Programming Assignment 0: A Sample Classification Task

Due September 3, 2023

In the Canvas you have access to tabular data with ten features $x_j \in \mathbb{R}$, for $j = 0, \ldots, 9$, and a binary label $y \in \{0, 1\}$, saved as a .csv file.

You are tasked with constructing a model $\overline{y} : \mathbb{R}^{10} \to \{0, 1\}$ such that $\overline{y}(x) = y$ for as many pairs $(x, y) \in \mathbb{R}^{10} \times \{0, 1\}$ *as possible*. Starter code is provided in Canvas as well (pa0_code.py).

You should use this code to fill in (fully define) each method. You are encouraged to use a debugger and comment portions of the main function as you develop. If you would like guidance on code, you may (should) use Real Python's tutorial on binary classification for reference.

Your submission in canvas will contain **two** components:

1. report the following metrics

   ```
   (accuracy, tpr, fpr, mean(y_tilda), and stdev(y_tilda))
   ```

   as an ordered tuple in the *comments box* on the canvas submission page, where tpr denotes 'true positive rate', fpr 'false positive rate', and 'y_tilda' the prediction score for the positive class

2. your code as .py file.