Using the 2D provided in the table above, implement linear discriminant functions using the following methods:

1. **Perceptron Criterion**
   a. Apply the Perceptron criterion to discriminate categories $\omega_1$ and $\omega_2$
   b. Plot the criterion function as function of the iteration number
   c. Vary the learning rate and plot the convergence time versus the learning rate.

2. **Relaxation Method**
   a. Implement batch relaxation with margin. Set $b = 1$ and $a(1) = 0$, and apply it to the data in $\omega_1$ and $\omega_2$. Plot the criterion function as function of the number of passes through the data.
   b. Repeat for $b = 0.5$
   c. Again, vary the learning rate and plot the convergence time versus the learning rate.