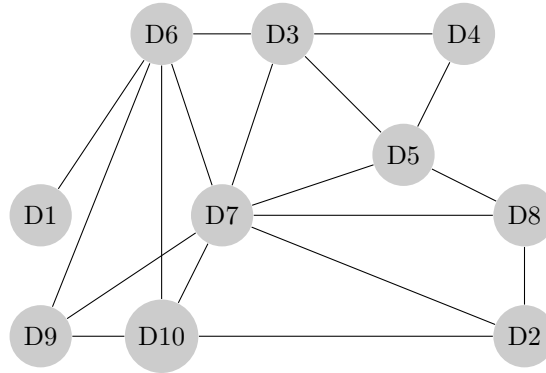Problem 1. A graph of the CSP

Variables: Domains
D1: District 1 $\{blue, chartreuse, green, red\}$
$D2 : District2 \{blue, chartreuse, green, red\}$
$D3 : District3 \{blue, chartreuse, green, red\}$
$D4 : District4 \{blue, chartreuse, green, red\}$
$D5 : District5 \{blue, chartreuse, green, red\}$
$D6 : District6 \{blue, chartreuse, green, red\}$
$D7 : District7 \{blue, chartreuse, green, red\}$
$D8 : District8 \{blue, chartreuse, green, red\}$
$D9 : District9 \{blue, chartreuse, green, red\}$
$D10 : District10 \{blue, chartreuse, green, red\}$

Constraints
D1$\neq D6, D2 \neq D7, D2 \neq D8, D2 \neq D10, D3 \neq D6, D3 \neq D7, D3 \neq D4,$
$D3 \neq D5 D4 \neq D5, D5 \neq D8, D5 \neq D7, D6 \neq D7, D6 \neq D9, D6 \neq D10,$
$D7 \neq D9, D7 \neq D8 D7 \neq D10, D9 \neq D10$

Problem 2
D7 would be chosen since it has 6 constraints which is the most in the constraint problem D7$\neq D2, D7 \neq D3, D7 \neq D5, D7 \neq D6, D7 \neq D8, D7 \neq D9$