

CSP PROBLEM:

```
from simpleai.search import CspProblem, backtrack
def constraint_func(names, values):
    return values[0] != values[1]
if __name__ == "__main__":
    names = ('Ma', 'Ju', 'St', 'Am', 'Br',
            'Jo', 'De', 'Al', 'Mi', 'Ke')
    colors = dict((name, ['red', 'green', 'blue', 'gray']) for name in names)
    constraints = [
        (('Ma', 'Ju'), constraint_func),
        (('Ma', 'St'), constraint_func),
        (('Ju', 'St'), constraint_func),
        (('Ju', 'Am'), constraint_func),
        (('Ju', 'De'), constraint_func),
        (('Ju', 'Br'), constraint_func),
        (('St', 'Am'), constraint_func),
        (('St', 'Al'), constraint_func),
        (('St', 'Mi'), constraint_func),
        (('Am', 'Mi'), constraint_func),
        (('Am', 'Jo'), constraint_func),
        (('Am', 'De'), constraint_func),
        (('Br', 'De'), constraint_func),
        (('Br', 'Ke'), constraint_func),
        (('Jo', 'Mi'), constraint_func),
        (('Jo', 'Am'), constraint_func),
        (('Jo', 'De'), constraint_func),
        (('Jo', 'Ke'), constraint_func),
        (('De', 'Ke'), constraint_func),
    ]
```

```
problem = CspProblem(names, colors, constraints)
output = backtrack(problem)
```

```
print("\nColor mapping:\n")
for k, v in output.items():
    print(k, "==>", v)
```

OUTPUT:

color mapping:

```
Ma ==> red
Ju ==> green
St ==> blue
Am ==> red
Br ==> red
Jo ==> green
De ==> blue
Al ==> red
Mi ==> gray
Ke ==> gray
```