clear all

clc

mandelbrot=zeros(300,200); %300x200 matrix

x0=-2; %range for real

x1=1;

y0=-1; %range of imaginary

y1=1;

real\_component = [-2:0.01:1]; %scale

imaginary\_component = [-1:0.01:1];

z = 0;

zs = 0;

for Real = 1:length(real\_component)

for Imag = 1:length(imaginary\_component)

zs=[];

z=0;

c = real\_component(Real) + 1i \* imaginary\_component(Imag);

for n = 1:100

z = z.^2 + c; %equation

zs(n)= z;

end

if isempty(find(abs(zs)>2)) % if not going to infinity,

mandelbrot(Real,Imag)=1; % assign 1 to mandelbrot matrix

end

end

end

map = [1,1,1; 0 0 0]; %colormap

colormap(map) % change the colormap

plot(map, 'g.','MarkerFaceColor','g','MarkerSize',0.001)

image([-2 1],[-1 1],mandelbrot'\*2)

axis square % square axis

title('My Mandelbrot Set '); % title for diagram

A screenshot of a cell phone

Description automatically generated