Task Data Analytics Day 2

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1. Suppose a company offers three different delivery methods for their products: standard delivery, express delivery, and same-day delivery. 60% of customers choose standard delivery, 30% choose express delivery, and 10% choose same-day delivery. The delivery success rates are 95% for standard delivery, 90% for express delivery, and 85% for same-day delivery. If a customer's delivery fails, what is the probability that they chose express delivery?

   Jawab:
   Peluang fails dan memilih express delivery:
   P (E|F) = P (F|E) * P(E)/P(F) = 10% * 30%/7.5% = 40%

   P(F|E) = 10% (Peluang memilih express dan fails)
   P(E) = 30%
   Peluang express fails = 3%
   Peluang standard fails = 60*5 = 3%
   Peluang same day fails = 10*15 = 1,5%
   P (F) = Customer deliver fails = 3 + 3 +1.5 = 7.5%

2. If a medical test is 95% accurate in detecting a disease and 1% of the population has the disease. Calculate the probability of having the disease given a positive test result!

   Jawab:
   Peluang sakit positif = sakit positif / sakit = 9,5/59 = 0,161 = 16,1%
   Peluang sakit = sakit positif + sakit negative = 9,5 + 49,5 = 59 orang

   Misal:
   Terdapat 1000 orang dalam 1 populasi.
   Probability sakit = 1% = 10 orang
   Probability sehat = 99% = 990 orang
   Sakit negative = 990 * 5% = 49,5 orang
   Sakit positif = 10 * 95% = 9,5 orang