```matlab
% Coleman Lyski
%
% November 5, 2016
%
% Lecture 11
clear;home;close all;commandwindow
popColorMap=[0 1 0;1 0 0;0 0 1];
P=[0 1 0 0 1 0 1 1 0 1 0 0 0 0 1 0 0 0 0 1];
figure(1)
imagesc(P);
title('\bfBeginning of Day 1','FontSize',12)
colormap(popColorMap);
axis equal
axis tight
caxis([0 2])
pause(1);
n=length(P);
New_P=zeros(1,n);
NeighborsSick=zeros(1,n);
for k=1:n
    if k==1
        if P(k)==0
            NeighborsSick(k)=P(k+1);
        end
    elseif k==n
        if P(k)==0
            NeighborsSick(k)=P(k-1);
        end
    else
        if P(k)==0
            NeighborsSick(k)=P(k-1)+P(k+1);
        end
    end
    if P(k)==0 && NeighborsSick(k)>0
        New_P(k)=randi([0 1],1); %Change for Lab
    elseif P(k)==0 && NeighborsSick(k)==0
        New_P(k)=0;
    else
        New_P(k)=2;
    end
end
figure(2)
imagesc(New_P);
title('\bfEnd of Day 1','FontSize',12)
colormap(popColorMap);
axis equal
axis tight
caxis([0 2])
pause(1);
```
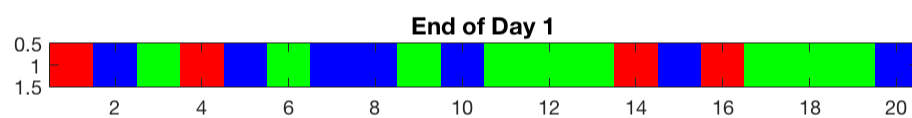
**Beginning of Day 1**



**End of Day 1**

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