

Tool Name	Execution Time (s)	Total Energy (J)	CPU Energy (J)	Memory Energy (J)	Energy/Time (J/s)
CMake	3 (1.8)	3 (3.0)	5 (3.0)	4 (1.8)	5 (1.8)
qmake	2 (1.7)	5 (3.3)	2 (2.3)	3 (1.7)	4 (1.7)
Qbs	4 (2.0)	6 (3.5)	5 (3.0)	5 (2.0)	3 (1.5)
NetBeans IDE	4 (2.0)	7 (4.0)	6 (3.5)	5 (2.0)	3 (1.5)
Code::Blocks	6 (3.0)	9 (5.0)	8 (5.0)	7 (3.0)	1 (1.0)
CLion	3 (1.8)	3 (3.0)	5 (3.0)	4 (1.8)	5 (1.8)
CodeLite	4 (2.0)	3 (3.0)	5 (3.0)	5 (2.0)	3 (1.5)
Eclipse CDT	4 (2.0)	3 (3.0)	5 (3.0)	5 (2.0)	3 (1.5)
KDevelop	3 (1.8)	3 (3.0)	5 (3.0)	4 (1.8)	5 (1.8)
Geany	6 (3.0)	10 (6.0)	9 (6.0)	7 (3.0)	1 (1.0)
Anjuta DevStudio	5 (2.5)	8 (4.2)	7 (4.0)	6 (2.5)	2 (1.2)
Qt Creator	3 (1.8)	4 (3.2)	4 (2.8)	4 (1.8)	4 (1.7)
DialogBlocks	4 (2.0)	3 (3.0)	5 (3.0)	5 (2.0)	3 (1.5)
Zinjal	4 (2.0)	6 (3.5)	5 (3.0)	5 (2.0)	3 (1.5)
GPS	3 (1.8)	2 (2.8)	3 (2.5)	2 (1.5)	5 (1.8)
Oracle Developer Studio	4 (2.0)	7 (4.0)	6 (3.5)	5 (2.0)	3 (1.5)
Sphere Engine	1 (1.0)	1 (2.0)	1 (2.0)	1 (1.0)	6 (2.0)
AWS Cloud9	6 (3.0)	9 (5.0)	8 (5.0)	7 (3.0)	1 (1.0)

Table 1: Binary-trees tools ranked with 0 decimal points

Tool Name	Execution Time (s)	Total Energy (J)	CPU Energy (J)	Memory Energy (J)	Energy/Time (J/s)
CMake	3 (2.2)	2 (7.5)	2 (7.5)	3 (3.0)	6 (2.2)
qmake	2 (2.0)	6 (8.7)	5 (8.7)	3 (3.0)	7 (2.3)
Qbs	4 (2.5)	5 (8.5)	6 (9.0)	5 (3.5)	3 (1.5)
NetBeans IDE	4 (2.5)	7 (10.5)	7 (10.5)	5 (3.5)	3 (1.5)
Code::Blocks	6 (4.0)	10 (15.0)	10 (15.0)	7 (5.0)	1 (1.0)
CLion	3 (2.2)	2 (7.5)	2 (7.5)	3 (3.0)	6 (2.2)
CodeLite	4 (2.5)	2 (7.5)	2 (7.5)	5 (3.5)	3 (1.5)
Eclipse CDT	4 (2.5)	3 (8.0)	3 (8.0)	3 (3.0)	8 (2.5)
KDevelop	3 (2.2)	2 (7.5)	2 (7.5)	3 (3.0)	6 (2.2)
Geany	6 (4.0)	10 (15.0)	10 (15.0)	7 (5.0)	1 (1.0)
Anjuta DevStudio	5 (3.2)	8 (11.2)	8 (11.2)	6 (4.2)	2 (1.2)
Qt Creator	3 (2.2)	4 (8.1)	4 (8.2)	4 (3.1)	5 (2.1)
DialogBlocks	4 (2.5)	2 (7.5)	2 (7.5)	5 (3.5)	3 (1.5)
ZinJal	4 (2.5)	3 (8.0)	3 (8.0)	5 (3.5)	4 (2.0)
GPS	2 (2.0)	2 (7.5)	2 (7.5)	2 (2.8)	6 (2.2)
Oracle Developer Studio	4 (2.5)	7 (10.5)	7 (10.5)	5 (3.5)	3 (1.5)
Sphere Engine	1 (1.0)	1 (7.0)	1 (7.0)	1 (2.0)	9 (4.0)
AWS Cloud9	6 (4.0)	9 (13.5)	9 (13.5)	7 (5.0)	1 (1.0)

Table 2: Binary-trees tools ranked with 1 decimal points

Tool Name	Execution Time (s)	Total Energy (J)	CPU Energy (J)	Memory Energy (J)	Energy/Time (J/s)
CMake	2 (5.5)	2 (11.8)	1 (11.5)	3 (6.8)	8 (9.5)
qmake	7 (6.7)	7 (14.3)	7 (14.0)	6 (8.3)	7 (9.0)
Qbs	8 (7.0)	6 (13.5)	6 (13.5)	5 (8.0)	4 (6.0)
NetBeans IDE	9 (7.5)	8 (17.0)	8 (16.5)	5 (8.0)	5 (7.5)
Code::Blocks	12 (10.0)	10 (23.0)	11 (23.0)	10 (11.0)	3 (5.0)
CLion	2 (5.5)	2 (11.8)	1 (11.5)	3 (6.8)	8 (9.5)
CodeLite	6 (6.5)	1 (11.5)	1 (11.5)	7 (9.0)	4 (6.0)
Eclipse CDT	4 (6.0)	4 (12.5)	3 (12.5)	2 (6.5)	8 (9.5)
KDevelop	2 (5.5)	2 (11.8)	1 (11.5)	3 (6.8)	8 (9.5)
Geany	13 (11.0)	11 (25.0)	12 (24.0)	12 (13.0)	1 (4.0)
Anjuta DevStudio	10 (8.8)	8 (17.0)	9 (17.0)	8 (9.2)	2 (4.8)
Qt Creator	5 (6.2)	5 (13.0)	4 (12.8)	4 (7.6)	6 (8.6)
DialogBlocks	8 (7.0)	1 (11.5)	1 (11.5)	5 (8.0)	3 (5.0)
ZinJal	6 (6.5)	5 (13.0)	5 (13.0)	9 (10.0)	5 (7.5)
GPS	3 (5.8)	1 (11.5)	1 (11.5)	3 (6.8)	9 (10.5)
Oracle Developer Studio	9 (7.5)	8 (17.0)	8 (16.5)	5 (8.0)	5 (7.5)
Sphere Engine	1 (3.0)	3 (12.0)	2 (12.0)	1 (4.0)	10 (16.0)
AWS Cloud9	11 (9.5)	9 (20.0)	10 (20.0)	11 (12.5)	1 (4.0)

Table 3: Binary-trees tools ranked with 2 decimal points

Tool Name	Execution Time (s)	Total Energy (J)	CPU Energy (J)	Memory Energy (J)	Energy/Time (J/s)
CMake	2 (9.5)	2 (11.8)	2 (11.8)	2 (8.5)	11 (13.5)
qmake	6 (13.3)	7 (14.3)	7 (14.3)	6 (11.7)	9 (12.3)
Qbs	7 (13.5)	6 (13.5)	6 (13.5)	5 (10.5)	4 (8.5)
NetBeans IDE	8 (14.5)	8 (17.0)	8 (17.0)	5 (10.5)	7 (11.5)
Code::Blocks	11 (21.0)	10 (23.0)	10 (23.0)	10 (16.0)	5 (9.0)
CLion	2 (9.5)	2 (11.8)	2 (11.8)	2 (8.5)	11 (13.5)
CodeLite	3 (10.5)	1 (11.5)	1 (11.5)	8 (13.0)	5 (9.0)
Eclipse CDT	4 (11.5)	4 (12.5)	4 (12.5)	3 (9.0)	10 (13.0)
KDevelop	2 (9.5)	2 (11.8)	2 (11.8)	2 (8.5)	11 (13.5)
Geany	12 (22.0)	11 (25.0)	11 (25.0)	11 (19.0)	1 (7.0)
Anjuta DevStudio	9 (16.5)	8 (17.0)	8 (17.0)	7 (12.2)	3 (7.8)
Qt Creator	5 (11.7)	5 (13.0)	5 (13.0)	4 (10.0)	8 (12.0)
DialogBlocks	8 (14.5)	1 (11.5)	1 (11.5)	5 (10.5)	1 (7.0)
Zinjal	4 (11.5)	5 (13.0)	5 (13.0)	9 (15.0)	6 (10.5)
GPS	4 (11.5)	1 (11.5)	1 (11.5)	3 (9.0)	12 (15.5)
Oracle Developer Studio	8 (14.5)	8 (17.0)	8 (17.0)	5 (10.5)	7 (11.5)
Sphere Engine	1 (4.0)	3 (12.0)	3 (12.0)	1 (4.0)	13 (22.0)
AWS Cloud9	10 (18.0)	9 (20.0)	9 (20.0)	11 (19.0)	2 (7.5)

Table 4: Binary-trees tools ranked with 3 decimal points