```matlab
function [ yn ] = polynomial_interp(x,y,xn)
n=length(x);
N=length(xn);
for i=1:N
    p = 0;
    for j = 1:n
        s = 1;
        for k = 1:n
            if j~=k
                s=s*(xn(i)-x(k))/(x(j)-x(k));
            end
        end
        p=p+s*y(j);
    end
    yn(i) = p;
end
```