Imagine you work for a bank and you want to predict whether a loan applicant will default on their loan or not based on some demographic and financial data. Here is a sample dataset containing 10 loan applicants and whether they defaulted on their loan or not:

Applicant ID	Age	Income	Education Level	Defaulted
1	25 ✓	20,000 ✓	High School	No ✓
2	35 ✓	50,000 ✓	Bachelor's	No ✓
3	45 ✓	80,000 ✓	Master's	No ✓
4	28 ✓	22,000 ✓	High School	No ✓
5	32	45,000	Bachelor's	Yes
6	46 ✓	70,000 ✓	Master's	No ✓
7	24	18,000	High School	Yes
8	38 ✓	60,000 ✓	Bachelor's	No ✓
9	32 ✓	48,000 ✓	Bachelor's	No ✓
10	29	25,000	High School	Yes

yes = 3

no = 7

Income = >=20,000 , 20,000-40,000 , 40,000-60,000 , 60,000-80,000

Age = 10-19 , 20-29 , 30-39 , 40-49

P (defaulted | age: 30-39 , income = 40,000-60,000 , Education = bachelor's)

Likelihood

P (age: 30-39 , income = 40,000-60,000 , Education = bachelor's || defaulted)

Yes   P(age= 30-39 | yes) x P (income:40,000-60,000 | yes) x P(education = bachelor's | yes)
              1/3   1/3   1/3
       = 0.037

No   P(age= 30-39 | no) x P (income:40,000-60,000 | no) x P(education = bachelor's | no)
             3/7   3/7   4/7
      = 0.105

Prior

Yes   Defaulted = $\frac{3}{10}$ = 0.3

No   Defaulted = $\frac{7}{10}$ = 0.7