

Programing Standards & Simple Data Plots

Exercise #2

Computational Physics Lab

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Part 1

Type in following programing source code for a Sierpinski Carpet. Compile it and test it to make sure it is working.

```
#include<iostream>
using namespace std;
#include <stdlib.h>

int main(){
double x=0;
double y=0;
const int m=10000;
time_t now;
now=time(NULL);
srand48(now);
struct point_s{
double x;
double y;
}V[3];
V[0].x=0;
V[0].y=0;
V[1].x=1;
V[1].y=0;
V[2].x=0.5;
V[2].y=1;
for(int i=0;i<m;i++){
double r=drand48();
int n=int(3*r);
x=(x+V[n].x)/2.0;
y=(y+V[n].y)/2.0;
cout<<x<<" "<<y<<endl;
}}
```

-OVER-

Part 1 cont.

Modify the source code by adding descriptive comments and adhering to proper formatting conventions. Follow the programming standards outlined in sections 4.10 and 4.11 of the textbook.

- Compile and run your program saving the standard output data to a file.
- Plot your data as small points using gnuplot (see notes), and save your plot as a portable bit map image (a pbm file) or jpeg image.