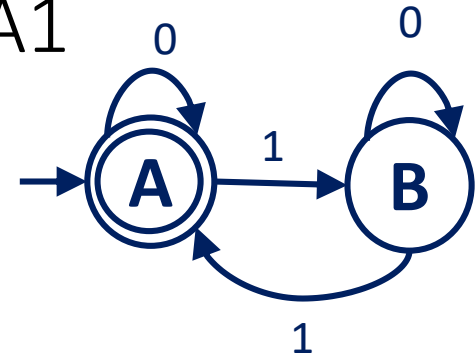# Theory of Computation

Operations over FAs (the cartesian product)
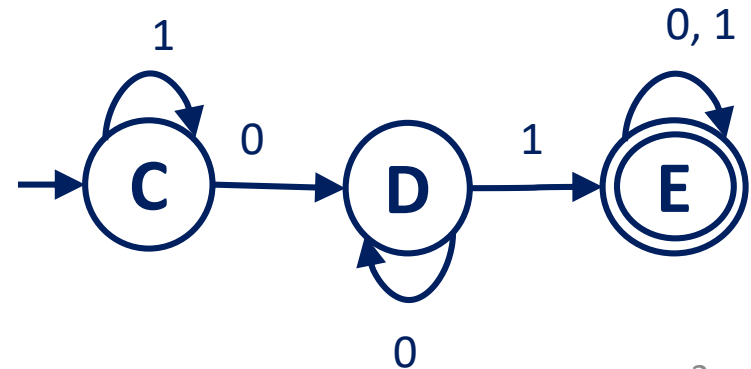
Example

L1 – DFA1

▶ Two languages, L1 and L2, represented by DFA1 and DFA2, respectively

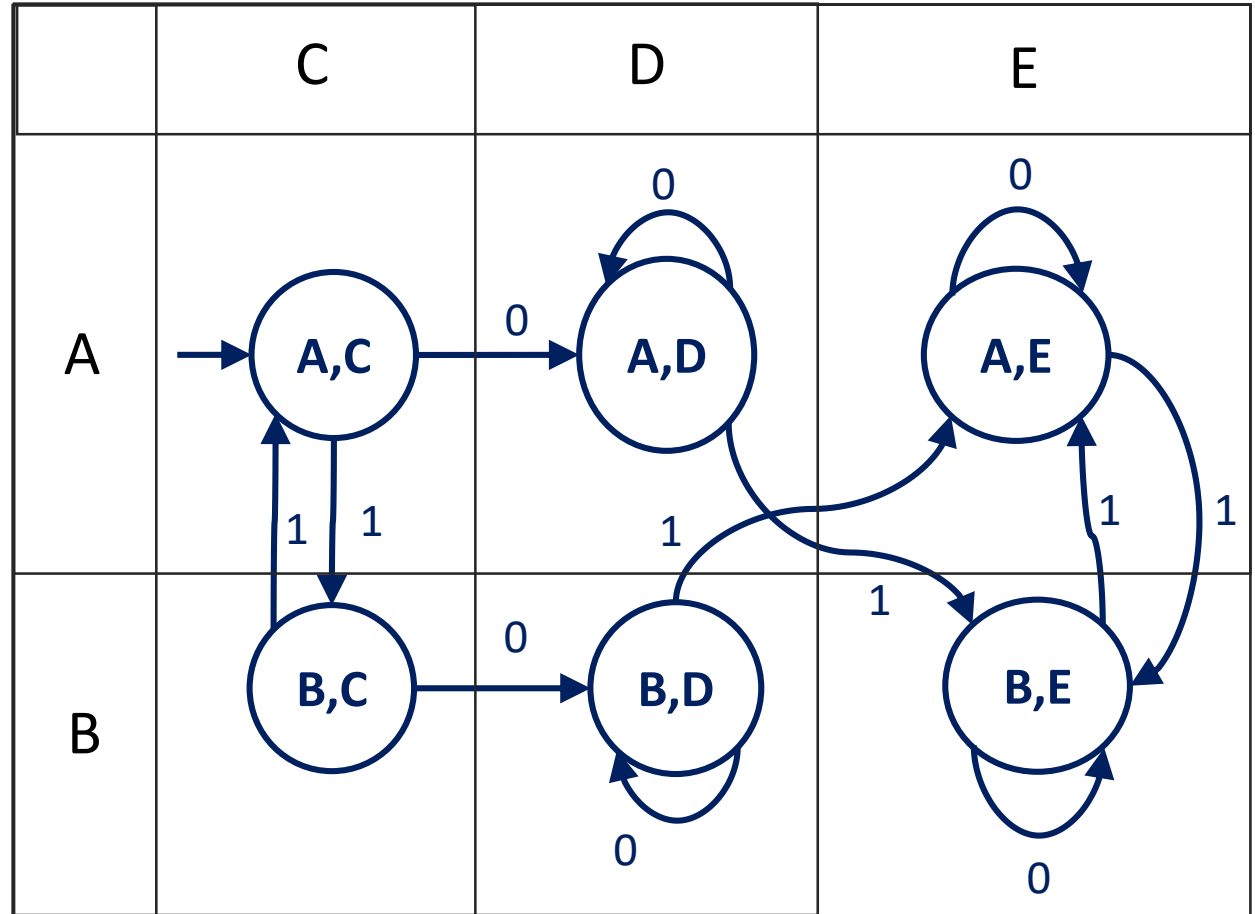▶ Let's apply the cartesian product between the two DFAs, i.e., DFA1 x DFA2

L2 – DFA2

2

DFA1 x DFA2

Result of the Cartesian Product?

▶Depends on the states of DFA1 x DFA2 selected as final states!

▶Selection of Final States may conduct to:

  ▶L1 ∩ L2

  ▶L1 ∪ L2

  ▶L1 − L2

  ▶L2 − L1