Table 1: Coverage Results for Open-Source Apps (BenchGP)

ID	App Name	Year	Login	Crash	#Activities	#Reached Activities (%)		
						Tool	Manual	Combined
1	battery	2012			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
2	lockpatterngenerator	2013			3	3 (100.0%)	3 (100.0%)	3 (100.0%)
3	passwordmaker	2014			3	3 (100.0%)	3 (100.0%)	3 (100.0%)
4	tomdroid	2014			8	6 (75.0%)	7 (87.5%)	7 (87.5%)
5	frozenbubble	2017			4	2 (50.0%)	3 (75.0%)	3 (75.0%)
6	A2dp	2020			9	7 (77.8%)	8 (88.9%)	8 (88.9%)
7	BookCatalogue	2020			35	20 (57.1%)	21 (60.0%)	21 (60.0%)
8	anymemo	2021			28	16 (57.1%)	16 (57.1%)	16 (57.1%)
9	KeePassDroid	2022			15	4 (26.7%)	9 (60.0%)	9 (60.0%)
10	whohasmystuff	2022	✓		7	6 (85.7%)	5 (71.4%)	5 (85.7%)
11	k9mail	2023	✓		33	10 (30.3%)	21 (63.6%)	21~(63.6%)
12	myexpenses	2023	✓	√	43	25 (58.1%)	36 (83.7%)	36 (83.7%)
13	wikipedia	2023	✓		48	34 (70.8%)	42 (87.5%)	42 (87.5%)
14	Wordpress	2023	✓		111	23 (20.7%)	40 (36.0%)	40 (36.0%)
Ave	Average				23.5	65.7%	75.7%	76.7%

Table 2: Coverage Results for Open-Source Apps (BenchNotGP)

Triangle 2007	$_{\mathrm{ID}}$	App Name	Year	Login	Crash	#Activities	#Reached Activities (%)		
2 SpriteText 2008	Ľ						Tool	Manual	Total
3 batterydog 2011	1	triangle	2007			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
HNdroid 2011	2	SpriteText	2008			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
5 quicksettings 2011 11 10 90.9% 11 100.0% 11 100.0% 1 100	3	batterydog	2011			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
6 zooborns 2011 2	4	HNdroid	2011		✓	5	1 (20.0%)	1 (20.0%)	1 (20.0%)
7 aka 2012 4 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 8 alogeat 2012 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 1 (100.0%) 2 (100.0%) 2 (100.0%)	5	quicksettings	2011			11	10 (90.9%)	11 (100.0%)	11 (100.0%)
8 alogcat 2012 2 2 (100.0%) 2 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 2 (40.0%) 4 (80.0%) 4 (80.0%) 1 (100.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) 2 (200.0%) <td>6</td> <td>zooborns</td> <td>2011</td> <td></td> <td></td> <td>2</td> <td>1 (50.0%)</td> <td>1 (50.0%)</td> <td>1 (50.0%)</td>	6	zooborns	2011			2	1 (50.0%)	1 (50.0%)	1 (50.0%)
9 anycut 2012	7	aka	2012			4	4 (100.0%)	4 (100.0%)	4 (100.0%)
10	8	alogcat	2012			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
11 Bites 2012	9	anycut	2012			4	4 (100.0%)	4 (100.0%)	4 (100.0%)
12 bomber 2012 2	10	autoanswer	2012			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
13 dialer2 2012 5	11	Bites	2012		✓	5	2 (40.0%)	2 (40.0%)	2 (40.0%)
14 fileexplorer 2012	12	bomber	2012			2	1 (50.0%)	1 (50.0%)	1 (50.0%)
15 gestures 2012	13	dialer2	2012			5	2 (40.0%)	4 (80.0%)	4 (80.0%)
16 jamendo	14	fileexplorer	2012			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
17 mileage	15	gestures	2012			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
18 mw	16	jamendo	2012			14	8 (57.1%)	9 (64.3%)	9 (64.3%)
19 Nectroid 2012	17	mileage	2012			50	28 (56.0%)	47 (94.0%)	47 (94.0%)
20	18	mnv	2012			8	7 (87.5%)	8 (100.0%)	8 (100.0%)
21 sanity 2012 28 25 (89.3%) 27 (96.4%) 27 (96.4%) 22 soundboard 2012 1 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 (75.0%) 4 (100.0%)	19	Nectroid	2012			6	6 (100.0%)	6 (100.0%)	6 (100.0%)
22 soundboard 2012 1 1 100.0% 1 100.0% 1 100.0% 1 100.0% 2 3 SyncMyPix 2012 7 4 (57.1%) 5 (71.4%)	20	Photostream	2012			4	3 (75.0%)	3 (75.0%)	3 (75.0%)
23 SyncMyPix 2012 7 4 (57.1%) 5 (71.4%) 5 (71.4%) 24 worldclock 2012 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 2 (75.1%) 19 (73.1%) 10 (70.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%)	21	sanity	2012			28	25 (89.3%)	27 (96.4%)	27 (96.4%)
24 worldclock 2012 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 25 I.NM 2013 4 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 3 (75.0%) 10 (73.1%) 19 (73.1%) 10 (10.0%) 16 (100.0%) 16 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) <td< td=""><td>22</td><td>soundboard</td><td>2012</td><td></td><td></td><td>1</td><td>1 (100.0%)</td><td>1 (100.0%)</td><td>1 (100.0%)</td></td<>	22	soundboard	2012			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
25 LNM	23	SyncMyPix	2012			7	4 (57.1%)	5 (71.4%)	5 (71.4%)
26 acal 2014 26 19 (73.1%) 10 (100.0%) 1 (100.0%) 1 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (30.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) </td <td>24</td> <td>worldclock</td> <td>2012</td> <td></td> <td></td> <td>2</td> <td>2 (100.0%)</td> <td>2 (100.0%)</td> <td>2 (100.0%)</td>	24	worldclock	2012			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
27 DalvikExplorer 2014 16 16 (100.0%)	25	LNM	2013			4	3 (75.0%)	3 (75.0%)	3 (75.0%)
28 importcontacts 2014 4 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 4 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (50.0%) 2 (50.0%) 3 (30.0%) 3 (30.0%) 3 (30.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 3 (50.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%)	26	acal	2014			26	19 (73.1%)	19 (73.1%)	19 (73.1%)
29 MunchLife 2014 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 30 netcounter 2014 3 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 4 1 1 (100.0%) 1 (100.0%) 1 (100.0%) 3 2 2 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 3 3 3 3 3 3 3 3	27	DalvikExplorer	2014			16	16 (100.0%)	16 (100.0%)	16 (100.0%)
30 netcounter 2014 3 3 100.0% 3 100.0% 3 3 100.0% 3 3 100.0% 3 3 100.0% 3 3 100.0% 3 100.0% 3 100.0% 3 100.0% 3 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 1 100.0% 2 100.0% 2 100.0% 2 100.0% 3 3 agatl 2015 4 1 (25.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 3 4 aarddict 2015 6 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 3 3 3 3 3 3 3 3 3	28	importcontacts	2014			4	4 (100.0%)	4 (100.0%)	4 (100.0%)
31 RandomMusicPlayer 2014 1 1 100.0% 1 100.0% 1 100.0% 32 Yahtzee 2014 2 2 100.0% 2 100.0% 2 100.0% 2 100.0% 33 aagtl 2015 4 1 (25.0%) 2 (50.0%) 2 (50.0%) 2 (50.0%) 34 aarddict 2015 6 2 (33.3%) 2 (33.3%) 2 (33.3%) 35 aGrep 2015 6 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 36 manpages 2015 2 2 (100.0%) 2 (100.0%) 37 SpriteMethodTest 2015 3 3 (100.0%) 3 (100.0%) 3 (100.0%) 38 weightchart 2015 5 1 (20.0%) 5 (100.0%) 5 (100.0%) 39 Amazed 2016 1 1 (100.0%) 1 (100.0%) 1 (100.0%) 40 MultiSmSender 2016 6 6 (100.0%) 6 (100.0%) 6 (100.0%) 41 DivideAndConquer 2017 3 3 (100.0%) 3 (100.0%) 3 (100.0%) 42 ringdroid 2017 5 3 (60.0%) 3 (100.0%) 3 (100.0%) 43 swiftp 2017 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 44 adsdroid 2018 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 45 alarmelock 2021 2 1 (50.0%) 3 (100.0%) 3 (100.0%) 47 hotdeath 2022 3 3 (100.0%) 3 (1	29	MunchLife	2014			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
32 Yahtzee 2014 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 aagt 2015 4 1 (25.0%) 2 (50.0%) 2 (50.0%) 34 aarddict 2015 6 6 (100.0%) 6 (100.0%) 6 (100.0%) 35 aGrep 2015 6 6 (100.0%) 6 (100.0%) 6 (100.0%) 36 manpages 2015 2 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 4 (100.0%)	30	netcounter	2014			3	3 (100.0%)	3 (100.0%)	3 (100.0%)
33 aagtl 2015 4 1 (25.0%) 2 (50.0%) 2 (50.0%) 34 aarddict 2015 6 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (33.3%) 2 (30.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 5 (100.0%) 5 (100.0%) 5 (100.0%) 5 (100.0%) 5 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 3 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) 2 (100.0%) <t< td=""><td>31</td><td>RandomMusicPlayer</td><td>2014</td><td></td><td></td><td>1</td><td>1 (100.0%)</td><td>1 (100.0%)</td><td>1 (100.0%)</td></t<>	31	RandomMusicPlayer	2014			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
34 aarddict 2015 6 2 (33.3%) 2 (33.3%) 2 (33.3%) 35 aGrep 2015 6 6 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 7 7 7 7 7 7 7 7 7	32	Yahtzee	2014			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	33	aagtl	2015			4	1 (25.0%)	2 (50.0%)	2 (50.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	34	aarddict	2015			6	2 (33.3%)	2 (33.3%)	2 (33.3%)
37 SpriteMethodTest 2015 3 3 100.0% 3 100.0% 3 3 100.0% 3 3 100.0% 3 3 100.0% 3 3 100.0% 3 3 100.0% 3 3 100.0% 3 100.0% 5 100.0% 5 100.0% 5 100.0% 5 100.0% 5 100.0% 5 100.0% 5 100.0% 5 100.0% 5 100.0% 6 100.0	35	aGrep	2015			6	6 (100.0%)	6 (100.0%)	6 (100.0%)
38 weightchart 2015 5 1 (20.0%) 5 (100.0%) 5 (100.0%) 39 Amazed 2016 1 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 1 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 6 (100.0%) 7 (36	manpages	2015			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	37	SpriteMethodTest	2015			3	3 (100.0%)	3 (100.0%)	3 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	38	weightchart	2015			5	1 (20.0%)	5 (100.0%)	5 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	39	Amazed	2016			1	1 (100.0%)	1 (100.0%)	1 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	40	MultiSmsSender	2016			6	6 (100.0%)	6 (100.0%)	6 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	41	DivideAndConquer	2017			3	3 (100.0%)	3 (100.0%)	3 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	42		2017			5	3 (60.0%)	3 (100.0%)	3 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	43	swiftp	2017			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	44	adsdroid	2018			2	2 (100.0%)	2 (100.0%)	2 (100.0%)
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	45	alarmclock	2021			2	1 (50.0%)	2 (100.0%)	2 (100.0%)
47 hotdeath 2022 3 3 (100.0%) 3 (100.0%) 3 (100.0%)	46	blokish	2021			3			
	47	hotdeath	2022			3			
	Ave	rage				6.0	85.0%	90.4%	90.4%