	14
2248	io7m-aeron-guide	786120	30	786120	0	2	4	1
2249	iorga-group-debattons	36421	337	86725	86433	0	0	104
	iost-official-java-sdk	6512	326	6502	90	5	1	44
2250	iotaledger-cliri	518690	2569	555916	81128	51	14	317
2251	iquadrat-sbb-train-scheduler	34334258	4280	36189144	3605592	80	10	63
	iris-edu-stationxml-seed-converter	586812	2630	22932606	194458	16	0	58
2252	ironpinguin-serialized-php-parser	23	3	26	24	2	0	0
2253	Isaac315-sql-translator	333	66	317	64	1	0	10
	ITArray-automotion-java	48521	882	175201	152374	8	0	40
2254	iterate-ch-java-openstack-swift	219	52	226	49	2	0	10
2255	IvanTrendafilov-Confucius	2198	183	2235	262	19	4	1
	ixa-ehu-ixa-pipe-ml	24	9	23	9	1	0	2
2256	ixa-ehu-ixa-pipe-tok	244	46	238	0	1	0	7
2257	iyzico-iyzipay-java	64	19	64	0	5	0	3
	j-easy-easy-flows	24447	1043	24815	786	11	2	111
2258	j-easy-easy-states	5476	651	5415	129	2	2	88
2259	j256-simplecsv	32320	256	52322	23	15	1	0
	j256-simplejmx	3792	377	4209	97	44	2	46
2260	j256-simplemagic	295026	431	306470	20182	20	19	19
2261	j256-two-factor-auth	2082	8	2090	8	3	0	0
	jackhallam-weightless-orm	1808940	1710	1854676	44439	44	9	260
2262	jagrosh-GiveawayBot	6128	53	6121	14	1	2	12
2263	jahlborn-jackcess	17575161	4376	38424618	1300035	239	183	13
	jahlborn-jackcessencrypt	146775	2774	146800	11251	5	7	49
2264	jahlborn-sqlbuilder	9467	321	11901	1210	55	6	0
2265	jai-imageio-jai-imageio-core	1932	48	1950	50	13	7	0
	jamf-AppConfig-Generator	9	3	9	0	1	0	0
2266	JanGorman-jersey-passbook	10	6	8	0	1	0	1
2267	jano7-executor	1033	29	1024	0	6	2	0
	janssk1-maven-graph-plugin	129321	553	145407	22329	16	3	110
2268	jarekratajski-badlam	370	29	360	0	7	0	0
2269	JaroslavTulach-heapdump	145	50	154	12	0	0	15
	jarslab-babel-maven-plugin	6738156	3984	13065327	1523161	5	3	301
2270	jasminb-jsonapi-converter	53315	1100	62952	6732	20	1	104
	java-sepa-xml-java-sepa-xml	450	48	436	0	6	0	0
2271	javadelight-delight-fileupload	18	6	24	24	0	0	5
2272								
2273								
2274								
2275								



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2276								
2277	javadelight-delight-rhino-sandbox	716	106	697	17	3	0	22
2278	javadev-moneytostr	3394	89	4122	421	4	0	0
2279	JavadocMD-simplelatlng	37	12	35	0	5	0	0
2280	javagl-Common	556	31	586	134	7	2	0
2281	javagl-Obj	1442	92	1566	173	12	5	0
2282	javamate-jar-explorer	963	54	959	0	14	0	0
2283	javamelody-jira-confluence-javamelody	15634	539	15788	132	19	2	87
2284	JavaMoney-jsr354-ri-bp	6386547	361	6386531	24	65	16	0
2285	javamonkey-beetl2.0	288315	2553	340735	13250	65	4	111
2286	javastar920905-mdbook	230	10	234	0	1	1	0
2287	Javastro-jsdfa	78	2	78	0	0	1	0
2288	jbossas-staxmapper	42	20	40	0	2	1	0
2289	jbrundege-taro	17840	661	22242	1642	2	0	74
2290	jcabi-jcabi-jdbc	221	17	268	145	2	0	1
2291	jcabi-jcabi-maven-plugin	16	5	16	0	0	0	3
2292	jcabi-jcabi-ssl-maven-plugin	7245	18	7255	20	2	0	6
2293	jcbvm-i18n-editor	828	23	834	0	2	0	4
2294	jchambers-fast-uuid	6	3	6	0	1	0	0
2295	jchambers-id-obfuscator	10088	377	10055	0	6	9	16
2296	jchambers-jeospatial	371	31	367	0	0	2	9
2297	jdbis-observations-datasource-proxy	1793565	4435	1814460	7424	44	15	241
2298	jdubois-spring-on-azure	35487	333	84878	85506	0	0	104
2299	JeffLi1993-java-core-learning-example	24	3	24	0	1	0	0
2300	jenkins-infra-update-center2	8620907	8624	9088672	3044617	6	4	105
2301	jenkinsci-syslog-java-client	36	17	33	0	6	0	0
2302	jenshadlich-S3-Performance-Test	473	99	451	37	1	0	24
2303	jericks-geometrycommands	389235	2445	390313	10150	22	9	281
2304	jericks-geoserver-shell	310535	1239	314017	11374	37	8	184
2305	jericks-parboiled-wkt	335653	1080	335427	1450	35	1	48
2306	jessin20161124-miniDubboOpen	777	33	775	117	0	0	16
2307	JetBrains-jetCheck	2908831	677	6740752	1180276	28	10	0
2308	jetlang-remoting	6636	75	7372	1083	35	0	4
2309	jetty-project-jetty-eventsource-servlet	11219	361	12897	877	0	5	86
2310	jfaster-mango	464638	2766	487391	23816	92	24	181
2311	jfinal-jfinal	0	0	0	0	0	0	0
2312	jhaltermann-concurrentunit	30	10	29	0	2	6	0
2313	jhaltermann-lyra	7300	217	7857	1984	23	18	27
2314	jhaltermann-typetools	46	15	46	0	3	0	0
2315	jhunters-jprotobuf	66169	1582	66156	411	70	3	57
2316	jiangxincode-SearchEngine	0	0	0	0	0	0	0
2317	jillesvangurp-osm2geojson	599917	146	642920	7548	8	4	17
2318	jingpeicomp-id-generator	96944681	298	96944475	200004	15	6	1
2319	jitsi-bccontrib	6448	21	6448	0	0	3	0
2320	jitsi-jitsi-webrtc-vad-wrapper	4	2	4	0	0	0	1
2321	jitsi-otr4j	1045048	1048	1045590	1481	29	1	108
2322	jklingsporn-vertex-push-onesignal	299	67	287	16	1	0	17
2323	jlawrie-opencsv	1169	209	1086	0	16	3	0
2324	jlinn-quartz-redis-jobstore	132324	1632	145411	8070	33	10	192
2325	jmazzitelli-prometheus-scraper	22405	363	25716	587	14	1	4
2326	jmurty-java-xmlbuilder	497	41	497	0	5	3	0
2327	jnr-jnr-constants	1102	14	1102	0	1	5	0
2328	jnr-jnr-enxio	1049	136	1022	27	0	0	29
2329	jnr-jnr-ffi	28320539	3925	28320981	1076	786	113	185
2330	jnr-jnr-process	16746	228	17061	39	1	0	39
2331	jnr-jnr-unixsocket	3529	228	3548	48	5	12	38
2332	JodaOrg-joda-collect	711	88	1202	581	25	9	3
2333	JodaOrg-joda-time	16156	642	20405	2299	137	12	1
2334	JodaOrg-joda-time-hibernate	53544	1340	56178	6245	0	19	208
2335	JodaOrg-joda-time-i18n	0	0	0	0	0	0	0
2336	joel-costigliola-assertj-neo4j	146050	1340	147719	3775	8	0	121
2337	johncoxon-toml4j	933	217	964	81	17	1	1
2338	johnlpage-POCDriver	983	139	1023	39	0	3	29
2339	JohnsProject-JGameEngine	63	18	63	0	7	0	0
2340	jon-hanson-parsej	1036	65	1026	17	15	4	0
2341	jonatan-kazmierczak-class-visualizer	20	8	20	0	3	0	0
2342	jonathanhds-sql-builder	96834	158	100050	182	17	0	21
2343	joniles-mpxj	14891732	12593	15238101	536126	318	48	77
2344	joniles-rtfparsakit	28796	88	28796	0	3	2	0
2345	jonpereiradev-diff-objects	995	98	976	0	7	1	1
2346	JoonasVali-jartin	0	0	0	16	0	0	0
2347	jordw-heftydb	4126760	7122	4477965	502505	58	47	37
2348	joshgontijo-rest-client	50471	1234	62901	5983	16	5	179
2349	jottley-spring-social-salesforce	31026	1424	41819	2193	8	1	139
2350	jpenren-thymeleaf-ui-dialect	15023	3961	11973	541	11	0	68
2351	jprante-elasticsearch-transport-websocket	189881	3580	237156	74306	9	9	622
2352	jqassistant-archive-jqa-graphml-plugin	92706	1317	94158	2650	10	0	107
2353	jqassistant-archive-jqa-javaee6-plugin	462985	1890	469524	12058	2	0	117
2354	jrampoy-indexed-file-reader	298	9	298	0	2	0	0
2355	jriecken-gae-java-mini-profiler	170	24	170	0	2	2	6
2356	jrmelsha-keccak	30	5	30	0	0	2	0
2357	jrubby-jcodings	94	21	94	0	8	0	0
2358	jrubby-joni	351	36	351	0	5	4	5
2359	js-cookie-java-cookie	833	185	909	98	3	1	40
2360	jscep-jscep	27361	1282	27474	516	7	4	122
2361	jsolve-templ4docx	26319	1126	29340	4640	29	0	69
2362	jsonld-java-jsonld-java	5139578	4360	5193413	89692	55	7	211
2363	jtidy-jtidy	60343	954	60256	13	28	9	22
2364	jtmelton-attack-surface-analyzer	141323	4089	159980	4353	18	0	76
2365	juandesides-email4j	9926	251	11266	1825	5	0	64
2366	julienchastang-charts4j	43656	885	47514	2036	103	0	0

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2341								
2342	julietkilo-CANBabel	32243	141	32252		0	8	0
2343	junchi11-netbeans-color-codes-preview	22281	991	23670	10232	25	2	103
2344	Juniper-netconf-java	439563	1946	455677	21813	7	0	135
2344	justauth-JustAuth	5002	262	4967	0	4	4	40
2345	jvirtanen-config-extras	677	62	708	201	0	0	24
2345	jvitorr-Jeasier	1689	15	1697	0	1	1	5
2346	jzy3d-jGL	16	7	16	4	4	0	0
2347	k55k32-simple-codegen	271	38	262	0	0	0	7
2347	kabutz-striped-executor-service	141	13	624	7	5	2	0
2348	kamaladafrica-codice-fiscale	5070750	117	5070748	0	11	0	3
2349	kamranzafar-jtar	462	39	464	0	2	7	0
2350	kapoorlabs-kiara	8687227	104130	8637936	4910	38	0	2
2350	KasperFranz-AntiAd	90	3	90	0	0	0	1
2351	kayahr-pherialize	217	75	259	25	3	0	0
2352	kazuhikoarase-jaconv	144	28	134	0	2	0	0
2352	keighrim-mac-annotation	83704	1009	85328	56180	62	16	65
2353	keikai-dev-ref	8494	395	8455	55	1	0	55
2353	keith0591-pgp-encryption	6951	308	6951	70	6	1	50
2354	kevin-wang001-mockj	6896	256	7313	155	11	0	30
2355	kevin-wang001-poi-el	3697	180	3913	317	1	0	53
2355	KevinStern-software-and-algorithms	9574	183	9525	0	16	11	0
2356	kgalant-PackageBuilder	801	67	786	0	3	0	8
2357	kifj-jboss-syslog	78	12	78	0	4	0	0
2358	killbilling-recurly-java-library	1913562	2072	2087233	132553	7	16	79
2358	kittylst-ocelotvm	529	63	546	19	11	0	0
2359	kkisura-props-to-constants-generator	80	26	85	0	3	2	2
2359	knowm-jspice	21255	541	21168	15	35	0	5
2360	koen-serneels-ws-proxy	152	36	199	57	7	1	5
2361	koendesnacht-bow-utils	2256	92	2260	14	9	4	17
2361	kohsuke-wordnet-random-name	2971622	7	2971622	0	2	0	0
2362	kolchagov-java-crud-api	1020731	2201	1020820	1402	8	17	4
2363	konsolas-ConditionalCommands	8	4	6	0	1	0	0
2363	KosherJava-zmanim	24	10	22	0	3	0	0
2364	kravchik-jcommon	643	170	693	37	22	5	0
2365	kristofa-mock-http-server	5268	385	5500	316	33	8	55
2365	kristofa-wicket-tagcloud	30	15	26	5	2	0	0
2366	krpors-delver	16	2	16	0	1	0	0
2367	krullert-universe	10059	307	10088	345	53	1	30
2367	ksprojects-zkcopy	196954	1652	204536	2117	4	0	113
2368	kstateome-canvas-api	5562	256	5776	369	9	3	62
2369	Kuangcp-NettyBook2	4000000	4	4000000	0	0	1	0
2369	Kugin-data-reconciliation	949	73	935	16	4	2	12
2370	kungfoo-geohash-java	2325948	224	2325851	2	8	11	1
2371	Kurento-kurento-module-creator	183211	988	183562	1111	69	3	35
2371	kwart-demo-kerberos-in-java	630	99	620	17	0	0	20
2372	Labs64-swid-generator	107	26	102	0	7	0	3
2373	lafaspot-ja3_4java	10	2	20	4	1	0	0
2373	LarryDpk-Google-Bard	114036	1631	121963	6239	9	1	188
2374	lastaflute-lastaflute	33469	4130	35204	383	60	12	42
2375	lastfm-coverartarchive-api	1609	204	1899	242	4	1	46
2375	LatencyUtils-LatencyUtils	209	36	204	23	6	2	1
2376	lazee-freemarker-java-8	100911	675	104865	14359	4	6	67
2377	lbehnke-hierarchical-clustering-java	10469243	3159	11163598	5	9	1	0
2377	Lcry-java-png-compress-util	0	0	0	0	0	0	0
2378	lemire-externalsortinginjava	1072	147	1099	162	9	7	5
2379	leonbloy-pngj	102949	350	111541	44639	32	28	0
2380	leonhad-paradoxdriver	4545864	1022	4556177	7099	94	2	0
2380	leonliao-wechat-app-pay-java-sdk	9189	653	9432	876	14	4	109
2381	lerndevops-samplejavaapp	75	15	74	2	2	0	6
2381	lettuce-io-lettuce-core	2312733	5023	2360427	76045	197	17	261
2382	levigo-jbig2-imageio	15605	308	15484	324	22	3	0
2383	lexburner-consistent-hash-algorithm	56100200	11	56100200	0	1	1	0
2383	lexburner-kdio	8195	3	8195	0	0	1	1
2384	lfkdsk-bnf-ast	466	46	560	18	16	1	0
2385	lhncbc-metamaplite	21045	1444	21277	1293	43	20	20
2385	liangbaika-validate	0	0	0	0	0	0	0
2386	LianjiaTech-json-diff	5066	96	5196	1130	7	0	8
2387	libcoolsocket-java	24	12	28	2	0	0	3
2387	LibrePDF-OpenRTF	248	51	257	12	10	2	3
2388	lightningMan-flash-netty	872	165	825	0	0	0	37
2389	lightoze-gwt-i18n-server	4087	457	3854	73	10	0	14
2389	lingyejun-tick-authenticator	437	9	437	0	2	1	0
2390	linked-solutions-jarql	6459	767	7150	1928	1	1	117
2391	linux-china-plantuml-gist	87731	606	87795	158	0	0	115
2391	linux-china-rocker-template-demo	35	13	35	0	0	0	7
2392	linux-china-toolchains-maven-plugin	3211	194	3219	141	0	0	37
2393	liqpay-sdk-java	79	31	68	0	3	0	1
2393	liuanxin-api-document	83	33	69	3	1	0	5
2394	liudongdong0909-mybatis-generator-core-fix	963	115	931	0	16	0	0
2395	LiveRamp-HyperMinHash-java	33218916	72	33218916	0	5	1	0
2395	lizard-framework-lizard-spi	66	4	66	0	2	0	0
2396	llatinov-sample-dropwizard-rest-stub	28	10	24	0	2	0	0
2397	loadtest4j-loadtest4j	673663	1142	687750	19086	3	0	115
2397	locationtech-spatial4j	5310867	5961	5422602	379882	50	31	199
2398	loehndorf-scengen	60	12	60	0	2	0	0
2399	LogisticsCraft-OcclusionCulling	0	0	0	585	0	0	0
2399	logpresso-CVE-2021-44228-Scanner	8974	80	8997	47	14	2	4
2400	loong0306-commutl4j	102	29	102	8	3	0	7
2401	lucaspouzac-contiperf	17573	180	17971	80	36	16	0
2401	luigiselmi-flink-kafka-consumer	16000	4	16000	0	0	0	1
2402								
2403								
2404								
2405								

	project	# traces in IMM	# unique traces in IMM	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2406								
2407	lujinfeily-jsoncode	359	49	341	0	5	1	0
2408	lukas-vlcek-elasticsearch.demo	89868	3604	114745	29537	0	3	522
2409	lukfor-pgs-calc	55049872	7334	55077099	6282	46	9	175
2410	lyg5623-lightgbm_predict4j	100170	90	100172	25	2	0	25
2411	lzgabel-camunda-cloud-bpmn-converter	103477	1033	113758	2116	7	0	82
2412	macacajs-wd.java	7734	982	9051	1387	4	0	179
2413	magdel-MapNav	36	7	40	0	5	1	0
2414	MagicTheGathering-mtg-sdk-java	1855214	1596	2371367	1108641	4	0	149
2415	mahjong4j-mahjong4j	21348	661	21806	323	50	48	3
2416	maihaoche-rocketmq-spring-boot-starter	40137	1360	41912	1977	4	1	293
2417	mailjet-mailjet-apiv3-java	1841	278	1946	394	4	0	55
2418	mambu-gmbh-Mambu-APIs-Java	58968	245	69415	5140	2	1	35
2419	mangstadt-biweekly	1499173	3091	1927643	639696	220	29	86
2420	ManuelB-facebook-recommender-demo	645407	118	645393	60	3	0	13
2421	mapping-java-maven-calculator-web-app	0	0	0	0	0	0	0
2422	marcosvidolin-doco	1113	298	1088	92	8	0	60
2423	MarkShen1992-Mashibing_High_Concurrency	4	2	4	0	1	0	0
2424	marshall-path-classloader	202	59	183	4	0	1	9
2425	marshall-svn-diffstat	15	3	15	0	0	0	1
2426	martin-g-wicket-jquery-selectors	1695	321	1701	173	12	2	68
2427	martincooper-java-datatable	2334	67	3120	1287	3	0	14
2428	marwin1991-keep-changelog-maven-plugin	91	29	90	13	6	0	2
2429	Maschell-JNUSLib	14949	43	14944	0	7	4	0
2430	massigerardi-ta4j-strategy-parser	312785	707	370241	13315	1	0	33
2431	Mastercard-client-encryption-java	320669	2587	347803	18698	28	0	234
2432	Mastercard-oauth1-signer-java	200824	92	200862	74	9	0	12
2433	mateiw-littlebasic	6080	460	6503	639	4	1	25
2434	mattdavey-EuronextClone	30321	1149	31804	2213	10	0	113
2435	matthewhorridge-mdock	168	26	168	0	6	0	0
2436	matthiaszimmermann-ethereum-paper-wallet	13410	663	13607	327	5	4	82
2437	mattsheppard-gethostname4j	0	0	0	0	0	0	0
2438	maven-nar-nar-maven-plugin	5090	256	5116	50	54	14	27
2439	maxmind-geoip-api-java	0	0	12	8	0	0	0
2440	mxtomin-decimal	3150	10	3149	349	1	1	0
2441	mbizhani-Adroit	37398	1174	41438	3635	13	1	136
2442	mbronshteyn-quarkus-jdbi-project	306961	6824	315482	15269	0	17	736
2443	mdeanda-lorem	10308	59	10292	0	5	0	0
2444	mdewilde-opml-parser	60782	1663	63448	2776	14	3	158
2445	mdewilde-podcast-parser	87268	637	87180	217	6	1	61
2446	medmes-keycloak-monitoring-spi	22844	157	25398	2343	1	3	19
2447	meixuesong-aggregate-persistence	2312	212	2307	0	14	1	2
2448	melmedia-jgroups-aws	492	29	480	0	1	0	6
2449	mercadopago-sdk-java	9053	629	9733	1261	7	3	26
2450	Mercateo-spring-security-jwt	181610	1861	185555	5680	8	0	174
2451	messai-engineering-Yuga	22984	215	22966	6	13	0	17
2452	messenger4j-messenger4j	20496	1161	21299	1394	0	0	127
2453	metamug-java-jwt	269	32	281	18	4	1	5
2454	meteoinfo-wContour	0	0	0	0	0	0	0
2455	MezereonXP-AnomalyDetectTool	1319487	346	1321989	666	13	2	4
2456	mfathi91-persian-date-time	18	9	18	0	3	0	0
2457	mguymon-model-citizen	13934	712	13876	1076	14	4	132
2458	mhshams-jnbis	2346	57	2343	0	17	2	1
2459	michaeltandy-log4j-json	294	48	294	36	4	1	7
2460	michaelwittig-java-q	284	60	272	0	16	0	0
2461	microsoft-AppCenter-Test-Appium-Java-Extensions	8420	82	12082	7733	3	0	37
2462	MieskeB-json-api-spring-boot	18292	99	20155	1801	6	1	6
2463	mike10004-common-helper	17521	974	20429	5578	34	14	195
2464	mike706574-java-map-support	39	7	38	0	3	0	1
2465	mikera-enlight	90902	489	145635	7872	0	0	42
2466	mikera-mikera	59660	334	60837	3097	70	11	0
2467	mikera-randomz	14	1	14	0	1	0	0
2468	mileshehrichs-QuifFFT	858	49	846	40	3	0	10
2469	mimmo-Mallet	62573441	993	62579835	5122	117	39	6
2470	mincloud1501-DevOps	0	0	0	0	0	0	0
2471	mirabeau-nl-ceddl4j	18621	697	21766	3444	4	1	38
2472	MitchTalmadge-ASCII-Data	1466	13	1466	48	3	1	0
2473	mixer-beam-client-java	258	82	253	4	4	0	15
2474	Mixermachine-base-test	32546	84	32517	4	13	7	0
2475	mixpanel-mixpanel-java	9614	111	10172	863	5	1	9
2476	mjsalerno-UnoBot	292	51	297	48	2	0	4
2477	mlaccetti-rocksaw	4	2	4	0	0	0	1
2478	mlieshoff-jcrapi	1295054	2755	1293231	1536	82	6	54
2479	mock-server-mockserver-maven-plugin	292306	2563	297839	9794	7	2	280
2480	mocnik-science-geogrid	4000576	62	4000576	0	4	0	0
2481	mojohaus-aspectj-maven-plugin	84257	240	237480	150132	7	0	58
2482	mojohaus-extra-enforcer-rules	261566	1353	266330	7842	17	0	118
2483	mojohaus-license-maven-plugin	6819	320	6811	122	29	2	31
2484	mokiat-java-data-front	23133	999	23395	675	43	0	109
2485	monitorjbl-excel-streaming-reader	27874	705	28187	1887	14	16	72
2486	monkeymq-jgossip	4283	564	4665	325	7	1	75
2487	MottoX-BeanUtils	48	18	48	0	2	0	0
2488	MottoX-TAOMP	850030	9	1700030	0	0	4	0
2489	MountCloud-graphql-client	54	29	54	0	4	0	4
2490	moznon-java-random-string	420	47	521	30	6	0	0
2491	mp911de-logstash-gelf	527279	15419	543170	28063	58	17	345
2492	mpatric-mp3agic	18913	535	20245	1265	24	8	72
2493	MPriess-GeoJSON-POJO	3781	378	4719	517	2	0	59
2494	mraible-jhipster6-demo	36421	337	86718	86426	0	0	104
2495	MRPanyu-excel-imp-exp	151015	1548	156283	46182	10	2	160
2496	msanez-sonar-branch-community	197687	1704	200222	5056	5	0	140

		# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2471	project							
2472	msarhan-ummalkura-calendar	0	0	0	0	0	0	0
2473	msmys-esjc	559	91	558	15	20	0	12
2474	msigwart-fakeload	3128910	1157	3129991	3904	16	5	150
2475	msojocs-OmenChallengeHelper	0	0	0	0	0	0	0
2476	mulesoft-labs-rhinodo	11205	327	11656	1615	10	1	61
2477	murffi-zebra4j	550314	836	612695	70472	34	1	19
2478	murrelsCoding-auth	0	0	0	0	0	0	0
2479	MutabilityDetector-MutabilityDetector	321833	3118	337363	9331	54	9	224
2480	mvallim-emv-qrcode	1266	89	2549	1699	22	0	4
2481	mvel-mvel	10193420	1189	10221938	25206	108	45	6
2482	mvp4g-mvp4g	38592	1057	46653	1161	88	27	7
2483	mvpjava-springboot-JUnit5-tutorial	6807	633	6681	14	0	0	86
2484	mwaji-toml4j	13716	922	15881	1558	41	13	18
2485	mybatis-mapper-provider	12030	583	12109	652	22	1	122
2486	myui-btree4j	40317936	405	40360251	8	8	6	0
2487	named-data-jndn	5481	363	5788	801	58	9	0
2488	naosense-markdown-preview-sync	15	12	6	0	0	0	1
2489	narupley-not-going-to-be-commons-ssl	360838	1435	472938	2878	60	6	139
2490	natf17-shopify-embedded-app	503566	3561	513539	9995	17	21	470
2491	naver-lucy-xss-servlet-filter	8514	378	8437	0	3	0	22
2492	NawaMan-NullableJ	42	10	42	0	0	5	0
2493	neilswainston-FragGenie	13047	563	12967	184	8	0	40
2494	neo-search-multiple-string-searcher	32392	171	32910	371	14	1	0
2495	Neop-mudmap2	4067	409	4390	353	33	0	7
2496	netarchivesuite-heritrix3-wrapper	4	2	4	0	0	1	0
2497	neuland-jade4j	375840	1367	386675	26015	70	17	57
2498	nicolas-raoul-jakaroma	651	126	579	0	4	0	5
2499	nicoulaj-checksum-maven-plugin	8287	277	8272	0	4	5	24
2500	niesfisch-java-code-tracer	563	80	558	50	11	0	14
2501	NightFlightCaptain-ssm	0	0	0	0	0	0	0
2502	Nilhcem-FakeSMTP	503	108	510	43	0	0	31
2503	ning-compress	5750	28	7036	487	8	4	0
2504	ning-tr13	96	17	96	0	1	4	0
2505	NishkarshRaj-Maven-Using-CMD	0	0	0	0	0	0	0
2506	nla-outbackcdx	14744	1230	16946	1606	54	10	151
2507	NLP2RDF-NIF-lib	75662	1620	86311	21830	6	12	250
2508	NLPchina-ansj_seg	5262918	9752	5260586	1043	65	12	7
2509	noelherrick-jell	3137	51	3115	0	6	1	0
2510	nonblocking-nonsnapshot-maven-plugin	1331	244	1279	236	21	1	11
2511	noophq-subtitle	25952	25	25951	0	12	0	0
2512	Nordstrom-nifi_terraform_generator	2589	323	2890	46	30	7	2
2513	nothingax-micro-DB	2000254	961	2125044	2557	45	1	0
2514	npathai-hamcrest-optional	33	5	33	0	0	1	1
2515	nRo-DataFrame	51924	1658	58470	3112	81	7	38
2516	NTTData-EMEA-QAT-cherry	12917	820	12779	51	3	0	103
2517	nurkiewicz-typeof	3	1	3	0	1	0	0
2518	nutzam-nutzwx	11643	343	18723	3885	1	0	58
2519	o19s-RankyMcRankFace	83096	359	83016	1027	38	3	0
2520	ocaffe-numero-por-extenso	2353	65	2348	0	4	0	0
2521	ocpsoft-common	202	43	193	4	8	0	0
2522	octavian-h-time-series-math	1286894	542119	749622	4566	2	0	119
2523	odiszapc-nginx-java-parser	26834	806	31872	2656	20	5	29
2524	offbynull-kademlia	9052	236	10041	537	16	0	3
2525	offbynull-portmapper	10204	386	10591	66	33	0	8
2526	ogibayashi-kafka-topic-exporter	2076	164	2380	231	3	0	40
2527	ogrodnek-java_fathom	26	2	26	0	1	0	0
2528	ohioit-rundec-http-plugin	587951	1848	682666	167658	5	2	272
2529	olcaytaner-201-DataStructures-Java	35	9	30	0	2	0	0
2530	OnlineCodex-OnlineCodex	340508	516	367986	62966	2	10	67
2531	ooxi-jdatauri	70	16	72	14	2	0	0
2532	open-dis-open-dis-java	86	17	81	3	5	0	1
2533	open-eid-cdoc4j	76380	2165	80226	18857	40	9	127
2534	openapi-tools-swagger-maven-plugin	6	2	6	0	1	0	0
2535	opencharles-charles-rest	5444	438	15401	9930	2	9	104
2536	opendatalab-de-geojson-jackson	6546	428	8717	869	7	0	61
2537	OpenGamma-ElSql	3055	237	3043	376	24	0	4
2538	opengeospatial-ets-ogcap-features10	3300517	3250	3356771	397264	32	10	367
2539	openhkr-hkr-si	2849	139	2798	56	11	0	18
2540	OpenLiberty-ci.common	3300	333	3238	23	49	7	6
2541	openshift-openshift-restclient-java	1100373	3892	1128743	36120	54	3	180
2542	openskynetwork-java-adsb	6	2	6	0	0	0	1
2543	opentimestamps-java-opentimestamps	81540	504	118500	2723	29	7	9
2544	opentracing-contrib-java-concurrent	325	24	325	30	3	1	3
2545	opentracing-contrib-java-jdbc	1240	124	1241	4	12	3	12
2546	optimize-command4j	267	43	256	0	7	4	2
2547	OrderLab-OKLib	236378	1533	249911	17830	43	7	10
2548	OrhanKupusoglu-bazelize-maven-plugin	14	7	12	0	1	1	1
2549	os72-protobuf-dynamic	3210	305	3143	31	8	0	27
2550	osglworks-java-tool	1347872	940	1353369	2484	109	19	7
2551	oskopek-javaanpr	88537	944	88621	3749	8	0	100
2552	OWASP-json-sanitizer	23955	108	29236	22424	3	1	0
2553	OWASP-OWASP-WebScarab	877	28	883	15	0	0	12
2554	OWASP-url-classifier	6564849	865	8569818	4548965	23	14	42
2555	Pablissimo-SonarTsPlugin	389946	2351	390681	3786	17	6	154
2556	pablobastidasv-kc_security	3313	363	4162	336	0	0	45
2557	package-url-packageurl-java	2368	271	2415	142	9	2	6
2558	PacketPublishing-Learn-Algorithms-and-Data-Stru...	526	154	471	4	5	0	9
2559	pagehelper-Mybatis-PageHelper	326968	2718	340265	25976	41	7	198
2560	palatable-lambda	1915839	11934	4675576	630592	43	13	111
2561	palatable-shoki	38447	92	41155	6765	10	1	12

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2536								
2537	palindromicity-simple-syslog	9892344	2083	11140891	28279	6	3	39
2538	parship-roperity	286930	2171	287005	775	20	0	135
	pascalgn-jiracli	27613	1573	31825	2941	65	6	130
2539	patrickfav-uber-adb-tools	10453	363	10473	41	28	1	15
2540	patriques82-alphavantage4j	739	59	981	715	6	0	8
	pawandubey-griffin	0	0	0	0	0	0	0
2541	PawelGorny-lostword	44678	79	44673	1265	11	0	11
2542	paypal-Gibberish-Detector-Java	716142	8364	710683	0	5	1	0
	PearsonEducation-StatsAgg	78654	2191	81066	16395	43	17	197
2543	pebbleblog-pebble	49783	398	49935	273	81	3	16
2544	pedrovgs-Algorithms	448	109	429	0	52	0	0
	peter-lawrey-admin-Chronicle-Ticker	72	12	72	0	0	1	0
2545	peterbencze-serritor	178071	1720	197531	7545	4	0	165
2546	PeterisP-morphology	59417755	3104	66404235	1071671	53	11	5
	petterobam-mds2index.html	67033	1940	69204	1133	4	0	83
2547	pfmiles-min-velocity	1914	122	1915	111	21	3	0
2548	PhantomThief-thrift-pool-client	930	9	1530	12	2	0	4
	phax-ph-events	3368	140	3574	70	9	2	23
2549	pheerathach-promptpay	2264	55	2256	3	9	0	2
2550	philihp-weblabora	18008	244	19113	15485	18	0	11
	pierredavidbelanger-logback-awslogs-appender	9790	792	9779	252	3	1	95
2551	pingcap-tidb-loadbalance	51	19	51	0	7	0	0
2552	pizihao-crow	1542477	270	1583115	81558	41	2	0
	pk8est-table-printer	10580	105	11053	5339	13	0	13
2553	PlayPen-playpen-core	24	15	15	0	1	2	0
2554	plutext-docx4j-export-FO	59244	1217	60164	1109	13	4	214
	pmlopes-aws-lambda-native-vertx	3147	101	3142	304	0	2	29
2555	PoslavskySV-libdivide4j	226472	34	226472	0	0	8	0
2556	pouyaesm-signed-community-detection	2133	70	2137	18	12	0	0
	ppke-nlpg-purepos	3826	432	5938336	69	40	3	10
2557	prat-man-unique4j	829	80	889	6	11	0	7
2558	printingin3d-javascad	9451620	3780	9651106	15249	119	13	33
	profesorfalken-jPowerShell	0	0	0	0	0	0	0
2559	profesorfalken-jSensors	792	197	688	28	7	4	2
2560	Progether-JAdventure	32674	356	33110	576	23	0	39
	Proteus1989-Air-Explorer-Decrypter	27	10	27	0	3	0	0
2561	prpatel-serverless-java-mini-workshop	0	0	0	0	0	0	0
2562	psjava-psjava	48622	985	48687	380	53	16	0
	purcell-jargs	312	16	322	62	5	1	0
2563	purecloudlabs-elasticsearch-lambda	4926	590	5143	416	2	8	134
2564	PureMVC-puremvc-java-standard-framework	0	0	16	0	0	0	0
2565	PvdBerg1998-PNet	313	31	347	76	8	1	1
	pvtto-konte-art	1997	194	2026	10	41	1	0
2566	qala-io-java-beginner-course	9	3	9	0	1	0	1
	qmx-jitescript	453	52	442	0	8	0	1
2567	qoomon-banking-swift-messages-java	1255172	1764	1283211	40286	29	2	112
2568	qqilihq-property-editor	32	6	32	3	2	0	2
	qubole-qds-sdk-java	25054	1247	28994	1106	5	5	185
2569	qwhai-algorithms-sort	404	15	398	9	2	0	2
2570	qzw1210-JustAuth	2669	322	2611	11	2	0	51
	radkovo-Pdf2Dom	691900	3882	710428	20081	21	3	217
2571	RagedUnicorn-github-release-maven-plugin	20176	644	22581	5959	0	0	107
2572	RakhmedovRS-DataStructuresAndAlgorithmsInJava2n...	4919	126	4890	6	21	9	0
	ralscha-bsoncodec	435	50	425	0	2	1	9
2573	random-maven-profile-activator-extension	75	21	75	0	0	0	6
2574	raydac-java-binary-block-parser	1564842	6461	1588291	195545	384	52	18
	RayDeCampo-java-xirr	14199	665	14339	397	2	0	83
2575	raymanrt-orientqb	4960	90	4991	1285	21	0	3
2576	razorpay-razorpay-java	140133	1982	145220	3970	8	7	150
	reactiverse-vertx-maven-plugin	335762	2421	344573	12884	27	4	326
2577	realexpayments-rxp-hpp-java	88287	909	88223	1719	6	0	108
2578	RealZimboGuy-ewelink-api-java	283	41	282	0	7	0	4
	reckart-tt4j	60	18	56	0	3	3	1
2579	redlink-gmbh-redlink-java-sdk	1206	229	1262	48	1	0	62
2580	reggert-reb4j	34	9	32	14	0	0	4
	reinert-JJSchema	9218	197	9528	58	12	0	32
2581	remondis-it-pact-consumer-builder	31845	2105	32376	967	6	2	223
2582	renfei-ik-analyzer	28697627	889	28697617	119400	7	1	12
	resourcepool-ssdp-client	92	25	94	5	6	0	0
2583	RestComm-jasn	206	15	206	0	1	5	0
2584	RestExpress-PluginExpress	98060	597	173052	376	4	0	178
	resurfaceio-logger-java	10842	314	13666	1023	18	3	6
2585	RetailMeNot-TestRailSDK	30746	561	35846	6546	0	2	53
2586	retest-recheck.cli	1087	218	1064	114	1	1	62
	retog-wymiwyg-commons-core	36	8	36	0	2	2	0
2587	retomerz-mosquito	0	0	0	0	0	0	0
2588	rex-soft-rexdb	466	68	491	109	10	0	2
	ricksbrown-jgenhtml	863540	430	866913	41225	24	15	17
2589	righttod-pst-digger	1199	124	1182	13	2	0	28
2590	RIGS-IT-sonar-xanitizer	129022	370	135483	58866	25	2	23
	ripreal-V8LogScanner	40673	1587	40788	2248	68	0	119
2591	riversun-bigdoc	2998	106	2998	0	4	6	4
2592	riversun-java-promise	9172	117	9442	194	17	19	3
	rjohnsondev-java-libpst	162	12	162	0	4	0	0
2593	rjstanford-spreedly-java	6	2	6	0	0	1	0
2594	rjwut-ian	5931	380	5854	190	68	12	0
	RKumsher-utils	260	27	299	51	0	0	10
2595	rmorth-duct-tape	584	11	631	492	2	0	5
2596	rmorth-visible-assertions	675	49	667	40	10	0	4
	robert-bor-aho-corasick	34546	189	96055	796	14	3	0

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	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2601								
2602	RobertStewart-privateer	0	0	0	0	0	0	0
2603	robshep-logback-logdna	795	122	819	82	1	0	32
2604	rohanpadhye-vasco	14458312	39954	19750464	587143	28	7	617
2605	RokLenarcic-AhoCorasick	37722	2495	35798	0	14	30	0
2606	romanb-JPA-NestedSet	25355	1536	27736	2414	8	1	316
2607	rombert-desktop-maven-notifier	0	0	0	0	0	0	0
2608	romix-java-concurrent-hash-trie-map	294133	15	294331	28212	3	3	0
2609	ronmamo-reflections	53680	604	221839	4202	48	5	25
2610	roskart-dropwizard-jaxws	37299	1370	38390	1011	9	3	321
2611	rovats-java-utils	8	2	13	0	0	1	0
2612	rpau-javalang	64298	2046	66963	307	58	0	0
2613	rponte-dbunitmanager	17	4	17	0	1	0	2
2614	rponte-pin-decrypter	50	6	50	0	3	0	0
2615	rpuch-xremoting	41579	617	41714	4952	14	3	107
2616	rrice-java-string-similarity	212	24	212	3	3	0	0
2617	rsatrio-Keycloak-Federation-ExistingDB	656871	2196	682852	25187	1	0	179
2618	rstoyanchev-spring-mvc-chat	4012	468	4108	134	0	0	161
2619	RTBHOUSE-avro-fastserde	50090	852	50842	4720	23	8	40
2620	rtyley-animated-gif-lib-for-java	58	7	58	0	2	1	0
2621	RUB-NDS-BurpSSOExtension	454	82	419	0	1	0	5
2622	rusakovichma-DocsReporter	1235240	196	1235266	82	9	2	39
2623	rweather-noise-java	441974	113	441974	0	4	4	0
2624	ryenus-rop	361	95	337	36	5	0	0
2625	rynr-launchpad	0	0	0	0	0	0	0
2626	rythmengine-rythmengine	2068304	3509	2169010	37663	142	13	98
2627	sabomichal-liquibase-mssql	23348	257	23355	13	2	0	31
2628	sagiegurari-fax4j	458955	3199	471781	17777	46	10	250
2629	sailthru-sailthru-java-client	162804	1888	167026	6089	3	1	125
2630	sambatrister-sql-formatter	0	0	0	0	0	0	0
2631	sangkeon-java-opa-wasm	64	12	94	32	2	0	5
2632	sangupta-bloomfilter	0	0	0	2000000	0	0	0
2633	sangupta-gather	1923	139	2225	6	15	2	0
2634	sangupta-murmur	36	6	36	12	0	1	0
2635	saaj-mentabean	61389	1012	63059	6834	53	9	16
2636	SAP-archive-cloud-paulpredicts	285906	4322	316453	53861	32	2	456
2637	sarajaba-prettytable4j	521	31	580	103	5	0	8
2638	Sayi-swagger-diff	156157	2433	168138	13420	42	3	150
2639	sbesada-java.math.expression.parser	328001806	69	328001801	0	14	0	0
2640	sbesada-java.math.numerical.library	1297447	170	1297427	0	28	0	0
2641	schmatterer-musicbrainz2-java	56829	684	77611	43695	66	1	52
2642	SchweizerischeBundesbahnen-springboot-graceful-...	1286	64	1277	0	0	0	16
2643	scijava-scripting-closure	34400	610	66690	6706	2	0	75
2644	Scout24-illegal-transitive-dependency-check	4469	105	4459	5	22	1	2
2645	Scout24-spring-boot-rpm-maven-plugin	95543	265	97861	2483	1	1	38
2646	scoutant-polyline-decoder	1015	15	1010	0	4	0	0
2647	scouter-contrib-scouter-plugin-server-alert-sla...	24	2	24	0	1	0	0
2648	scylladb-kafka-connect-scylladb	299	40	531	75	1	0	11
2649	sd4324530-JTuple	721	78	716	583	2	0	20
2650	sdorra-shiro-unit	22950	900	23304	842	0	0	129
2651	seahen-maven-s3-wagon	123	6	126	4	0	0	1
2652	seansegal-tincisnotcatan	16162	210	16151	258	33	1	3
2653	searls-jasmine-maven-plugin	1717140	3932	1743339	43270	13	3	213
2654	seaswalker-netty-wheel	222	34	244	14	5	1	6
2655	secure-software-engineering-sootdiff	317277	755	373995	16885	0	0	54
2656	sedran-moment4j	17	9	16	0	2	0	0
2657	seintur-jmixer	2296	202	2350	53	9	0	53
2658	seregamorph-hamcrest-more-matchers	232	78	211	0	8	1	12
2659	serg472-htmlcompressor	695248	2436	707029	64621	6	2	166
2660	sgoertzen-sonar-break-maven-plugin	729	152	884	87	2	0	46
2661	sgoeschl-freemarker-cli	293093	3117	300456	6302	19	3	298
2662	sgreben-regex-builder	2912	210	2825	38	20	0	0
2663	shapeseecurity-salvation	23203	518	26193	1192	33	10	0
2664	shazam-shazamcrest	120824	539	141371	26153	31	0	36
2665	shipilev-jdk-backports-monitor	18	9	18	0	3	0	0
2666	shred-commons-xml	25242	723	25442	686	0	1	88
2667	shreyasht-java8-validator	17	3	17	0	1	0	0
2668	Shunshun94-discord-bcdicebot	17382	329	20327	3641	25	2	62
2669	SiftScience-kafka-assigner	705	101	865	298	10	1	3
2670	silentsoft-oss-notice-file-generator	443	10	443	0	2	1	0
2671	simonnagl-netdata-java-orchestrator	356566	4231	492924	118513	9	2	361
2672	SimpleAstronomy-simple-astronomy-lib	120166	15	120166	0	1	2	0
2673	SimpleFinance-kafka-dropwizard-reporter	44	2	44	0	0	0	1
2674	simplenlg-simplenlg	17901810	1217	17929089	20981	66	4	64
2675	simplymequeeny-json-string-schema-generator	8324	307	8365	662	2	4	34
2676	sinrimin-netty-socketio-client	13574	51	13576	6	4	0	27
2677	sjbutler-idtk-j	129	29	118	5	5	0	3
2678	skayvanfar-cheetah	0	0	0	0	0	0	0
2679	skyscreamer-JSONassert	6912	226	7444	979	29	3	0
2680	slub-urnlib	904	112	902	8	6	5	0
2681	smacke-jaydio	77	12	85	2	2	4	1
2682	smallnest-fastjson-jaxrs-json-provider	197738	2252	226473	18177	1	1	305
2683	smartics-smartics-jboss-modules-maven-plugin	1440	180	1416	141	24	0	19
2684	smartrics-RestFixture	7026	439	7322	50	38	2	47
2685	smartystreets-smartystreets-java-sdk	27975	2114	28226	950	11	0	159
2686	smola-galimatias	381054	688	410963	11483	46	5	11
2687	smsapi-smsapi-java-client	0	0	0	0	0	0	0
2688	sndyuk-logback-more-appenders	15341	1009	15997	1089	6	3	130
2689	solita-functional-utils	4612	550	6360	2950	26	2	0
2690	Sonal0409-DevOpsCodeDemo	60	9	77	0	2	0	3
2691	SonarSource-sonar-auth-bitbucket	56032	1088	56705	1647	8	4	140
2692								
2693								
2694								
2695								



	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2666	SonarSource-sonar-auth-github	4472	151	4545	277	10	0	39
2667	sonatype-heuristic-version	4181811	2655	4964215	192021	18	4	48
2668	sonian-elasticsearch-jetty	480864	4566	573622	154091	16	8	689
2669	soot-oss-heros	221044	2580	225830	8435	53	33	126
2670	sorra-TraceSonar	8	5	6	0	2	0	0
2671	sparkapi-SparkJava	73295	754	80458	12714	17	2	68
2671	spinscale-elasticsearch-graphite-plugin	212598	3558	274592	74963	19	4	671
2672	spoofzu-DeepViolet	828	285	951	86	0	0	42
2672	spotify-annoy-java	1270	43	1270	90	3	1	0
2673	spotify-async-datastore-client	2236	267	2195	153	10	0	29
2674	spotify-futures-extra	79203	988	79631	941	4	2	118
2674	spotify-hdfs2cass	538	65	546	61	5	0	17
2675	spotify-netty-zmtp	65428	435	67357	3534	8	5	98
2676	spotify-simple-bigtable	602	19	760	12	1	0	10
2676	spotify-ssh-agent-proxy	100	16	100	0	4	0	3
2677	spotify-trickle	6045	410	9182	1588	11	28	46
2678	spriet2000-vertx-handlers-http	24973	153	24959	4457	0	3	54
2679	spring-projects-spring-session-data-mongodb	367424	2813	374311	9681	4	1	322
2679	springml-salesforce-wave-api	50709	1880	54987	5894	19	4	162
2680	SpringStudent-GyJdbc	2829	111	4579	966	13	0	1
2681	spullara-cli-parser	252	44	280	69	5	0	0
2681	spullara-java-future-jdk8	500028	16	500028	0	1	6	0
2682	spyhunter99-installcert	33	7	31	5	1	0	2
2683	square-burst	11901	278	12081	375	12	2	9
2683	square-gifencoder	67	26	67	48	8	0	0
2684	square-jna-gmp	6121	12	6121	0	7	2	0
2684	square-osstrich	6	2	6	0	1	0	0
2685	square-pagerduty-incidents	648	67	647	18	5	0	11
2686	sranka-jdbcimage	0	0	16	38	0	0	0
2687	srikanth-lingala-zip4j	145113	1506	147702	4453	18	2	119
2687	sritejakv-splitwise-java	64738	1118	65909	1856	2	0	110
2688	ssedano-jump-consistent-hash	2	1	2	0	1	0	0
2689	sstrickx-yahooofinance-api	19429	211	19457	1059	11	0	25
2689	starkbank-ecdsa-java	109	52	77	0	5	0	0
2690	StarlangSoftware-Corpus	421955	336	421951	0	13	1	0
2690	StarlangSoftware-TurkishDeascifier	997730	2983	1185632	325783	1	3	30
2691	StarlangSoftware-TurkishMorphologicalAnalysis	41748001	8818	44963937	2393243	43	7	6
2692	StarlangSoftware-TurkishMorphologicalDisambiguation	225834125	6534	229643909	14356821	4	3	43
2692	StarlangSoftware-TurkishPropBank	36922496	76	36922494	0	5	2	3
2693	StarlangSoftware-TurkishSentiNet	63329660	20	63329660	0	3	0	1
2694	StarlangSoftware-TurkishSpellChecker	21477262	24259	22315282	2214120	22	3	31
2694	StaticBeagle-ETK4J	322	47	303	0	11	1	0
2695	stefanbirkner-fake-sftp-server-rule	25074	551	26539	2205	4	2	135
2696	stefano81-dcpabe	183519	5771	189199	10601	26	4	179
2696	STEMLab-JlNeditor	79	35	76	22	0	0	13
2697	steveash-jopenfst	29683	386	91784	32949	34	3	18
2698	stevespringett-CPE-Parser	2353	413	2165	157	18	2	21
2698	stevespringett-cvss-calculator	518	12	518	0	3	0	0
2699	stevespringett-owasp-risk-rating-calculator	0	0	0	0	0	0	0
2700	stevespringett-threatmodel-sdk	2730	83	2730	0	9	0	0
2700	stoicflame-ofx4j	21490	338	23572	2470	14	18	29
2701	str4d-ed25519-java	15698	25	15697	0	3	6	1
2702	streamx-co-ExTree	77	1	77	0	0	0	1
2702	streamx-co-FluentJPA	8563	194	23336	30866	20	0	22
2703	stripe-interview-java-interview-prep	0	0	0	0	0	0	0
2704	studerw-td-ameritrade-client	32486	2366	44058	4097	7	0	152
2704	stupid1t-poi-excel	68450	1027	75253	9410	7	3	92
2705	SumoLogic-sumologic-kinesis-connector	11948	1042	14133	1483	5	0	210
2706	Supera-Inovacao-Tecnologia-PS-Java	14953	599	16046	436	0	3	149
2706	supercargo-guice-persist-jooq	166533	1742	166717	1899	0	0	185
2707	SValentyin-Payment-Management-System	0	0	0	5	0	0	0
2708	SvenEwald-xmlbeam	1085964	1128	1093343	3791	69	17	0
2708	Sweetiee-yi-Jaba	17289494	4237	18670048	3460539	11	0	8
2709	swtctpro-jingtum-lib-java	15441	1799	15399	8	3	1	105
2710	sylvainlaurent-swagger-validator-maven-plugin	87165	2008	94500	4892	31	0	232
2710	sysco-middleware-kafka-client-collector	16937	689	19135	1819	1	0	108
2711	szagriichuk-search-api	19702	43	19702	4	10	0	3
2712	tacitknowledge-jcr-mock	2216	57	2420	181	4	5	4
2712	TakahikoKawasaki-nv-i18n	278	14	276	0	3	0	0
2713	TakahikoKawasaki-nv-websocket-client	99	20	96	8	3	0	0
2714	takari-directory-watcher	139	21	135	0	1	1	5
2714	takari-maven-profiler	148966	300	149032	153	6	0	40
2715	takari-takari-local-repository	20054	1243	19067	2031	33	17	23
2716	takashi-ishio-sellogger	421687	431	428825	10796	45	10	13
2716	talios-coffee-maven-plugin	2254136	1718	2259620	7784	0	0	61
2717	taurus-io-expression	592140	1072	682415	24704	8	3	34
2718	taxjar-taxjar-java	4182	110	6216	2148	1	4	24
2718	tbuktu-ntru	1158	137	1120	4	8	1	0
2719	tchristofferson-Config-Updater	119485	1331	120004	15251	11	0	34
2720	tcudrt-hadoop-lzo-java	6	2	6	14	0	1	0
2720	tcudrt-jdeb	317587	4022	317343	723	51	12	307
2721	tcudrt-jdependency	1014039	391	1014045	4951	10	10	7
2722	tdebatty-java-LSH	9008	609	8876	0	1	1	0
2722	tdebatty-java-string-similarity	304	97	300	16	17	1	0
2723	tdunning-anomaly-detection	0	0	0	0	0	0	0
2724	tdunning-bandit-ranking	7903755	15	7903755	101112	2	1	7
2724	tdunning-open-json	132442	141	132674	401	19	7	0
2725	teacy-apns4j	48	14	44	0	1	0	0
2726	tecsinapse-tecsinapse-data-io	860994	2050	869319	237839	40	18	194
2726	telefonicaid-netphony-network-protocols	106950	1322	106787	0	169	20	1

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2731								
2732	tencentyun-cos-java-sdk-v4	4	1	4	0	0	0	1
2733	tenlee2012-elasticsearch-analysis-demo	687	76	770	45	0	0	29
2734	terrestris-shogun-legacy	2297	170	2259	22	1	0	31
2735	tfredrich-DateAdapter]	24	4	24	0	1	0	0
2736	thammegowda-tika-ner-corenlp	19287	464	19480	1111	0	0	66
2737	ThangLeQuoc-aqi-calculator	1667	146	1667	95	8	0	4
2738	Thare-Lam-fast-elasticsearch-query-builder	277	59	423	108	0	0	18
2739	TheBlackChamber-commons-encryption	1232574	3865	1230792	2	7	1	108
2740	theborakompanion-thymeleaf-extras-shiro	46478	4176	44305	1692	7	9	101
2741	thegedge-java-radix-tree	1711741	366	1711651	640961	3	1	0
2742	TheHolyWaffle-TeamSpeak-3-Java-API	119	36	115	28	6	0	1
2743	ThinkingDataAnalytics-java-sdk	2571	145	2589	82	4	13	7
2744	thomasmueller-minperf	6731707	110	6731707	2126	4	7	0
2745	thomasmueller-tinyStats	4071630	811	4071695	0	3	8	0
2746	ThoughtWire-hazelcast-locks	53928	668	56721	4252	12	0	176
2747	thrau-jarchivelib	10130	333	10223	194	18	8	73
2748	threeedr3am-dubbo-exp	5	1	5	0	0	0	1
2749	threefish-nutz-sqltpl	19335	1007	22806	1334	1	0	57
2750	threerings-react	454	44	446	2	7	4	0
2751	ThreeTen-threetenbp	14406364	1792	14412420	10276	131	96	0
2752	thundra-io-thundra-lambda-warmup	38638	1248	38435	198	3	0	144
2753	thymeleaf-thymeleaf-itutorial	5483	3613	2411	0	0	0	15
2754	thymeleaf-thymeleafexamples-layouts	2	1	2	0	1	0	0
2755	TiBeN-ia-rcade	3592	247	3530	0	19	0	11
2756	tking-JSTUN	116	7	116	0	4	0	0
2757	tkutcher-jgrade	952	110	1070	106	14	8	13
2758	TNG-property-loader	314907	2046	320298	9107	10	0	122
2759	tobyweston-Refactoring-Chapter-1	142	30	132	0	4	1	0
2760	tommyettinger-BlazingChain	3427	33	3415	0	2	1	0
2761	tommyettinger-RegExodus	367300	781	366993	338943	12	0	0
2762	tomsik68-mclauncher-api	0	0	0	0	0	0	0
2763	tomwhite-set-game	1440735	3109	1822128	320155	15	3	20
2764	tonikolaba-BatBat-Game	1618	21	1618	136	3	0	7
2765	tony19-named-regexp	311	38	327	107	6	1	1
2766	tonydeng-fmj	855	107	918	91	1	0	31
2767	toolbox4minecraft-amidst	351900	668	365465	10905	16	7	5
2768	toolfactory-narcissus	206	102	206	0	0	2	3
2769	topwingo-zeroFlow	7910	463	8403	674	6	0	81
2770	ToryZhou-design-pattern	87	28	86	0	11	3	0
2771	traiana-kafka-spiffe-principal	15642	665	15786	489	0	0	88
2772	trekawek-coffee-gb	626	87	634	530	3	1	0
2773	trganda-yaml2http	12979	570	13896	1472	6	1	76
2774	Trigary-AdvancementCreator	3512	30	3564	40	0	0	8
2775	triologygmbh-reCAPTCHA-V2-java	12558	1170	14798	2401	3	0	224
2776	tripluo-router	368396	1780	371733	39433	48	22	204
2777	trystan-AsciiPanel	172364	347	221569	13642	2	0	29
2778	Tslovak-selenium-wrapper-framework	2031	66	2491	5187	1	0	20
2779	tsurdilo-temporal-java-workshop	42593	2010	46911	3464	2	21	330
2780	tud-fop-j-Algo	761	44	749	0	1	0	0
2781	tupilabs-tap4j	12419	313	12938	763	9	6	24
2782	tv2norge-collab-java-serf-client	10	2	10	0	0	0	1
2783	tvesalainen-bcc	601	109	611	102	21	1	0
2784	twitter-joauth	357262	232	466912	212330	16	1	8
2785	twitter-netty-http2	2163	131	2463	24	3	0	47
2786	twitter-nodes	2119	135	2988	1067	12	1	13
2787	twitter-sbf	195509	966	236374	594371	31	8	11
2788	twitter-twitter-korean-text	4479247	116	6938036	5345521	5	1	7
2789	typesafehub-netty-http-pipelining	1887	59	1884	0	0	1	15
2790	uber-common-jvm-profiler	2256	333	2238	156	27	2	37
2791	udger-udger-java	20291	52	20287	0	9	3	0
2792	uklimaschewski-JMXWrapper	774	38	938	4	5	4	0
2793	ukman-kolobok	130	27	129	0	4	0	1
2794	undera-perfmon-agent	354	29	468	376	11	0	1
2795	unitsofmeasurement-unit-ri	1675	55	1773	24	15	1	0
2796	unitsofmeasurement-uom-se	2691	134	2770	62	23	3	0
2797	unruly-control	15868	911	15869	50	1	13	116
2798	unruly-java-8-matchers	369	96	338	26	4	0	4
2799	uPortal-Project-portlet-utils	4878	362	4866	94	0	1	62
2800	uPortal-Project-WebproxyPortlet	60143	421	152650	120351	0	0	65
2801	uprotocol-platform-java	380290	2407	379896	191	0	0	107
2802	upyun-java-sdk	2169	264	2258	523	15	3	38
2803	usingsky-KoreanLunarCalendar	0	0	0	0	0	0	0
2804	usnistgov-Lineage-Mapper	11647	802	11545	40	42	3	9
2805	uwolfer-gerrit-rest-java-client	43533	1420	45876	4253	63	6	140
2806	valery1707-kaitai-maven-plugin	11854	537	12396	764	8	5	53
2807	valfirst-jbehave-junit-runner	713147	3693	723355	17765	20	14	306
2808	vangj-jbayes	1559411	587	1581718	1753	55	7	42
2809	vashishthask-eclipse-to-maven	261	32	255	28	2	0	11
2810	vasia-gelly-streaming	265358	2619	313490	29623	6	9	432
2811	VaughnVernon-mockroservices-java	666	146	628	19	12	3	3
2812	vaulttec-sonar-auth-oidc	246732	2318	250086	7237	1	2	180
2813	vdurmont-emoji-java	194383	361	194331	0	14	5	3
2814	vdurmont-etaprinter	36	23	20	0	1	1	1
2815	vdurmont-semver4j	6937	169	6926	216	15	1	0
2816	VerbalExpressions-JavaVerbalExpressions	568	37	899	54	7	0	0
2817	verilylifesciences-genomewarp	120680	1374	124536	8825	41	7	102
2818	vert-x3-vertx-docgen	20367	683	24082	738	27	5	0
2819	vert-x3-vertx-maven-starter	3026	89	3028	149	0	2	34
2820	vibur-vibur-object-pool	0	0	0	0	0	0	0
2821	victor-porcar-delayed-batch-executor	198785	419	198684	1344	9	20	11
2793								
2794								
2795								

	project	# traces in IMMs	# unique traces in IMMs	intra-procedural repeatedly monitored identical traces	inter-procedural repeatedly monitored identical traces	IMMs in CUT	IMMs in test	IMM in library
2796								
2797	victorrentea-clean-code-dive	6	2	6	0	1	0	0
2798	vidstige-jadb	25474	984	25423	187	33	0	105
2799	vincentrussell-java-ini-parser	406	99	372	6	10	0	4
2800	vinhkhuc-lbfgs4j	0	0	0	0	0	0	0
2800	vinta-pangu.java	20	8	20	0	1	0	2
2801	vitalidze-chromecast-java-api-v2	33922	989	43441	4759	15	1	77
2801	vivekragunathan-JINQ	1079	148	1053	93	17	8	0
2802	viz-centric-flair-commons	374	82	349	0	22	0	0
2802	vizor-games-infraworld-cornerstone	2942	81	2937	24	12	1	0
2803	vlingo-xoom-auth	266915	1189	267572	7197	22	31	115
2804	vlingo-xoom-cluster	592149	1290	592566	1601	35	9	187
2805	vlingo-xoom-helloworld	179614	2902	193208	9604	6	7	402
2805	vlingo-xoom-streams	2894	101	3142	198	5	4	30
2806	vlingo-xoom-symbio	263296	21490	242314	21656	16	16	35
2807	vmzakharov-dataframe-ec	511205	1505	609197	28761	45	3	79
2807	volkodavs-secret-santa	513	35	511	0	6	6	0
2808	volodya-lombrozo-hg-revision-plugin	140	34	134	0	13	0	1
2808	vs49688-RAFTools	787	92	1181	906	0	0	30
2809	w3blogfr-zebra-zpl	10	5	19	32	3	0	0
2810	walmartlabs-gozer	11534	938	11472	369	64	7	94
2811	warmuuh-libsass-maven-plugin	4922	97	4922	0	7	2	18
2811	wavefrontHQ-wavefront-fdb-tailer	3617	421	3765	242	5	1	70
2812	wavefrontHQ-wftop	2153	177	2162	68	8	8	24
2813	waynedyck-gwt-gantt	60	18	70	4	3	0	0
2813	wcnwyx-gm-encryption	32126	1863	32079	0	0	0	97
2814	wdtinc-mapbox-vector-tile-java	39780	1099	44110	14529	21	1	81
2814	wealthfront-thompson-sampling	5474	634	5437	133	0	1	86
2815	weaverj-erserver	26	5	26	0	3	0	0
2816	webbit-webbit	25135	1285	26182	799	28	10	140
2817	webbynet-protostuff-runtime-proto	4252	219	5114	1104	1	1	24
2817	webjars-webjars-locator	352674	1003	358403	2774	10	0	96
2818	weblyzard-nilsimsa	164	6	164	0	1	2	0
2819	webmate-io-webmate-sdk-java	2393	455	2682	395	2	0	51
2819	WebThingsIO-webthing-java	1370	85	1402	108	0	4	16
2820	wechatpay-apiv3-CertificateDownloader	1260	82	1257	8	0	1	20
2821	weibocom-yar-java	3390	267	4222	564	4	3	44
2821	welk1n-ReverseShell-Java	113	15	112	4	1	0	5
2822	wepay-WePay-Java-SDK	0	0	0	0	0	0	0
2823	weswilliams-GivWenZen	210902	1817	223570	27311	37	3	258
2823	whizzosoftware-WZWave	8809	806	8814	197	20	0	122
2824	william-ferguson-au-asymmetric-crypto	2	1	2	0	1	0	0
2825	wiqer-ef-redis	40000080	18	40000078	36	1	2	4
2825	wmixvideo-bradesco-boleto-registro	37	11	37	0	2	0	2
2826	wnameless-workbook-accessor	347384	1219	359915	9983	0	13	222
2827	woodpecker-appstore-yonyou-nc-decrypter	0	0	0	0	0	0	0
2827	Workday-timeseries-forecast	148428	38	148412	0	4	4	0
2828	wso2-config-mapper	45206	1622	49755	5312	49	9	99
2829	wstrange-GoogleAuth	380	86	355	0	4	3	6
2829	wttech-Maven-CRX-Plugin	423	78	494	45	0	0	21
2830	wuba-LPA-Detector	261760	1229	314356	40252	4	0	241
2831	wxynihao-book118-downloader	20123	276	22188	810	3	0	43
2831	wz2cool-mybatis-dynamic-query	2473	568	2977	346	17	2	64
2832	xcbeeyond-ConferenceTrackManagement	62	7	62	0	1	1	1
2833	Xchuanshuo-LiteNESEmulator	107	27	98	0	1	0	4
2833	xcsp3team-XCSP3-Java-Tools	2656113	914	2655837	0	47	1	0
2834	xebia-Xebium	56169	108	56217	352	9	1	45
2835	xianfengyi-ExprEngine	39312	635	42400	1674	2	0	32
2836	xiangbohua-scales-bridge	0	0	0	0	0	0	0
2836	xingePush-xinge-api-java	2514	498	2685	330	4	0	35
2837	xjodoin-torpedoquery	84873	1404	86686	2252	45	2	129
2837	xnnyygn-dynamic-log-level	2	1	2	0	0	0	1
2838	xspec-xspec-maven-plugin-1	18573634	4701	28645836	113081	21	2	449
2839	xuanbo-dag-executor	3345291	61	5876746	407196	3	1	9
2839	xuminwlt-j360-tools	0	0	0	0	0	0	0
2840	XUranus-lightsocks-java	2016	8	2016	0	0	1	4
2841	yagarea-java-chat	42	8	42	0	3	0	1
2841	yawkat-reflect	0	0	0	0	0	0	0
2842	yfpeng-pengyifan-leetcode	4722	241	4657	0	20	1	4
2843	yichen0831-OpenCC-Java	777	80	777	0	6	0	4
2843	yinlou-mltk	8670	372	8636	106	25	0	0
2844	yomoron-hashids-java	11001072	41	11001065	0	5	0	0
2845	ysc-word	3403960	1154	3556611	11133	43	5	36
2846	Yubico-yubico-j	0	0	0	0	0	0	0
2846	YuboLong-MyLive	1332	125	1379	84	0	0	40
2847	yuch7-cwlexec	73264	1412	75977	6406	117	1	78
2847	yurelle-Base45Encoder	21649	10035	11653	0	3	6	0
2848	zafarkhaja-jsemver	6694	140	6671	10	27	0	0
2849	zalandoresearch-zap	1905502	5043	1955790	61450	45	4	302
2849	zapodot-embedded-ldap-junit	151182	1446	151933	16362	5	0	158
2850	zencoder-zencoder-java	27495	922	30906	3906	7	0	78
2851	zeroturnaround-maven-jrebel-plugin	132	40	118	0	6	0	0
2851	zeroturnaround-zt-process-killer	1921	140	2023	1226	8	1	38
2852	Zettelkasten-Team-Zettelkasten	7797972	8685	8102056	194978	10	2	522
2853	zhaolihe-useragent-parser	70028	362	69956	8871	9	2	20
2853	zheng93775-mysql-lock	701	119	678	8	1	2	8
2854	zhixiangli-code-similarity	61	37	41	0	4	0	0
2855	zhkl0228-TraceReader	20468482	121	20468445	6	5	0	0
2855	ZhongAnTech-dmds	3179	235	3245	105	5	4	51
2856	zhongxunking-sync	47075	100	47113	24115	1	0	4
2857	zhoujianling-PointCloudUtilities	6736648	39765	6737225	6240	63	5	1
2857	Zlika-reproducible-build-maven-plugin	1238	137	1228	0	16	3	5
2858	zman2013-scuttlebutt	7505	774	7451	607	5	0	108
2859	ZsBT-mrz-java	1806	88	1773	4	6	0	4
2859	ztelur-consistent-hash-algorithm	6969	8	6966	0	1	0	0
2860								