

```

function OutputName = Result(TestImage, m, A, matches)
% Recognizing step....
ProjectedImages = [];
Train_Number = size(matches,2);
for i = 1 : Train_Number
    temp = matches'*A(:,i); % Projection of centered images into facespace
    ProjectedImages = [ProjectedImages temp];
end
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Extracting the PCA features from test image
InputImage = imread(TestImage);
temp = InputImage(:,:,1);
[irow icol] = size(temp);
InImage = reshape(temp',irow*icol,1);
Difference = double(InImage)-m; % Centered test image
ProjectedTestImage = matches'*Difference; % Test image feature vector
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Calculating Euclidean distances
% Euclidean distances between the projected test image and the projection
% of all centered training images are calculated. Test image is
% supposed to have minimum distance with its corresponding image in the
% training database.
Euc_dist = [];
for i = 1 : Train_Number
    q = ProjectedImages(:,i);
    temp = ( norm( ProjectedTestImage - q ) )^2;
    Euc_dist = [Euc_dist temp];
end
[Euc_dist_min , Recognized_index] = min(Euc_dist);
OutputName = strcat(int2str(Recognized_index),'.jpg');

```