```
function fx = LagrangeInterp(x,y,xk)
n = length(x); % the degree of interpolation polynomial
nk = length(xk); % the number of x-values, where interpolation is to be found
% Make sure that x and y are row vectors
if size(x,1) > 1, x = x'; end
if size(y,1) > 1, y = y'; end
if size(x,1) > 1 || size(y,1) > 1 || size(x,2) ~= size(y,2)
 error('both inputs must be equal-length vectors')
end

L = ones(n,nk);
for i = 0:n-1
for j = 0:(i-1)
 L(j+1,:) = L(j+1,:).*(xk - x(i+1))/(x(j+1)-x(i+1));
 end
for j = i+1:n-1
 L(j+1,:) = L(j+1,:).*(xk - x(i+1))/(x(j+1)-x(i+1));
 end
end
fx = y * L;
plot(x,y,'bo',xk,fx,'r');
```