```
import numpy as np
Ndim= 2
Npoints= 100000
Points = np.random.rand(Npoints,Ndim)
print("Points")
print(Points)
dfo= np.zeros((Npoints, 1))
print("dfo")
print(dfo)
Outside_points= 0
for i in range(Npoints) :
    for j in range(Ndim) :
        dfo[i] += Points[i,j]**2
        dfo[i] =np.sqrt(dfo[i])
    if dfo[i] > 1:
        Outside_points+= 1
print("After FOR LOOP")
print("Points")
print(Points)
print("dfo")
print(dfo)
print("Outside_points ",Outside_points)
print("Npoints ",Npoints)
print("Fraction of points outside is" , Outside_points/Npoints)
```

```
Points
[[0.8687635  0.60828254]
 [0.69504181 0.26283142]
 [0.23034624 0.00962124]
 ...
 [0.63709971 0.79605674]
 [0.64672927 0.63708202]
 [0.07741694 0.62612368]]
dfo
[[0.]
 [0.]
 [0.]
 ...
 [0.]
 [0.]
 [0.]]
After FOR LOOP
Points
[[0.8687635  0.60828254]
 [0.69504181 0.26283142]
 [0.23034624 0.00962124]
 ...
 [0.63709971 0.79605674]
 [0.64672927 0.63708202]
 [0.07741694 0.62612368]]
dfo
[[1.11300096]
 [0.87414082]
 [0.48004043]
 ...
 [1.12730033]
 [1.02596431]
 [0.68516261]]
Outside_points  33148
Npoints  100000
Fraction of points outside is 0.33148
```

✓ 1s completed at 5:03 PM