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function[integrin] = initIntegrin(R, N)
% user defined function to generate random x and y coordinates and states

% for loop to account for each integrin
for i = 1:N
    dist = R * rand(); % calculates the distance that is in our domain
    ang = 360 * rand(); % calculates an angle that is relative in our domain

    % converting our angle in degrees to radians because our circular
    % domain is in radians
    rad = deg2rad(ang);

    integrin(i).x = dist * cos(rad); % calculates the x coord with the calculated
distance and angle above
    integrin(i).y = dist * sin(rad); % calculates the y coord with the calculated
distance and angle above

    integrin(i).activation_state = 0; % sets the initial activation state as false
(inactive)
    integrin(i).ligand_state = 0; % sets the initial ligand bound state as false
(unbound)
end

```