Constraint satisfaction problem

- Basic elements:

  - $\mathscr{X} = \{X_1, \cdot, X_n\}$: set of variables

  - $\mathscr{D} = \{D_1, \cdots, D_n\}$: domains (specific values of $\mathscr{X}$)

  - $\mathscr{C}$: set of constraints

- State of CSP:

  - Complete assignment: all variables are assigned

  - Partial assignment

  - Consistent: not violating any constraints

Binary CSP, Constraint Graph

- Each constraint only contains two variables

- Node: variables, unary constraint

- Edge: binary constraint

- A simple case of CSP! Not all CSP is binary!