Editor - C:\Users\Ivani\Desktop\580\ass1.m

ass1.m  ✕   ass2.m  ✕   +

```matlab
1       % Given data
2       totC = 483; % Total churn records
3       totNC = 1425; % Total not churn records
4       XinC_v = 80; % Number of records with voice mail and churn
5       XinNC_v = 421; % Number of records with voice mail and not churn
6       XinC_i = 137; % Number of records with international option and churn
7       XinNC_i = 93; % Number of records with international option and not churn
8
9       % Calculate probabilities using the provided function
10      probVoiceMailInC = BayesStat(totC, totNC, XinC_v, XinNC_v);
11      probInternationalInC = BayesStat(totC, totNC, XinC_i, XinNC_i);
12
13      % Display results
14      fprintf('Probability of churn given voice mail: %.4f\n', probVoiceMailInC);
15      fprintf('Probability of churn given international option: %.4f\n', probInternationalInC);
16
17      % BayesStat function
18      function [probXinC] = BayesStat(totC, totNC, XinC, XinNC)
19          priorC = totC / (totC + totNC);
20          priorNC = 1 - priorC;
21          probXgivenC = XinC / totC;
22          probXgivenNC = XinNC / totNC;
23          evidenceC = priorC * probXgivenC;
24          evidenceNC = priorNC * probXgivenNC;
25          probXinC = evidenceC / (evidenceC + evidenceNC);
26      end
```

Command Window

New to MATLAB? See resources for Getting Started.

```
>> ass1
Probability of churn given voice mail: 0.1597
Probability of churn given international option: 0.5957
fx >>
```