Gauss-Seidel, Example 2

Here is a different way to code the example, using loops instead of matrix multiplication (may be better for sparse matrices?)

```matlab
function x=GaussSeidel2(A,b,x,NumIters)
    % Runs the Gauss-Seidel method for solving Ax=b, starting with x and % running a maximum of NumIters iterations.
    %
    % In this case, we run the method as a loop instead of in matrix form. We % will also only output the last iteration.
    n=length(x);
    for m=1:NumIters
        for i=1:n
            temp1=0;
            for j=1:i-1
                temp1=temp1+A(i,j)*x(j);
            end
            temp2=0;
            for j=i+1:n
                temp2=temp2+A(i,j)*x(j);
            end
            x(i)=(-1/A(i,i))*(temp1+temp2-b(i));
        end
    end
```

Here is the result of the same example:

```matlab
>> A=[3,1,-1;2,4,1;-1,2,5]; b=[4;1;1];
>> x0=[0;0;0];
>> y=GaussSeidel2(A,b,x0,7)
y =
    1.9949
    -0.9960
    0.9974
```