Monte Carlos Simulation

REQUIREMENTS:

- It requires the MS-DOS version 2.0 or greater

HEADER FILES USED:

❖ #include<graphics.h>

- ♦ initgraph(int*,int*,char*) – It initializes graphics window.
- ♦ outtextxy(int,int,char*) – It prints the given text in given co-ordinates in graphics window.
- ♦ getmaxx() – It returns the maximum abscissa.
- ♦ getmaxy() – It returns the maximum ordinate.
- ♦ cleardevice() – It erases the entire graphics screen and moves the current position to (0,0).
- ♦ closegraph() – It closes the graphics window.

CLASS and OBJECT:

Class pi:

Class object: Monto is an instance of pi class.It helps to encapsulate all the methods required for estimating pi using monte carlo method

- Private Members:

- int lx
- int ly
- int ux

- Public Members:
  - void draw(int)
  - void disprandpoints()
  - double calcpi(int)
  - void driver(int,int)

FUNCTIONS USED:

- Member functions:

Pi class:

- void draw(int):

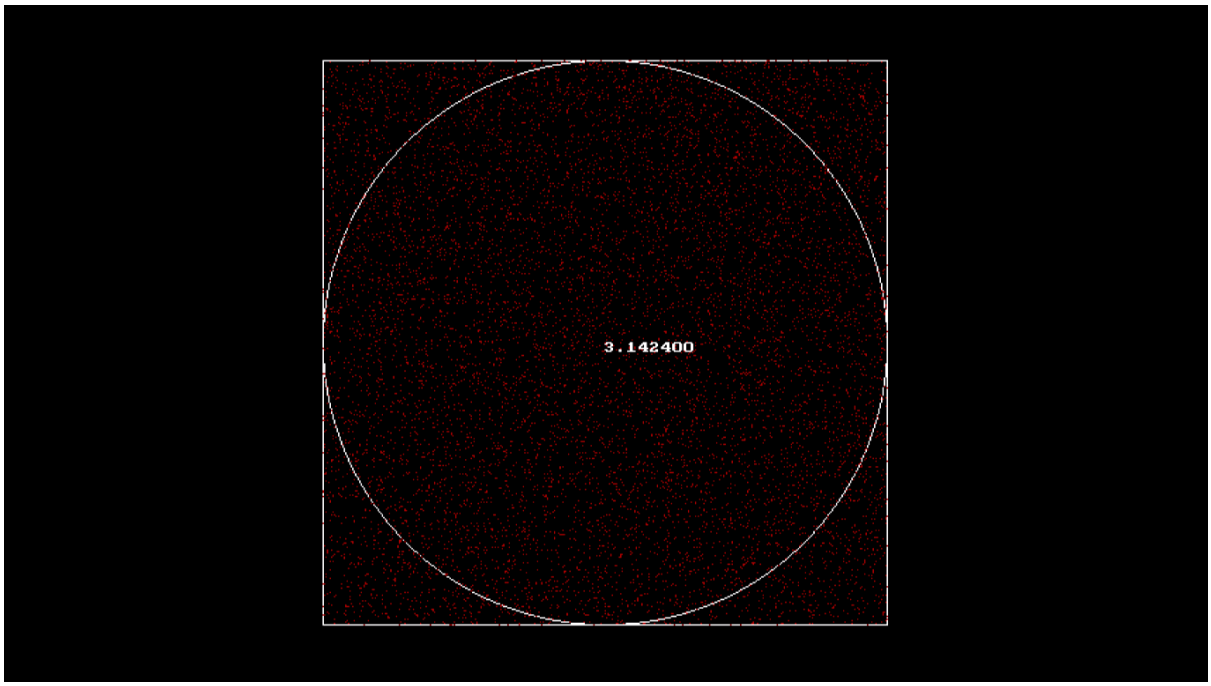
  Draws a circle in the given radius at the center of the screen.Also draws a square whose side length is determined by the radius of the circle.
- void disprandpoints():

  Displays a random point which lies inside the square.
- double calcpi(int):

  Calculates the approximate value of pi based on probability.It takes number of trials as its parameter.
- void driver(int,int):

  It integrates all the functions for calculating pi.It takes number of trials and radius as parameter.

OUTPUT:



Estimating the value of pi.

SHORTCOMINGS:

- Floating point overflow for larger values of number of trials.