$$L(X,y) = \begin{cases} -\log P(y=1|X) & \text{if } y=1 \\ -\log P(y=0|X) & \text{if } y=0 \end{cases}$$

Solution: $$L(X,y) = \begin{cases} W_{positive} \times -\log P(y=1|X) & \text{if } y=1 \\ W_{negative} \times -\log P(y=0|X) & \text{if } y=0 \end{cases}$$

Examples	Predicted Probabilities	Loss
P_1: Normal	0.5	$2/8 \times 0.3 = 1.078$
P_2: Normal	0.5	$2/8 \times 0.3 = 0.075$
P_3: Normal	0.5	$2/8 \times 0.3 = 1.075$
P_4: Mass	0.5	$6/8 \times 0.3 = 0.225$
P_5: Normal	0.5	$2/8 \times 0.3 = 0.075$
P_6: Normal	0.5	$2/8 \times 0.3 = 0.075$
P_7: Mass	0.5	$6/8 \times 0.3 = 0.225$
P_8: Normal	0.5	$2/8 \times 6.3 = 0.075$

$W_{positive} = \frac{\text{num negative}}{\text{num total}}$ $W_{negative} = \frac{\text{num positive}}{\text{num total}}$