```
1  function Ytest = NaiveBayesclassify(Xtrain,Ytrain, Xtest)
2
3  [row col] = size(Xtrain);
4  n_class = max(Ytrain)+1;
5
6  psi_y = zeros(n_class,1);
7
8  for i=1:n_class
9      psi{i}    = zeros(col,1);
10     psi_y(i) = length( find(Ytrain==(i-1) ))/length(Ytrain);
11     indx_y{i} = find(Ytrain==(i-1));
12     n_y{i}    = length(indx_y{i});
13 end
14
15
16 for i=1:col
17     for j=1:n_class
18         result = Xtrain(indx_y{j},:);
19         psi{j}(i) = (length(find( result(:,i)==1)) + 1)/( n_y{j} + 2 );
20     end
21 end
22
23 [row col] = size(Xtest);
24 Ytest = zeros(row,1);
25 for i=1:row
26     class_score = zeros(n_class,1);
27     for j=1:n_class
28         for k=1:col
29             if Xtest(i,k)  == 1
30                 logP = log( psi{j}(k) );
31             else
32                 logP = log( 1 - psi{j}(k) );
33             end
34             class_score(j) = class_score(j) + logP;
35         end
36         class_score(j) = class_score(j) + log(psi_y(j));
37     end
38     [val, indx] = max(class_score);
39     Ytest(i) = indx -1;
40 end
41
42 end
```