```
function [U, b] = GaussElimScaledPivot(A,y)
[n,~] = size(A);
maxabs = zeros(n,2);
for i = 1:n-1
    for j = i:n
        [z,i1] = max(abs(A(j,:)));
        maxabs(j,1) = z(1);
        maxabs(j,2) = i1(1);
    end
    s = zeros(n+1-i,1);
    s = A(i:n,i)./maxabs(i:n,1);
    [m,I] = max(abs(s));
    I = I + i -1;
    if(I(1)>i)
        temp = A(i,:);
        A(i,:) = A(I(1),:);
        A(I(1),:) = temp;
        temp1 = y(i);
        y(i) = y(I(1));
        y(I(1)) = temp1;
    end
    y(i) = y(i)./A(i,maxabs(I(1),2));
    A(i,:) = A(i,:)./A(i,maxabs(I(1),2));
    for j = i+1:n
        alpha = A(j,i)./A(i,i);
        A(j,:) = A(j,:) - alpha.*A(i,:);
        y(j) = y(j) - alpha.*y(i);
    end
end
y(n) = y(n)/A(n,n);
A(n,n) = A(n,n)/A(n,n);
U = A;
b = y
end
```

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