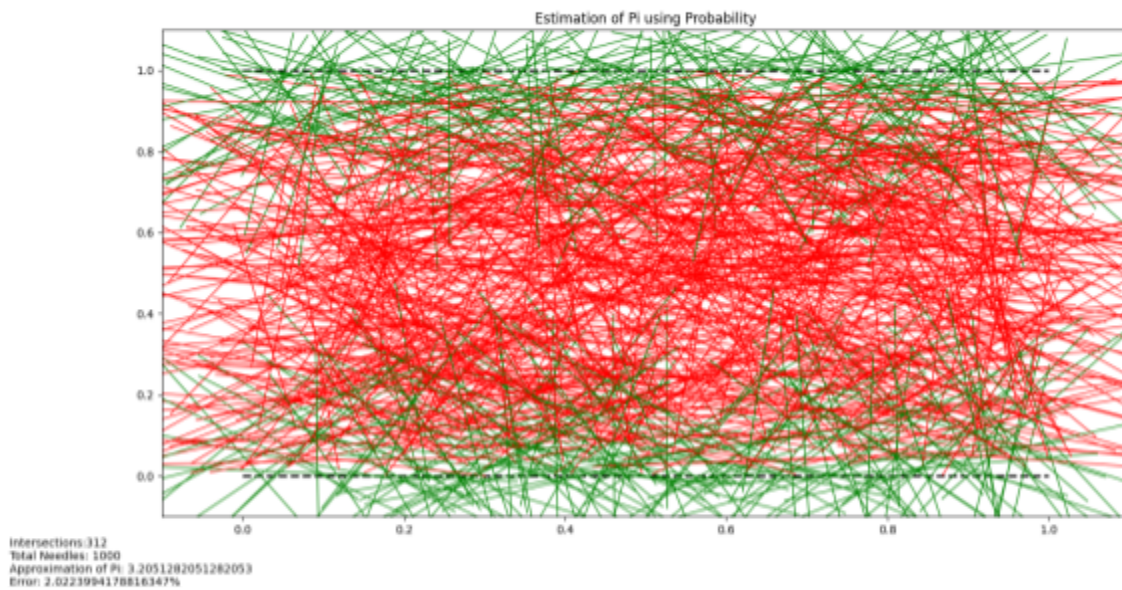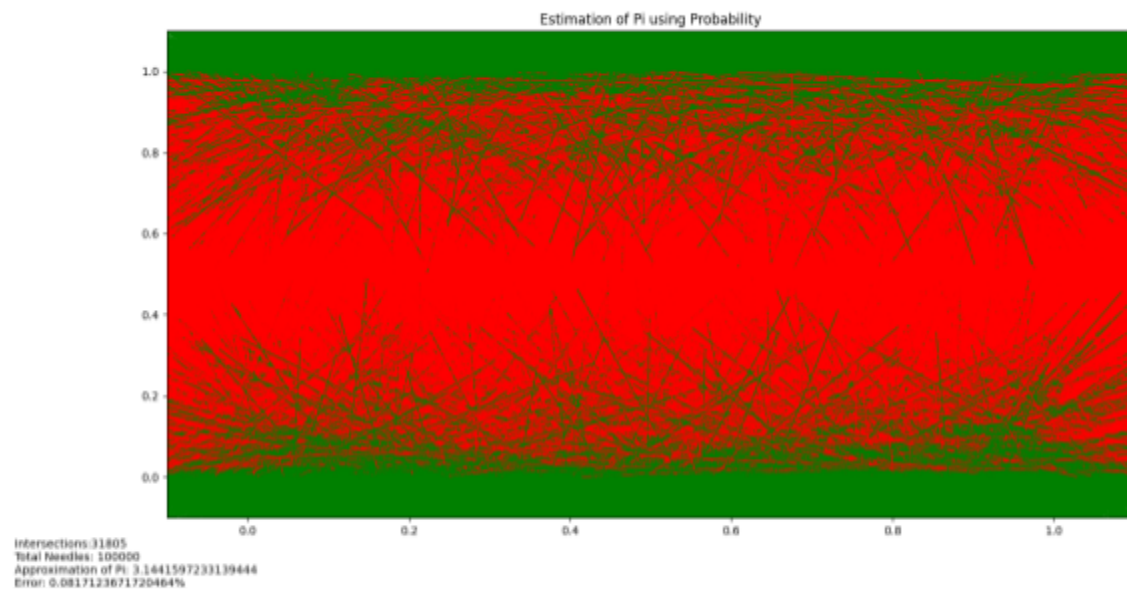**Figure 1:** Image output of Buffon's needle experiment, when `NUMBER_OF_NEEDLES = 10`

Figure 2: Image output of Buffon's needle experiment, when `NUMBER_OF_NEEDLES = 1000`

Estimation of Pi using Probability

Intersections:31805
Total Needles: 100000
Approximation of Pi: 3.14415972331139444
Error: 0.0817123671720464%

Figure 3: Image output of Buffon's needle experiment, when `NUMBER OF NEEDLES = 100000`

Raw data for Buffon's Needle Experiment

(Data points highlighted in red are considered as outliers and are excluded from analysis.)

Needles tossed	Intersections	Approximation for π	Error
10	7	1.428571428571420000	0.545271591166013000
100	26	3.846153846153840000	0.224268793014579000
500	160	3.125000000000000000	0.005281605675654110
1000	312	3.205128205128200000	0.020223994178816300
5000	1524	3.280839895013120000	0.044323773568867100
10000	3130	3.194888178913730000	0.016964492599970300
15000	4744	3.161888701517700000	0.006460432705914830
20000	6337	3.156067539845350000	0.004607499396530450
25000	7838	3.189589180913490000	0.015277769149625700
30000	9536	3.145973154362410000	0.001394356702361690
35000	11239	3.114156063706730000	0.008733337802947450
40000	12606	3.173092178327780000	0.010026610134192200
45000	14371	3.131306102567670000	0.003274310885075390
50000	15877	3.149209548403350000	0.002424532921177400
55000	17583	3.128021384291640000	0.004319869185662920
60000	19036	3.151922672830420000	0.003288147248762340
65000	20666	3.145262750411300000	0.001168228101538470
70000	22318	3.136481763598880000	0.001626846811302600
75000	23928	3.134403209628880000	0.002288471088920910
80000	25489	3.138608811644230000	0.000949786390079894
85000	27246	3.119723996182960000	0.006961009850172190
90000	28574	3.149716525512700000	0.002585908747153370
95000	30182	3.147571400172280000	0.001903094144195770
100000	31805	3.144159723313940000	0.000817123671720464