1)

a. Select for Further higher Education

1. Hamper privacy by using gender identity
2. What a decision tree classifier is —-- taken from google

and, Here every node represents one of the fields and the leaves actually made the prediction so, the class label is students’ math grade is above or below average.

1. In information theory, entropy is a measure of impurity or uncertainty in a set of data.

2)

1. P2 = 5/11
2. Entropy is -(6/11) \* log2(6/11) - (5/11) \* log2(5/11) = 0.994
3. Among all male students, 5 are above Average and 4 are belowAverage.

Here, p1 = 5/9 and p2 = 4/9.

And Entropy is -5/9 \* log2(5/9) - 4/9 \* log2(4/9) = 0.991

1. p(male) = 9/20
2. IG = 0.993 - (11/20 \* 0.994 + 9/20 \* 0.991) = 0.00035

3)

Diagram

Description automatically generated

4)

1. A linear discriminant function divides the feature space by a hyperplane decision surface.
2. Yes, it is.
3. Name: Linear Regression

Name of the objective function: log-likelihood

Intuition: Get the high probability