Discretization of the boundary:
\[ \Gamma = \Gamma_D \cup \Gamma_N \approx \Gamma_h = \Gamma_{Dh} \cup \Gamma_{Nh} \]

Let us choose \( n \) different nodes \( x_1, \ldots, x_n \) on the boundary \( \Gamma \) of the domain \( \Omega \):

\[ x_i \neq x_j \quad \forall i \neq j \]
\[ x_1, \ldots, x_n \in \Gamma_D \]
\[ x_{n+1}, \ldots, x_{2n} \in \Gamma_N \]
\[ x_{2n+1} = x_1 \text{ (periodic)} \]

\[ \Gamma_j = \{ x = x_j + t(x_{j+1} - x_j) : t \in \mathbb{R}^2 : 0 \leq t < 1 \} = \Gamma_{Dj} \]

= 4th boundary piece

\[ h_j = |\Gamma_j| = |x_{j+1} - x_j| = \text{jth step size}, \]

\[ \Gamma_h = \bigcup_{j=1}^{n} \Gamma_j = \bigcup_{j=1}^{n} \Gamma_{Dj} \]

\[ \Gamma_0 \approx \Gamma_{Dh} = \bigcup_{j=1}^{n} \Gamma_j \]

\[ \Gamma_N \approx \Gamma_{Nh} = \bigcup_{j=1}^{n} \Gamma_j \]

\[ y_0 = x_j + \frac{1}{2} (x_{j+1} - x_j) \]