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1 #Python-Script for estimating the pi value using Monte Carlo Method.
2
3 # importing the random module
4 import random
5
6 #More the generated points more accurate the value of pi
7 Total_points = eval(input('Enter the total points:'))
8 circle_points = 0
9 square_points = 0
10 circle_not_points = 0
11
12 # Total Random numbers generated points
13 for i in range(Total_points):
14     # Randomly generated x and y values from a uniform distribution
15     # Range of x and y values is -1 to 1
16     rand_x= random.uniform(-1, 1)
17     rand_y= random.uniform(-1, 1)
18     # Distance between (x, y) from the origin
19     origin_dist= rand_x**2 + rand_y**2
20     # Checking if (x, y) lies inside the circle
21     if (origin_dist<= 1):
22         circle_points+= 1
23     else:
24         circle_not_points+= 1
25 square_points+= 1
26 # Estimating value of pi, pi= 4*(no. of points generated inside the
27 #circle)/ (no. of points generated inside the square)
28 pi = 4* circle_points/ square_points
29
30 # printing the value of points inside the circle (circle_points)
31 print('circle_points:', circle_points)
32
33 # points not inside the circle (circle_not_points)
34 print('circle_not_points:', circle_not_points)
35
36 # points inside the square (square_points)
37 print('square_points:', square_points)
38
39 # printing the value of pi
40 print('Final Estimation of pi:', pi)
```