Instructions on Question 3

1. The playTennis example is converted into a 14 by 5 matrix of integers (uploaded to eClass as a *.txt file):

```
2 2 1 0 0
2 2 1 1 0
0 2 1 0 1
... ...
... ...

0 2 0 0 1
1 1 1 1 0
```

   Each row corresponds to an example day. Integers are used to represent values of attributes. For example the first row

```
2 2 1 0 0
```

   represents Day 1 example of

```
Sunny Hot High Weak No
```

   Specifically

   - 0, 1, and 2 represent `Overcast, Rainy, Sunny` for the attribute `Outlook`, respectively;
   - 0, 1, and 2 represent `Cool, Mild, Hot` for `Temperature`;
   - 0 and 1 represent `Normal, High` for `Humidity`;
   - 0 and 1 represent `Weak, Strong` for `Wind`;
   - 0 and 1 represent decisions, No and Yes;

2. You need to create a MatLAB function `nbclassifier`, which takes a query array as input and returns the decision that is based on Naive Bayes. For example a command

```
>> nbclassifier([2 0 1 1])
```

   will work for the new instance

   $\langle Outlook_{Sunny}, Temperature_{Cool}, Humidity_{High}, Wind_{Strong}, PlayTennis = ? \rangle$

   It is expected that when the function is being executed, the following information needed to be displayed on screen:

   - Total number of 'No' examples (noTotal) and 'Yes' ones (yesTotal),
   - The estimated probabilities conditional on 'No' (condProbOnNo):

     Prob(Sunny |No), Prob(Cool |No), Prob(High |No), Prob(Strong |No)
   - Similarly, (condProbOnYes);
   - Final summary and conclusion.

```
yesTotal =  9
noTotal =   5
condProbOnNo =    0.6000    0.2000    0.8000    0.6000
condProbOnYes =    0.2222    0.3333    0.3333    0.3333
the prob No is: 0.020571
the prob Yes is: 0.005291
Answer: No
```