Assignment – Bayes

1. Accuracy = TP + TN / (TP + TN + FP + FN)

* 8 + 20 + 4 + 9 + 5 / (8 + 20 + 4 + 9 + 5 + 1 + 2 + 1) = 46/50 = 0.92

1. TPR when:

* BCC is +ve: 8/10 = 0.8
* NEV is +ve: 20/20 = 1
* MEL is +ve: 4/5 = 0.8
* SK is +ve: 9/10 = 0.9
* MISC is +ve: 5/5 = 1

AVG TPR = (0.8 +1 + 0.8 + 0.9 + 1)/5 = 0.9

1. P(MEL) = # people with MEL/ Total population = 10/50 = 0.2
2. P(NEV) =# people with NEV/ Total population = 40/50 = 0.8
3. P(BWV|NEV) = 0.1
4. P (VS| MEL) = 0.2
5. P (PN| MEL) = 0.5

P (PN, MEL) = P(MEL) \* P (PN| MEL) Bayes Theorem

P (PN, MEL) = 0.2 \* 0.5 = 0.1

1. P (PN| NEV) = 0.2

P (PN, NEV) = P(NEV) \* P (PN| NEV) Bayes Theorem

P (PN, NEV) = 0.8 \* 0.2 = 0.16

1. P (VS, y) = P (VS, MEL) + P (VS, NEV) Marginal Prob

P (VS, MEL) = P(MEL) \* P(VS|MEL) Bayes Theorem

= 0.2 \* 0.2 = 0.04

P (VS, NEV) = P(NEV) \* P(VS|NEV) Bayes Theorem

= 0.8 \*0.7 = 0.56

P (VS, y) = 0.56 +0.4 = 0.6