3.4 MATLAB CODE

```
% Maxima of Uniform Random Varibles

% Large Sequence
N = input('Enter N: ')
n = input('Enter n: ')
K1 = zeros(1,N);
K2 = zeros(1,N);

% Generating Uniformly distributed random numbers
for x=1:N

    u= rand(1,n);

    % Recording maximum value
    record=zeros(1,20);
    max=0;
    j=1;

    for y=1:n

        % Recording maximum value
        record(1)=1;
        if max < u(y)
            max = u(y);
            record(j)=y; j=j+1;
        end
    end

    % Values for X2 and X3
    K1(x)=record(2)-record(1);
    K2(x)=record(3)-record(2);
end

% mean(K(x))
t=1:1:40;
[a,b] = hist(K1,t)
bar(b, a/sum(a))
title('Probability Histogram for X2')
ylabel('Probability')
xlabel(' Values of X2')

figure;
[a,b] = hist(K2,t)
bar(b, a/sum(a))
title('Probability Histogram for X3')
ylabel('Probability')
xlabel(' Values of X3')
```