

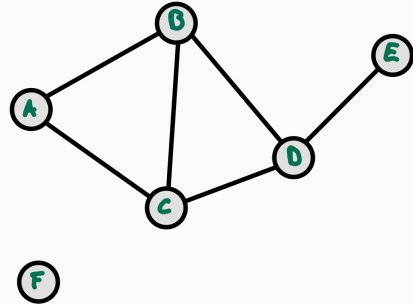
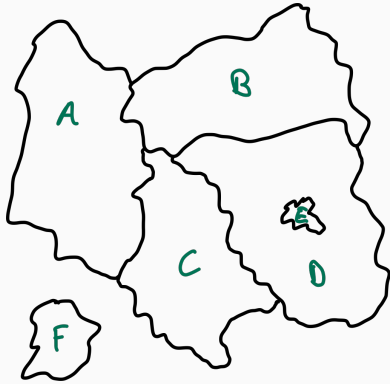
# Lösen von diskreten CSP

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# Einfärben von Landkarten als CSP



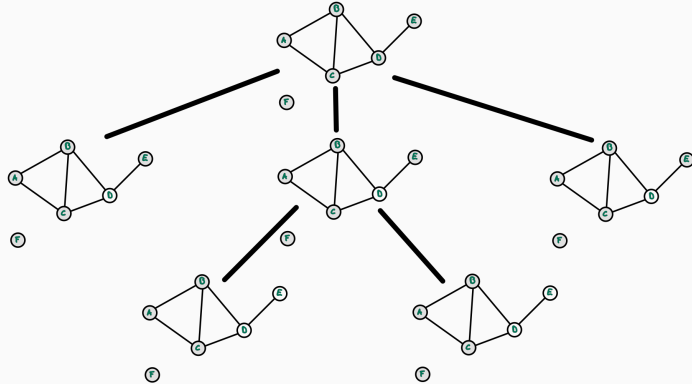
# Endliche Domänen: Formulierung als Suchproblem

```
def BT_Search(assignment, csp):  
    if complete(assignment): return assignment  
  
    var = VARIABLES(csp, assignment)  
  
    for value in VALUES(csp, var):  
        if consistent(value, var, assignment, csp):  
            assignment += {var = value}  
  
            if INFERENCE(csp, assignment, var) != failure:  
                result = BT_Search(assignment, csp)  
                if result != failure: return result  
  
            assignment -= {var = value}  
  
    return failure
```

# BT-Suche für CSP am Beispiel Landkartenfärbeproblem

```
def BT_Search(assignment, csp):  
    if complete(assignment): return assignment  
  
    var = VARIABLES(csp, assignment)  
  
    for value in VALUES(csp, var):  
        if consistent(value, var, assignment, csp):  
            assignment += {var = value}  
  
            if INFERENCE(csp, assignment, var) != failure:  
                result = BT_Search(assignment, csp)  
                if result != failure: return result  
  
            assignment -= {var = value}  
  
    return failure
```

Quelle: Eigenes Code basierend auf einer Idee nach (Russell und Norvig 2003, S. 176, Fig. 5.5)



- Lösung von CSP mit endlichen Domänen mit Hilfe der Backtracking-Suche



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