Ablian Andrei

2024-02-26

FA3 #2 AND #7

```
#2
P_A <- 0.3
P_B_given_A <- 0.75
P_notB_given_notA <- 0.95

# (a)
P_B <- P_A * P_B_given_A + (1 - P_A) * (1 - P_notB_given_notA)

# (b)
P_A_given_B <- P_A * P_B_given_A / P_B

print(paste("Probability that a 1 was received:", round(P_B, 4)))
```

```
## [1] "Probability that a 1 was received: 0.26"
```

```
print(paste("Probability that a 1 was transmitted given that a 1 was received:", round(P_A_given_B, 4)))
```

```
## [1] "Probability that a 1 was transmitted given that a 1 was received: 0.8654"
```

```
#7
programming_percentages <- c(0.10, 0.30, 0.60)
error_rates <- c(0.08, 0.05, 0.01)


overall_error <- sum(programming_percentages * error_rates)

cat("The overall percentage of error is:", round(overall_error * 100, 2), "%\n")
```

```
## The overall percentage of error is: 2.9 %
```

```
most_likely_person <- which.min(error_rates)
cat("The most likely person to have written a program with an error is:", c("Jane", "Amy", "Ava")[most_likely_per
son], "\n")
```

```
## The most likely person to have written a program with an error is: Ava
```