Logistic regression is a method in the family of parametric models. By using the logistic function

$$h(z) = \frac{e^z}{1 + e^z} \tag{1}$$

it is possible to define z as a linear regression model

$$z = \theta_0 + \theta_1 x_1 + \theta_2 x_2 + \ldots + \theta_p x_p = \theta^T \mathbf{x} \tag{2}$$

which squeezes the logistic function on the interval $[0, 1]$ (referred to as the *logit*). Since the model is predicting the outcome of the feature *male* or *female*, this implementation is a binary classification model. Instead of fitting to data, the sigmoid curve separates the data in the xy-plane with regards to a decision boundary. Train bla bla bla by numerically solving

$$\hat{\theta} = \arg\min_{\theta} \frac{1}{n} \sum_{i=1}^{n} \ln\left(1 + e^{-y_i \theta^T \mathbf{x}_i}\right) \tag{3}$$

The parameter vector $\hat{\theta}$ is then applied in Function 1 binary return yeeeeeee fredag mina vänner.