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function [H]=rmat(A,u,gama);
% This function computes the product of a reflector matrix with a
% rectangular matrix. The reflector is of the form  $H=Q-v*v'$  where v is a column vector.
% NOTE the product is of the form  $A*H$ , where Q the first
% column of Q is zero and the others form an identity matrix.
% A is  $(q-1)*p$  and H is  $p*q$ 
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[m,n]=size(A);nn=n+1;
v=u(2:nn)./gama;

H=-(A*v)*u';
H(1:m,2:nn)=H(1:m,2:nn)+A;
```