

**Example 4.3** Let  $\mathcal{X} = \{A, B, C, D\}$ . Consider the code  $\mathcal{C}$  defined by

$x$	$\mathcal{C}(x)$
A	0
B	1
C	01
D	10

$$AAD \rightarrow 0010$$

$$ACA \rightarrow 0010$$

$$AABA \rightarrow 0010$$

Therefore,  $\mathcal{C}$  not uniquely decodable.