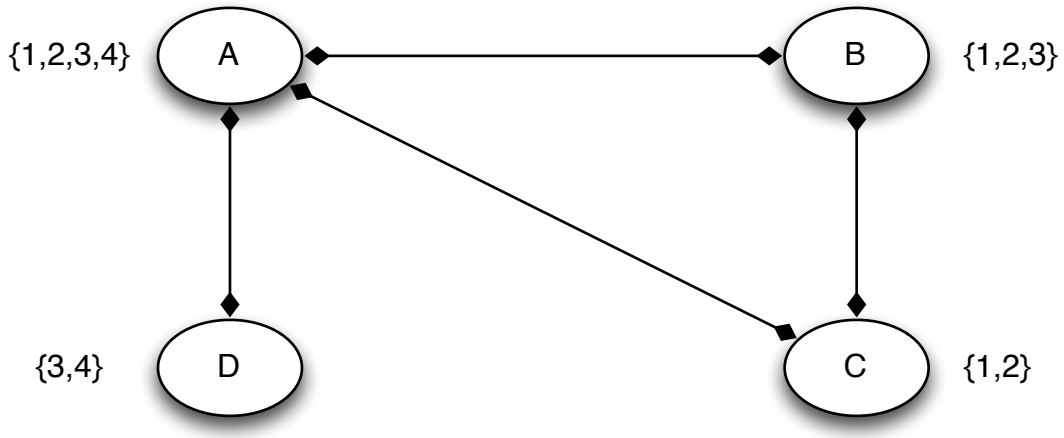
Constraint Satisfaction Problem Self-Check

605.645 – Artificial Intelligence

The purpose of this self-check is to make sure you understand key concepts for the algorithms presented during the module and to prepare you for the programming assignment. As you work through problems, you should always be thinking “how would I do this in code? What basic data structures would I need? What operations on those basic data structures?”

Consider the following CSP expressed as a constraint graph:



1. Demonstrate BT+FC on the constraint graph using a static ordering [A, B, C, D] for variables and a static ordering for values [1,2,3,4].
2. Demonstrate BT+FC on the constraint graph using Minimum Remaining Values for variables and a static ordering for values [1, 2, 3, 4]. Break any ties alphabetically.
3. Demonstrate BT+FC on the constraint graph using Degree Heuristic for variables and a static ordering for values [1, 2, 3, 4]. Break any ties alphabetically.
4. Demonstrate BT+FC on the constraint graph using Minimum Remaining Values for variables and Least Constraining Value for values. Break any ties alphabetically (variables) or ascending order (values).