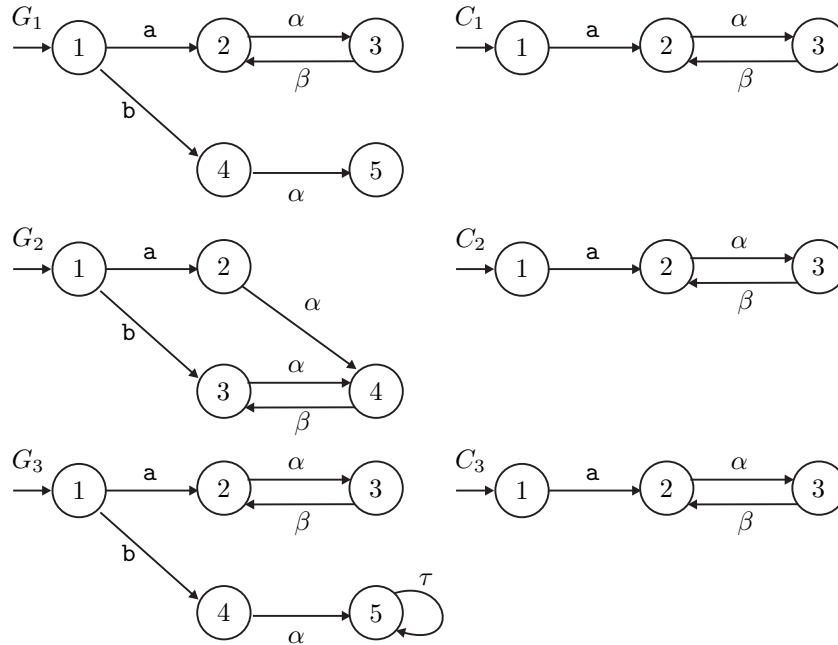


Exercise Sheet 3: Language-Diagnosis

Problem 6:

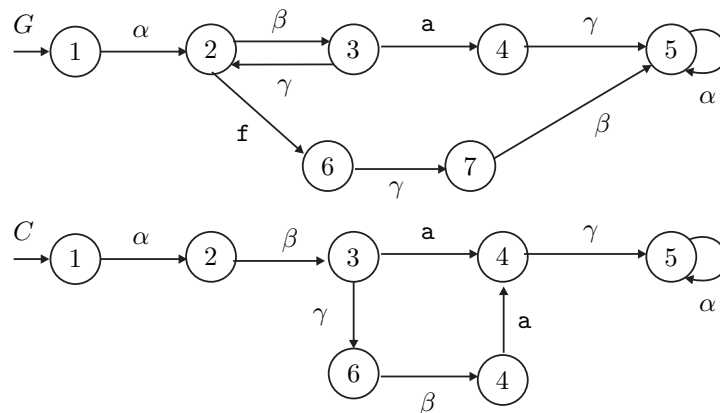
The following automata G_1, G_2, G_3 are given with the observable events $\Sigma_o = \{\alpha, \beta\}$. In addition, C_1, C_2, C_3 are the respective specification automata.



- Compute the diagnoser automata D_1, D_2, D_3 for the given plants and specifications
- Decide if $K_i = L(C_i)$ is language-diagnosable for G_i and $p : \Sigma^* \rightarrow \Sigma_i^*$ for $i = 1, 2, 3$.
- Verify your result using DESTool.

Problem 7:

Consider the following plant automaton G and the specification $K = L(C)$. Assume that there are two diagnosers with the observations $\Sigma_{o,1} = \{\alpha, \beta\}$ and $\Sigma_{o,2} = \{\alpha, \gamma\}$. Determine by inspection if K is co-diagnosable for G and $p_i : \Sigma^* \rightarrow \Sigma_{o,i}^*$ for $i = 1, 2$.



Problem 8:

Extend the language-diagnosability test from the lecture such that diagnosability can also be verified for plants G with unobservable cycles.