clear

%matrix

allmaxnet = zeros(10, 50);

% 1-10 runs

for run = 1:10

%Set x to zero and cells to 100

x = 0;

cells = 100;

% 5 to 250 in steps of 5 edges

for edges = 5:5:250

%Increment x by adding 1

x = x+1;

%Createm

m = zeros(cells, cells);

%WhileLoop m<edges

while sum(sum(m)) < edges;

%Set i

%i = ceil(rand\*(cells-1));

i = floor((100-1).\*rand(1) +1);

%Set j

%j = i+ceil(rand\*(cells-1));

j = floor((100-(i+1)).\*rand(1) +(i+1));

%Set value

m(i,j) = 1;

end

%For loop n

for n = 1:cells

%Set cellacts

cellacts = zeros(1, cells);

%Set nth value

cellacts(1,n) = 1;

%Loop

for t = 1: cells

cellacts = cellacts + (cellacts)\*m;

end

%Find number of non zero elements

netsize(n) = nnz(cellacts);

end

%Get max value

maxnet(x) = max(netsize);

end

%Update current runth row

allmaxnet(run,:) = maxnet;

end

%Create x

x = 0.05:0.05:2.5;

%Find mean

meanMaxNet = mean(allmaxnet);

%Plot

plot(x, meanMaxNet);

title('Phase Transitions with Erdös and Renyi (Assignment #9)');

