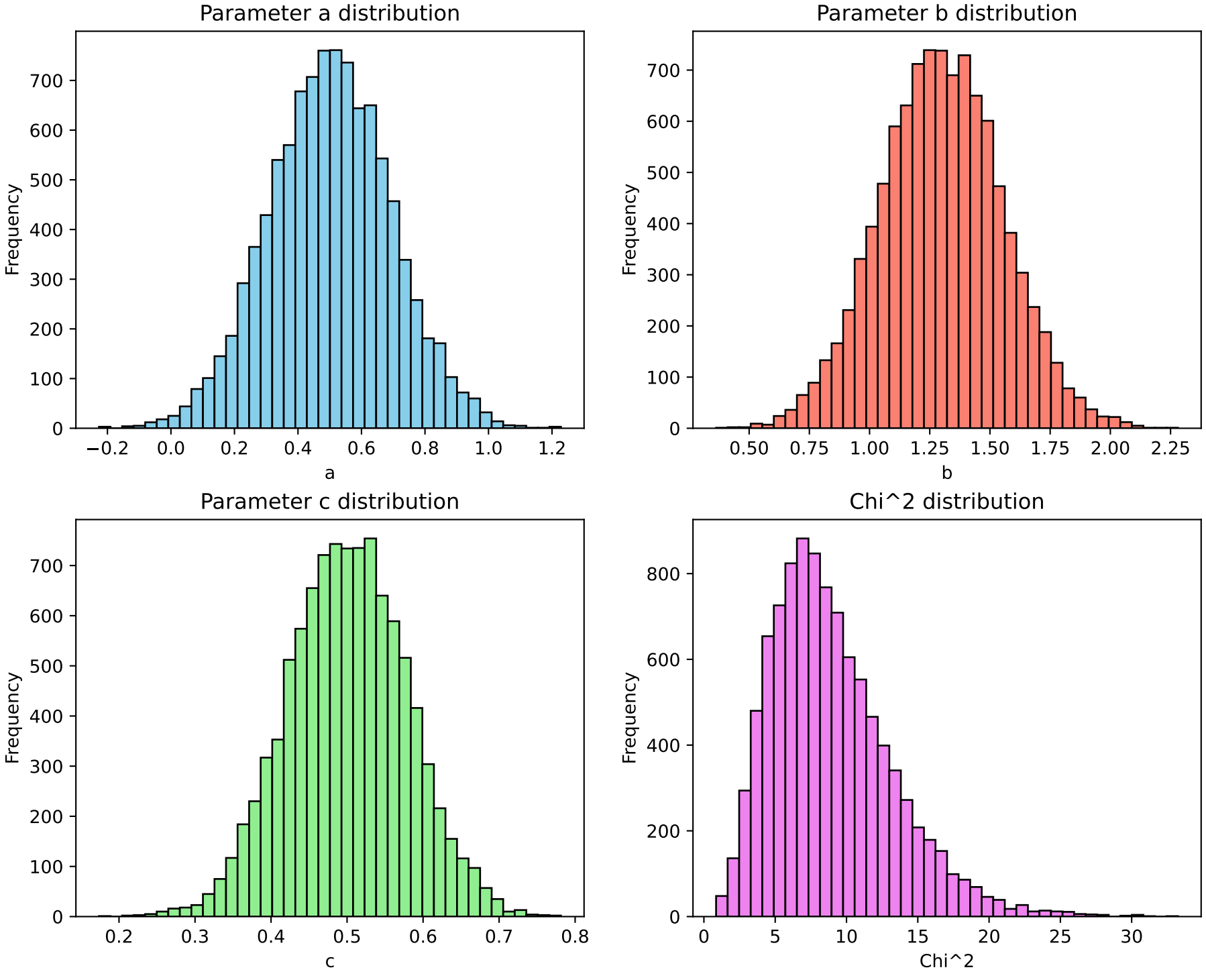
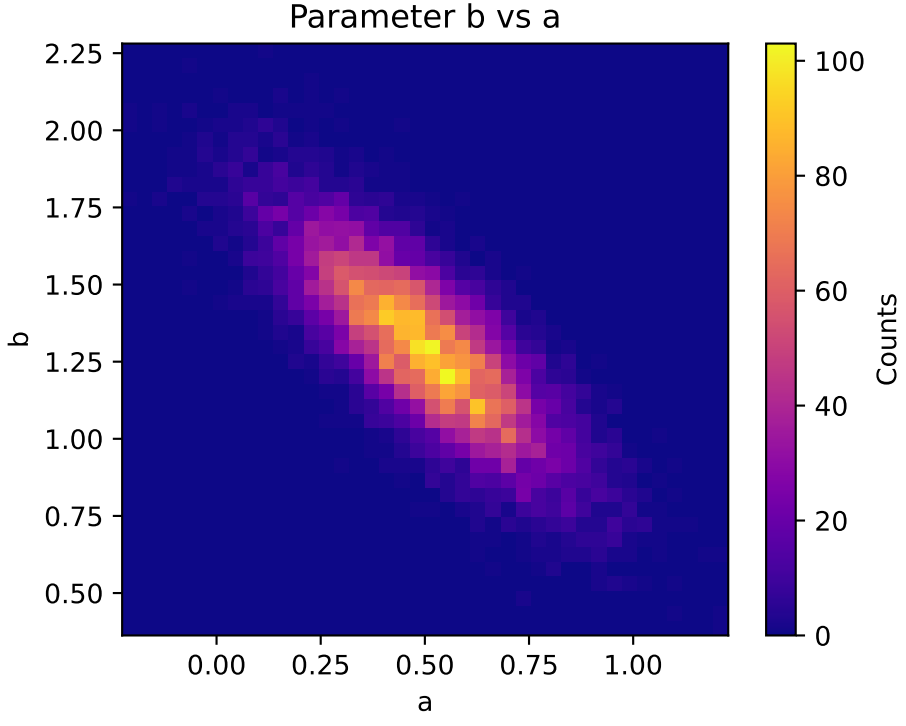
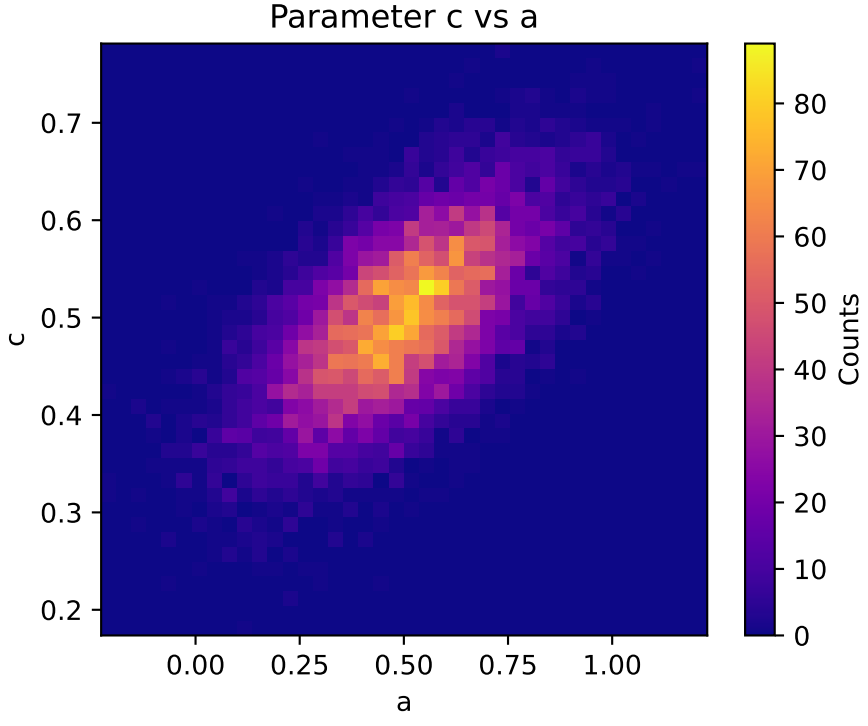
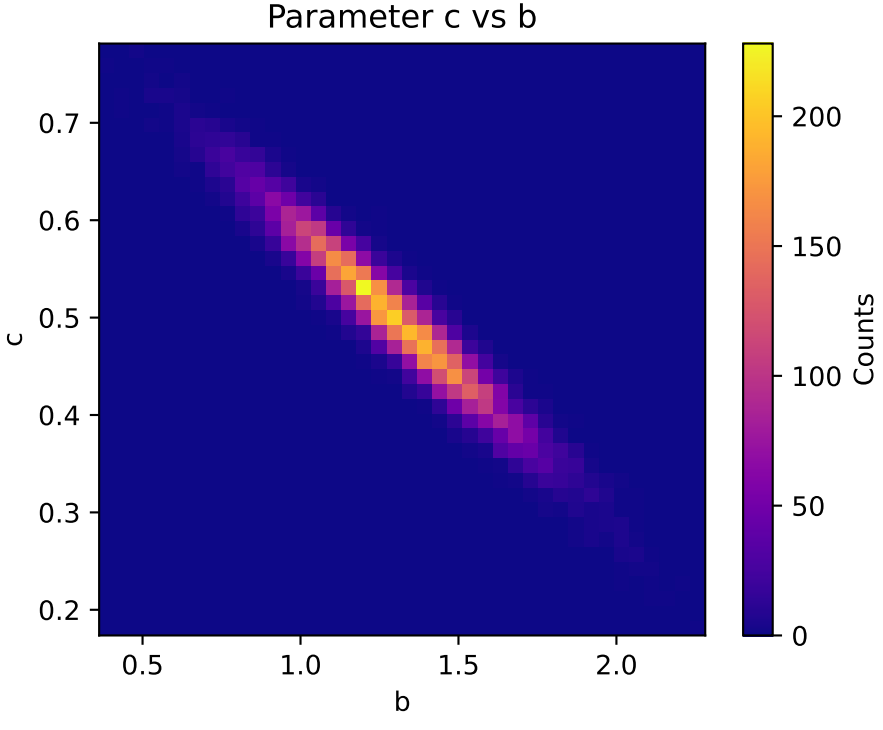
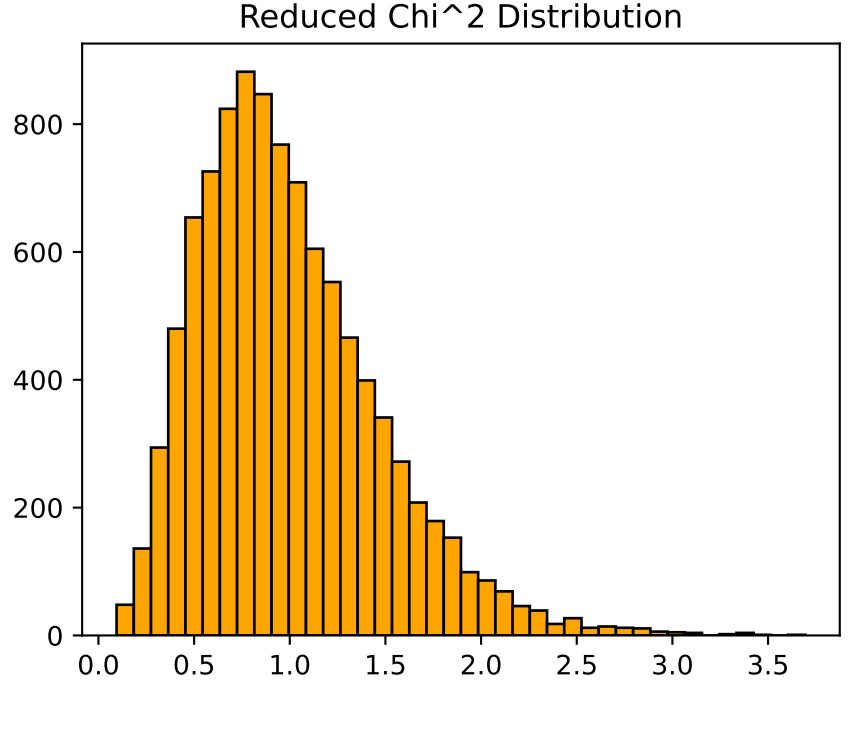

Parameter a distribution
Frequency
a
Parameter b distribution
Frequency
b
Parameter c distribution
Frequency
c
Chi^2 distribution
Frequency
Chi^2


Parameter b vs a
b
a
Counts
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.00
0.25
0.50
0.75
1.00
100
80
60
40
20
0


Parameter c vs a
c
a
Counts
0.7
0.6
0.5
0.4
0.3
0.2
0.00
0.25
0.50
0.75
1.00
80
70
60
50
40
30
20
10
0


Parameter c vs b
c
b
Counts
0.7
0.6
0.5
0.4
0.3
0.2
0.5
1.0
1.5
2.0
200
150
100
50
0


Reduced Chi^2 Distribution
800
600
400
200
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5

Discussion and Observations

1. The parameters fluctuate around the true value due to the random noise but as we add more points(nexperiments) the fluctuation becomes smaller. Additionally, as uncertainty increases then the fluctuation increases as well.

2. We expect a Chi^2 to be the same as dof and the reduced Chi^2 to be around 1. From the calculations we can see that the mean does in fact come close to dof and the reduced Chi^2 to 1. We can also see that as more data points are added and uncertainties reduced then the stdev decreases. Having a Chi^2 reduced to 1 signifies that the fit is good and the uncertainties are accurate.