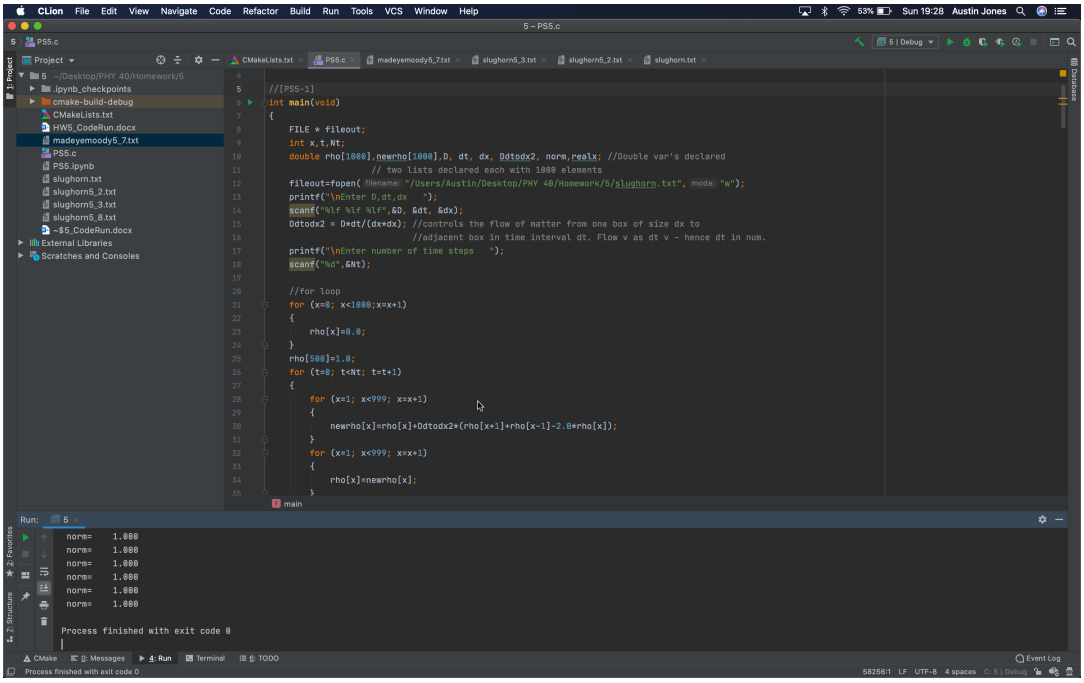
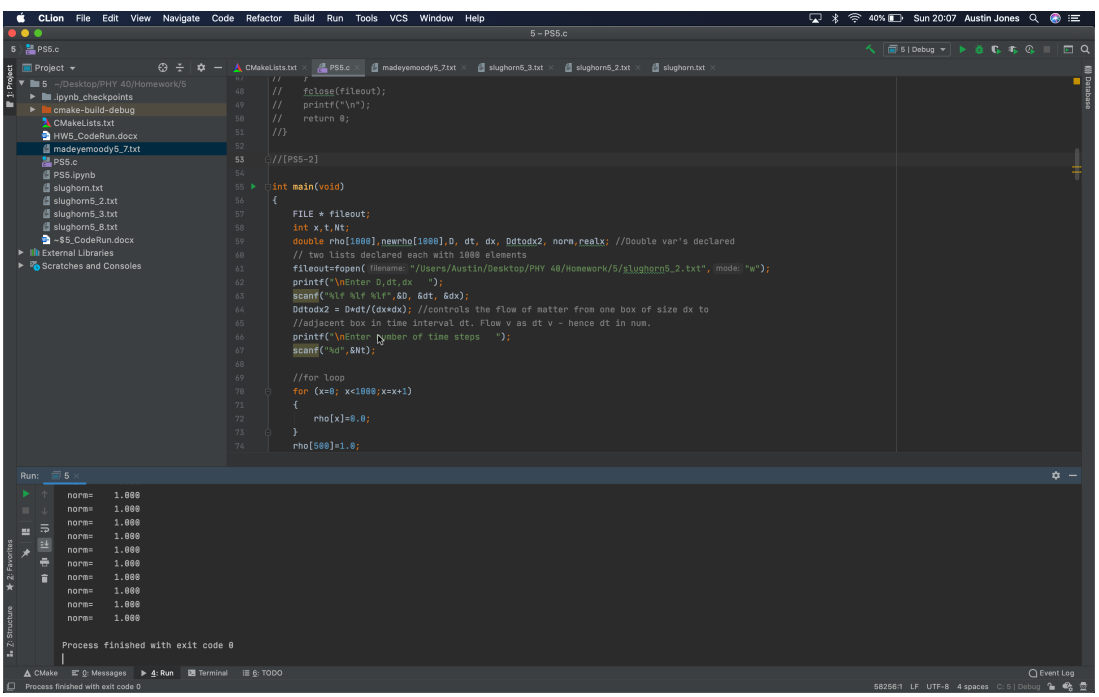
# CODE RUN FOR HW5

## [HW5-1]

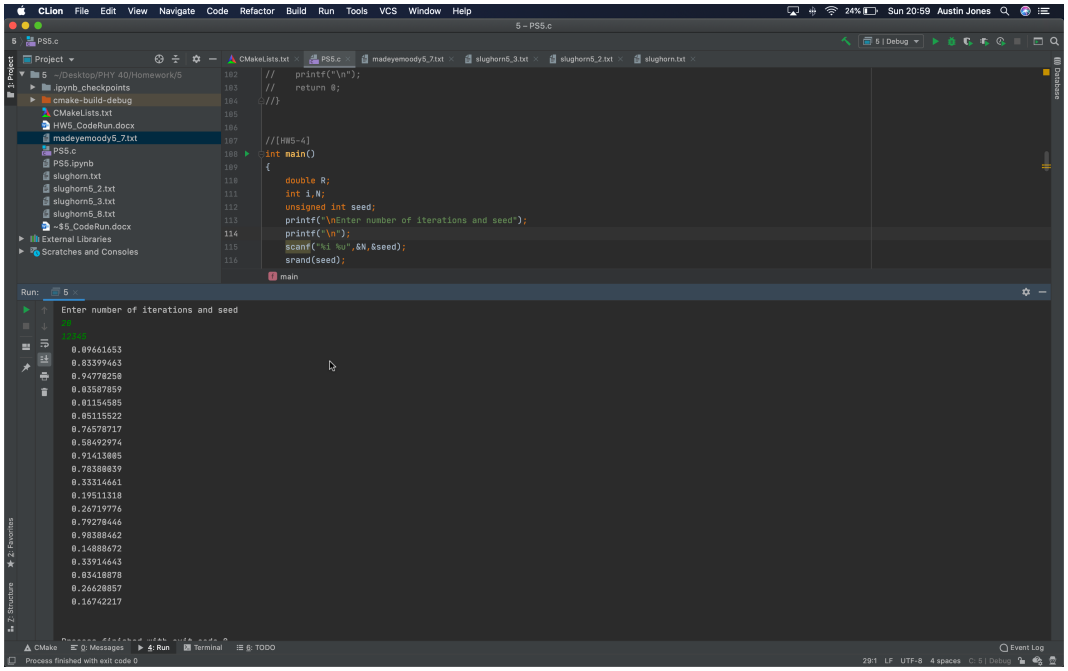



## [HW5-2]

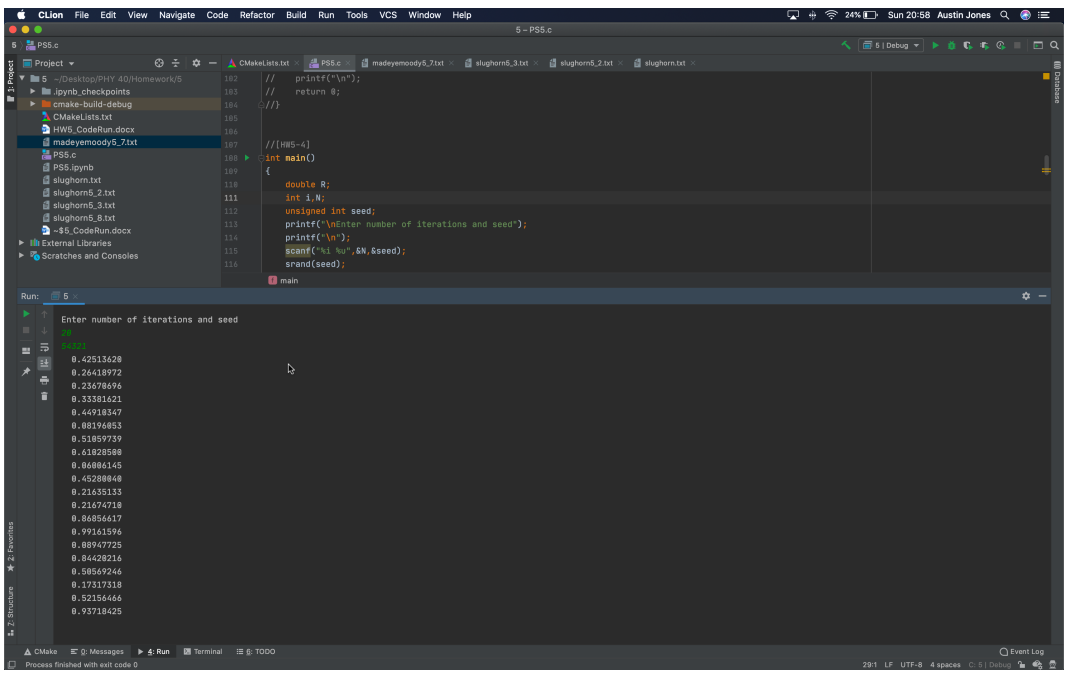


# [HW5-4]

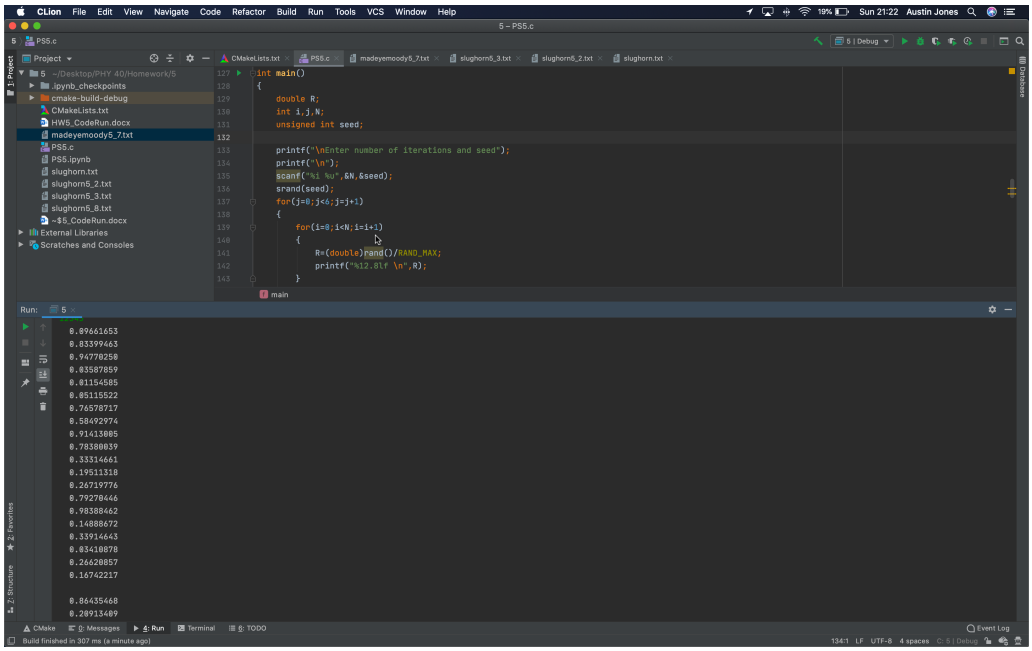
## PART 1



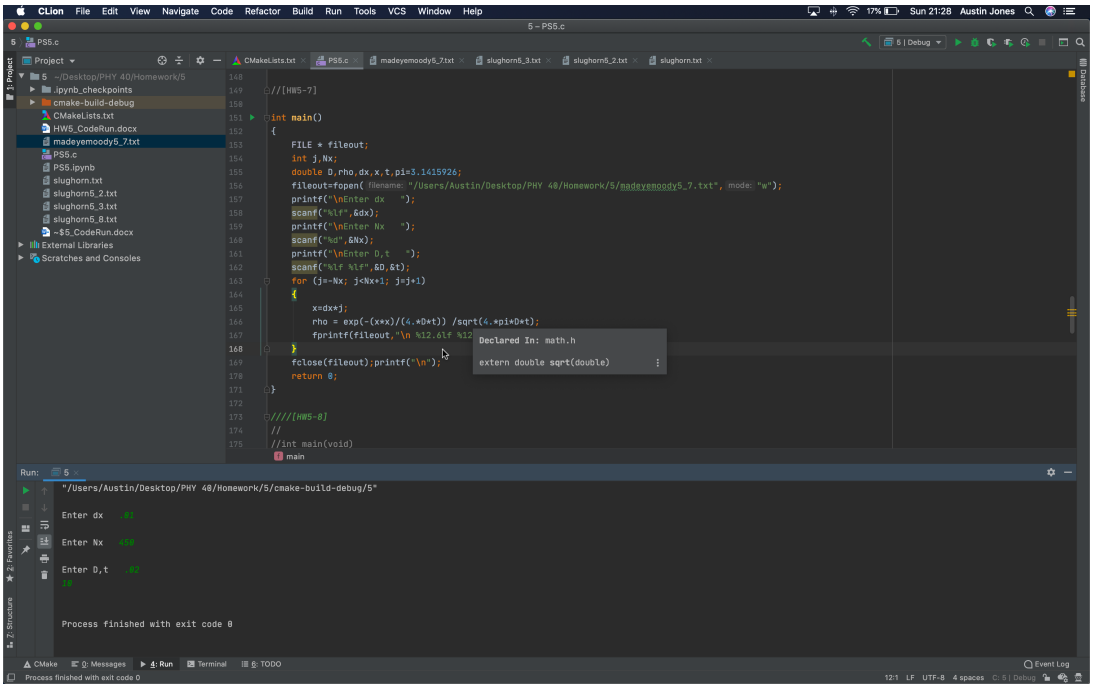

## PART 2



## [HW5-5]

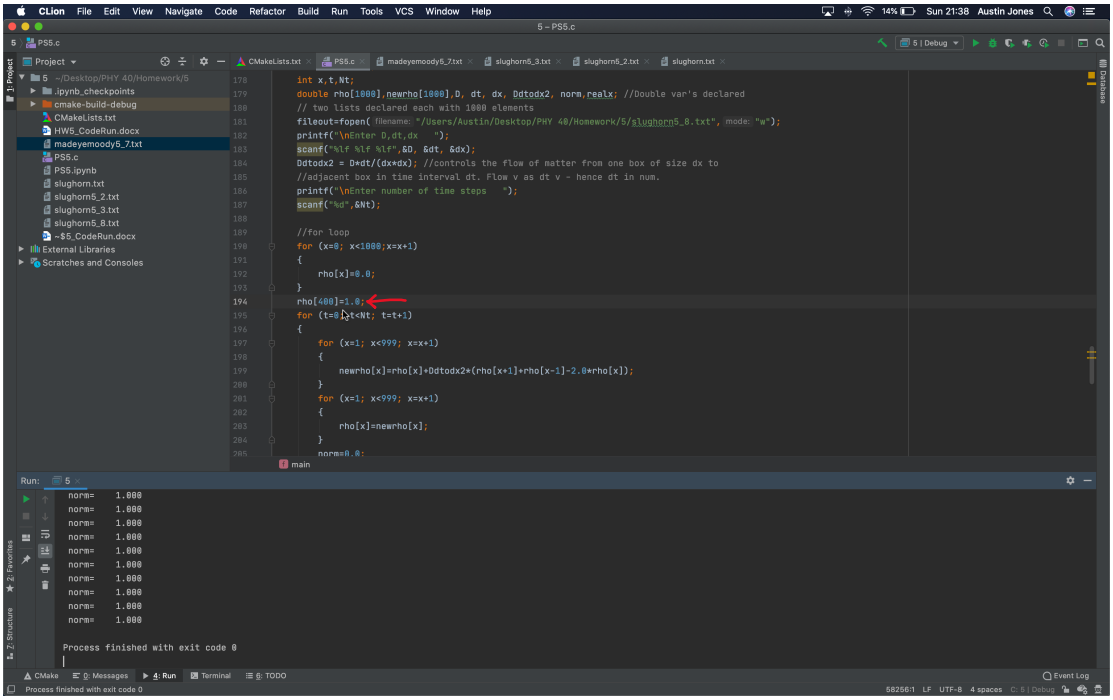

CLion File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Sun 21:22 Austin Jones
5 – PS5.c
Project
~/Desktop/PHY 40/Homework/5
.ipynb_checkpoints
cmake-build-debug
CMakeLists.txt
HW5_CodeRun.docx
madeyemoody5_7.txt
PS5.c
PS5.ipynb
slughorn.txt
slughorn5_2.txt
slughorn5_3.txt
slughorn5_8.txt
~$5_CodeRun.docx
External Libraries
Scratches and Consoles
int main()
{
double R;
int i,j,N;
unsigned int seed;
printf("\nEnter number of iterations and seed");
printf("\n");
scanf("%i %u",&N,&seed);
srand(seed);
for(j=0;j<6;j=j+1)
{
for(i=0;i<N;i=i+1)
{
R=(double)rand()/RAND_MAX;
printf("%12.8lf \n",R);
}
main
Run: 5
0.89661653
0.83399463
0.94770250
0.83587859
0.81154585
0.85115522
0.76578717
0.58492974
0.91413085
0.78380039
0.33314661
0.19511318
0.26719776
0.79278446
0.98388462
0.14888672
0.33914643
0.83410878
0.26620857
0.16742217
0.86435468
0.28913489
Build finished in 307 ms (a minute ago)

## [HW5-7]

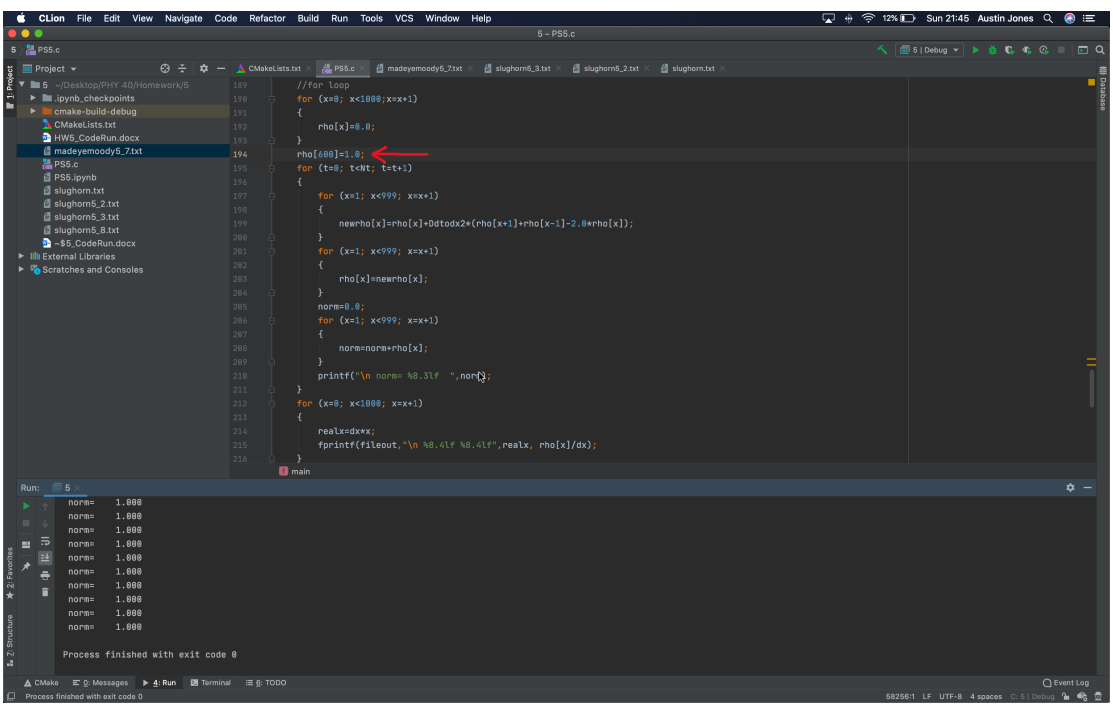

CLion File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Sun 21:28 Austin Jones
5 – PS5.c
//[HW5-7]
int main()
{
FILE * fileout;
int j,Nx;
double D,rho,dx,x,t,pi=3.1415926;
fileout=fopen( filename: "/Users/Austin/Desktop/PHY 40/Homework/5/madeyemoody5_7.txt", mode: "w");
printf("\nEnter dx ");
scanf("%lf",&dx);
printf("\nEnter Nx ");
scanf("%d",&Nx);
printf("\nEnter D,t ");
scanf("%lf %lf",&D,&t);
for (j=-Nx; j<Nx+1; j=j+1)
{
x=dx*j;
rho = exp(-(x*x)/(4.*D*t)) /sqrt(4.*pi*D*t);
fprintf(fileout,"\n %12.6lf %12
}
fclose(fileout);printf("\n");
return 0;
}
////[HW5-8]
//
//int main(void)
Declared In: math.h
extern double sqrt(double)
Run: 5
"/Users/Austin/Desktop/PHY 40/Homework/5/cmake-build-debug/5"
Enter dx .01
Enter Nx 450
Enter D,t .02
10
Process finished with exit code 0

## [HW5-8]

### RHO[400]

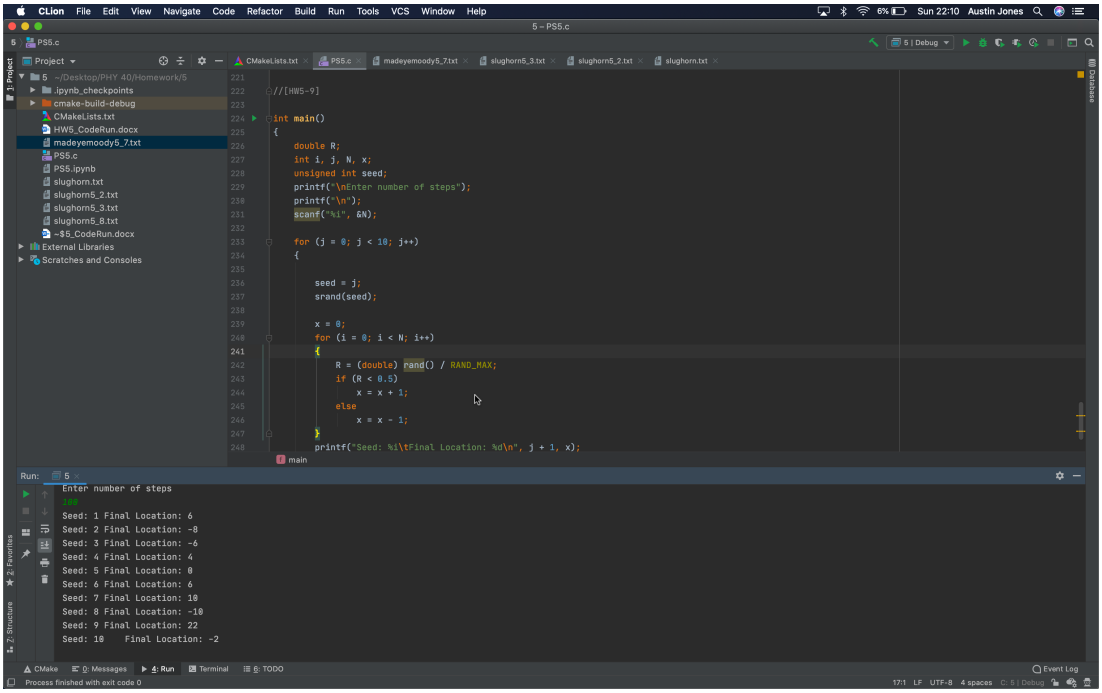



### RHO[600]

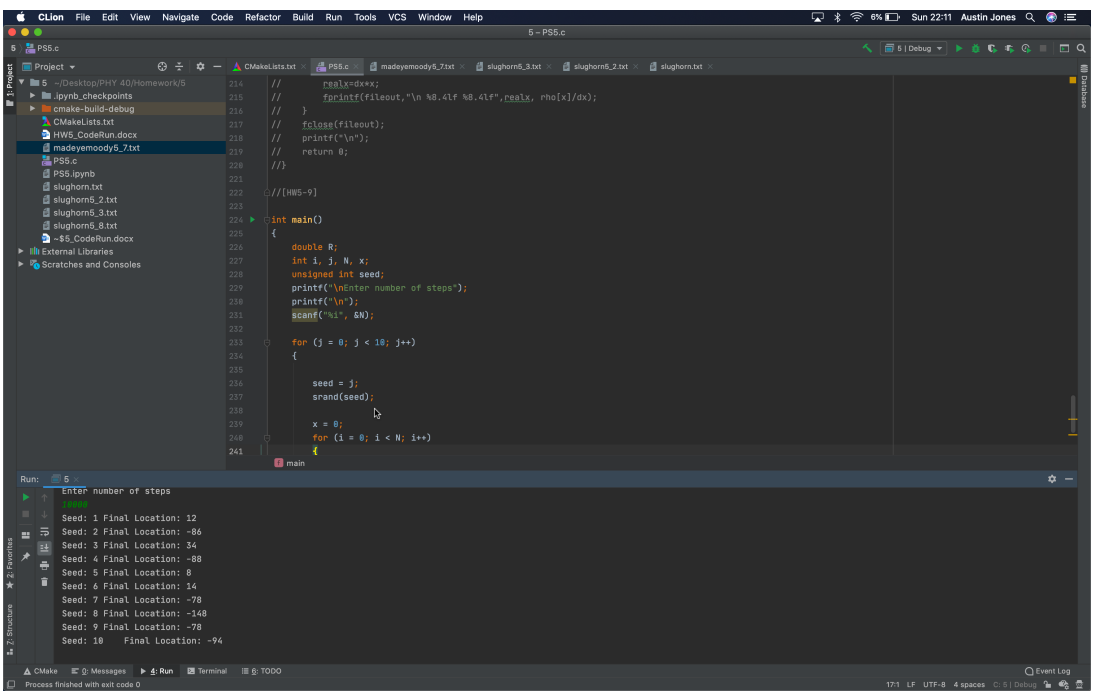


## [HW5-9]

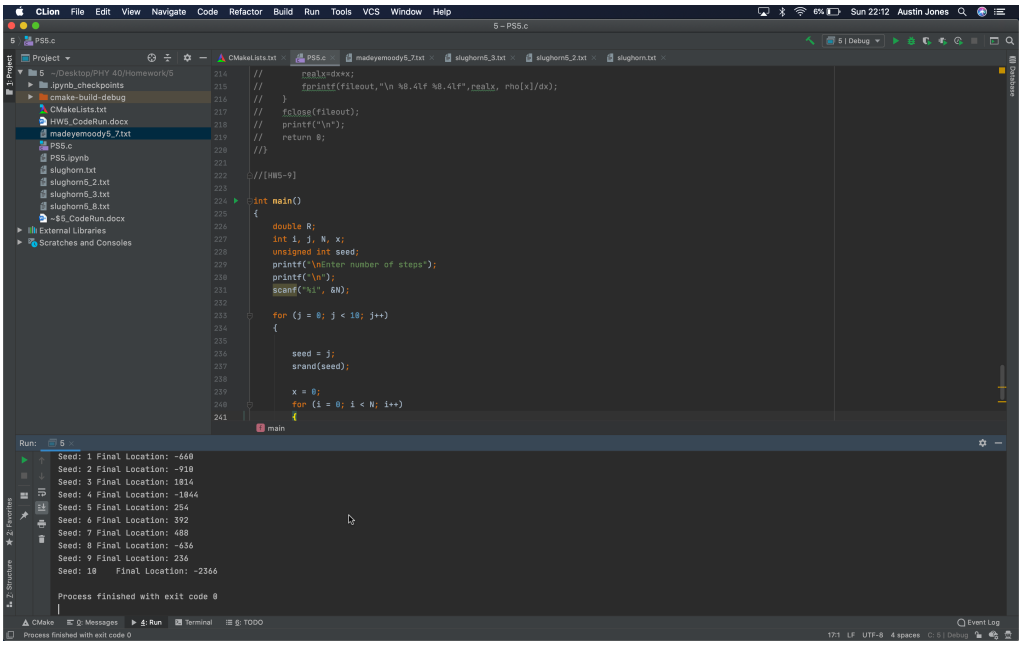
### N=100




### N=10000



**N = 1000000**


CLion File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Sun 22:12 Austin Jones
5 – PS5.c
Project
5 ~/Desktop/PHY 40/Homework/5
.ipynb_checkpoints
cmake-build-debug
CMakeLists.txt
HW5_CodeRun.docx
madeyemoody5_7.txt
PS5.c
PS5.ipynb
slughorn.txt
slughorn5_2.txt
slughorn5_3.txt
slughorn5_8.txt
~$5_CodeRun.docx
External Libraries
Scratches and Consoles
//        realx=dx*x;
//        fprintf(fileout,"\n %8.4lf %8.4lf",realx, rho[x]/dx);
//    }
//    fclose(fileout);
//    printf("\n");
//    return 0;
//}
//[HW5-9]
int main()
{
double R;
int i, j, N, x;
unsigned int seed;
printf("\nEnter number of steps");
printf("\n");
scanf("%i", &N);
for (j = 0; j < 10; j++)
{
seed = j;
srand(seed);
x = 0;
for (i = 0; i < N; i++)
{
Seed: 1 Final Location: -660
Seed: 2 Final Location: -910
Seed: 3 Final Location: 1814
Seed: 4 Final Location: -1044
Seed: 5 Final Location: 254
Seed: 6 Final Location: 392
Seed: 7 Final Location: 488
Seed: 8 Final Location: -636
Seed: 9 Final Location: 236
Seed: 10 Final Location: -2366
Process finished with exit code 0