Problem Set I

Deterministic Finite Automata

Let \( \Sigma \) be the set \( \{0, 1, 2\} \). Give deterministic finite automata for the following languages:

1. All strings in \( \Sigma^* \) that begin and end with different symbols.

2. All strings in \( \Sigma^* \) that contain all symbols of \( \Sigma \).

3. All strings in \( \Sigma^* \) that do not contain all symbols of \( \Sigma \).