Farhad Ramezanghorbani

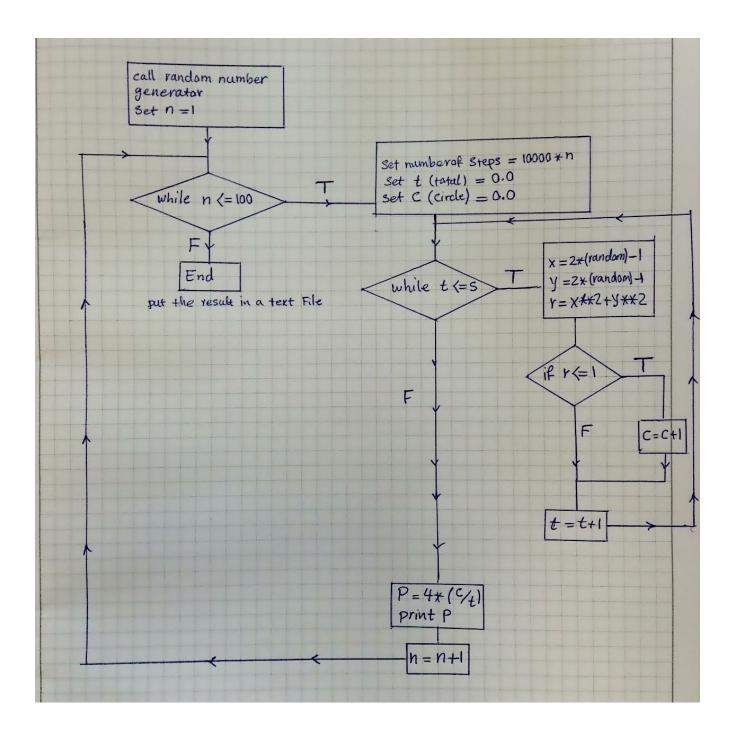
Pseudo Code:

```
import random function
set step(s)
               to 1000000
set total(t)
               to 0
set circle(c)
               to 0
while total number of points is less than number of step
       set x coordinate of point to a random number between -1 and 1
       set y coordinate of point to a random number between -1 and 1
       set r (length of the point vector) to (x square + y square)
       if r is less than 1
               add one to c (circle)
       add one to t (total)
set p number to division of # of points in circle by # of point in total multiplied by 4
print p number
```

Real Code:

```
# Monte Carlo Integration
# Calculating pi number
# Farhad Ramezanghorbani
import random
                                                   # Call random function
n=1
result=open("result.txt","w")
                                                   # Open a txt file for writing the result
while (n<=100):
       s=10000*n
                                                   # Number of steps for each entry of n
       t = 0.0
       c = 0.0
       while (t \le s):
              x=2*(random.random())-1
                                                   # Random number for x coordinate of point
              y=2*(random.random())-1
                                                   # Random number for y coordinate of point
              r=(float(x^**2)+float(y^**2))
              if (r<=1):
                                                   # Check if that point is in the sircle
                      c+=1
              t+=1
                                                   # Anyway it will add 1 to total number of points
                                                   # Calculate pi number
       p=4*(c/t)
       output=str(p)+"
                                    "+str(s)+"\n" # Change the typ of result to string
       result.write(output)
                                                   # Write result in the defined file
                                                   # Show result on the screen
       print p
       n+=1
```

Flowchart:



Results:

