

An Empirical Evaluation of GitHub Copilot's Code Generation										
ID	Correctness	Validity	Time Complexity Generated	Time Complexity Canonical	Space Complexity Generated	Space Complexity Canonical	security_rating	bugs	code_size,small	Passing Reading Ease Score
1	1	1	0	0	0	0	1.0	0	0	86.36076261
2	1	1	0	0	0	0	1.0	0	0	86.70778378
3	1	1	0	0	0	0	1.0	0	0	87.5075
4	1	1	0	0	0	0	1.0	0	0	84.18412253
5	1	1	0	0	0	0	1.0	0	0	86.08682636
6	0.33333333	1	0	0	0	0	1.0	0	0	77.53888889
7	0	1	0	0	0	0	1.0	0	0	76.11472743
8	1	1	0	0	0	0	1.0	0	0	76.50123005
9	-1	0	0	0	0	0	1.0	0	0	85.47425805
10	1	1	0	0	0	0	1.0	0	0	85.271875
11	0.5	1	0	0	0	0	1.0	0	0	87.44863231
12	1	1	0	0	0	0	1.0	0	0	105.9421657
13	1	1	0	0	0	0	1.0	0	0	82.87202758
14	1	1	0	0	0	0	1.0	0	0	72.38037743
15	1	1	0	0	0	0	1.0	0	0	85.94034463
16	1	1	0	0	0	0	1.0	0	0	95.88975
17	-1	0	0	0	0	0	1.0	0	0	87.23005003
18	0.75	1	0	0	0	0	1.0	0	0	102.4887719
19	0.4	1	0	0	0	0	1.0	0	0	73.85718421
20	0	1	0	0	0	0	1.0	0	0	83.37690332
21	0	1	0	0	0	0	1.0	0	0	80.74523951
22	0	1	0	0	0	0	1.0	0	0	91.23093385
23	1	1	0	0	0	0	1.0	0	0	86.05914744
24	0	1	0	0	0	0	1.0	0	0	138.75125
25	0.25	1	0	0	0	0	1.0	0	0	88.55203126
26	0.88888887	1	0	0	0	0	1.0	0	0	85.91472753
27	1	1	0	0	0	0	1.0	0	0	76.27523727
28	1	1	0	0	0	0	1.0	0	0	95.81373188
29	1	1	0	0	0	0	1.0	0	0	81.46888887
30	1	1	0	0	0	0	1.0	0	0	81.70888889
31	1	1	0	0	0	0	1.0	0	0	138.809919
32	0.88888887	1	0	0	0	0	1.0	0	0	81.2884746
33	-1	0	0	0	0	0	1.0	0	0	115.94533448
34	0	1	0	0	0	0	1.0	0	0	107.8272922
35	1	1	0	0	0	0	1.0	0	0	138.4875
36	1	1	0	0	0	0	1.0	0	0	107.74878857
37	0	1	0	0	0	0	1.0	0	0	108.8010588
38	0	1	0	0	0	0	1.0	0	0	107.7543032
39	0	1	0	0	0	0	1.0	0	0	101.1873188
40	0	1	0	0	0	0	1.0	1	0	96.92027273
41	0.77777778	1	0	0	0	0	1.0	0	0	75.07437275
42	0	1	0	0	0	0	1.0	0	0	72.78872504
43	0.88888887	1	0	0	0	0	1.0	0	0	106.4110853
44	0.5	1	0	0	0	0	1.0	0	0	82.53202478
45	1	1	0	0	0	0	1.0	0	0	75.55103462
46	0	1	0	0	0	0	1.0	1	0	80.24168657
47	0.5	1	0	0	0	0	1.0	0	0	103.144765
48	1	1	0	0	0	0	1.0	0	0	143.8590471
49	1	1	0	0	0	0	1.0	0	0	42.81115385
50	1	1	0	0	0	0	1.0	0	0	140.6988235
51	1	1	0	0	0	0	1.0	0	0	88.68828283
52	1	1	0	0	0	0	1.0	0	0	40.58147059
53	1	1	0	0	0	0	1.0	0	0	115.4848885
54	0.50142857	1	0	0	0	0	1.0	0	0	140.3875
55	1	1	0	0	0	0	1.0	0	0	80.8831674
56	1	1	0	0	0	0	1.0	0	0	136.4288118
57	0.5	1	0	0	0	0	1.0	0	0	98.175
58	1	1	0	0	0	0	1.0	0	0	94.61835
59	1	1	0	0	0	0	1.0	0	0	102.6891559
60	1	1	0	0	0	0	1.0	0	0	78.8328
61	1	1	0	0	0	0	1.0	0	0	39.34
62	0.2	1	0	0	0	0	1.0	0	0	95.175
63	1	1	0	0	0	0	1.0	0	0	117.4845
64	0.428571429	1	0	0	0	0	1.0	0	0	82.889
65	0.8	1	0	0	0	0	1.0	0	0	84.33007353
66	0.125	1	0	0	0	0	1.0	0	0	89.38833333
67	-1	0	0	0	0	0	1.0	0	0	75.55897188
68	0.25	1	0	0	0	0	1.0	0	0	91.17702841
69	0.4	1	0	0	0	0	1.0	0	0	87.72147059
70	0.33333333	1	0	0	0	0	1.0	0	0	106.4550485
71	0.55555556	1	0	0	0	0	1.0	0	0	87.42844158
72	1	1	0	0	0	0	1.0	0	0	85.58888831
73	1	1	0	0	0	0	1.0	0	0	85.48718077
74	0.88888889	1	0	0	0	0	1.0	0	0	80.73190762
75	0.5	1	0	0	0	0	1.0	0	0	86.55054545
76	0.5	1	0	0	0	0	1.0	0	0	79.80180183
77	0.375	1	0	0	0	0	1.0	0	0	82.45291667
78	1	1	0	0	0	0	1.0	0	0	70.21913852
79	1	1	0	0	0	0	1.0	0	0	88.85037028
80	0.025	1	0	0	0	0	1.0	0	0	84.25027275
81	0.33333333	1	0	0	0	0	1.0	0	0	75.66153249
82	0.875	1	0	0	0	0	1.0	0	0	86.1802
83	0.2	1	0	0	0	0	1.0	0	0	54.0468005
84	0	1	0	0	0	0	1.0	0	0	73.188
85	0.5	1	0	0	0	0	1.0	0	0	110.88828283
86	0.428571429	1	0	0	0	0	1.0	0	0	98.94732305
87	0.88888887	1	0	0	0	0	1.0	0	0	53.96431174
88	-1	0	0	0	0	0	1.0	0	0	102.3818854
89	0	1	0	0	0	0	1.0	0	0	106.3808888
90	0	1	0	0	0	0	1.0	0	0	87.29007837
91	0.714285714	1	0	0	0	0	1.0	1	0	80.78804849
92	0	1	0	0	0	0	1.0	0	0	80.37
93	0	1	0	0	0	0	1.0	0	0	95.60111384
94	0.22222222	1	0	0	0	0	1.0	0	0	74.81800728
95	0.887142857	1	0	0	0	0	1.0	0	0	124.48848482
96	1	1	0	0	0	0	1.0	0	0	21.98085435
97	0.25	1	0	0	0	0	1.0	0	0	78.1088311
98	0.50142857	1	0	0	0	0	1.0	0	0	74.42875
99	-1	0	0	0	0	0	1.0	0	0	95.62722222
100	1	0	0	0	0	0	1.0	0	0	85.47432815
101	0.16666667	1	0	0	0	0	1.0	0	0	86.30714329
102	0.5	1	0	0	0	0	1.0	0	0	89.77034162
103	0.88888887	1	0	0	0	0	1.0	0	0	85.6313797
104	0.25	1	0	0	0	0	1.0	0	0	88.78588443
105	0.2	1	0	0	0	0	1.0	0	0	82.25568333
106	0.5	1	0	0	0	0	1.0	0	0	115.4827724
107	1	1	0	0	0	0	1.0	0	0	108.728047
108	-1	0	0	0	0	0	1.0	0	0	77.17288806
109	0.5	1	0	0	0	0	1.0	0	0	106.5632727
110	0.50142857	1	0	0	0	0	1.0	0	0	14.48842883
111	1	1	0	0	0	0	1.0	0	0	87.38546566
112	0.11111111	1	0	0	0	0	1.0	0	0	82.50742841
113	0	1	0	0	0	0	1.0	1	0	81.18481771
114	0	1	0	0	0	0	1.0	0	0	85.57478252
115	0.33333333	1	0	0	0	0	1.0	1	0	85.57419118
116	0	1	0	0	0	0	1.0	0	0	101.8478944
117	1	1	0	0	0	0	1.0	0	0	80.3074789
118	0.887142857	1	0	0	0	0	1.0	0	0	80.18892308
119	0.30782608	1	0	0	0	0	1.0	0	0	58.594
120	0.33333333	1	0	0	0	0	1.0	0	0	84.65858285
121	0.303030304	1	0	0	0	0	1.0	0	0	126.3885703
122	1	1	0	0	0	0	1.0	0	0	105.412815
123	-1	0	0	0	0	0	1.0	0	0	117.8875
124	1	1	0	0	0	0	1.0	2	0	82.18070837
125	0.375	1	0	0	0	0	1.0	0	0	97.81888857
126	0.846153846	1	0	0	0	0	1.0	0	0	87.62288882
127	0.375	1	0	0	0	0	1.0	0	0	113.3810511
128	0.125	1	0	0	0	0	1.0	0	0	78.8883811
129	0	1	0	0	0	0	1.0	2	0	86.18425
130	0.1	1	0	0	0	0	1.0	0	0	102.6882108
131	0.887142857	1	0	0	0	0	1.0	0	0	110.0120588
132	0.714285714	1	0	0	0	0	1.0	0	0	88.4170238
133	0.88888887	1	0	0	0	0	1.0	0	0	71.00868838
134	-1	0	0	0	0	0	1.0	0	0	116.426
135	0.4	1	0	0	0	0	1.0	0	0	87.79433877
136	-1	0	0	0	0	0	1.0	0	0	99.632
137	1	0	0	0	0	0	1.0	0	0	94.2203814
138	0.5	1	0	0	0	0	1.0	0	0	14.18633333
139	0.25	1	0	0	0	0	1.0	0	0	18.6968371
140	0.8	1	0	0	0	0	1.0	0	0	85.23891884
141	0.750768231	1	0	0	0	0	1.0	0	0	81.18481771