

# **Constraint Satisfaction Problems**

**Lab 6**

# Assignment 2

Must be submitted

Use the following pseudocode to complete the program [constraints\\_template.py](#). Remember to **incorporate the other methods** already present in the file.

```
function RECURSIVE-BACKTRACKING(assignment, csp)
  if assignment is complete then return assignment
  var ← SELECT-UNASSIGNED-VARIABLE(VARIABLES[csp], assignment, csp)
  for each value in ORDER-DOMAIN-VALUES(var, assignment, csp)
    if value is consistent with assignment given CONSTRAINTS[csp]
      add {var = value} to assignment
      result ← RECURSIVE-BACKTRACKING(assignment, csp)
      if result ≠ failure then return result
      remove {var = value} from assignment
  return failure
```

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Modify the program from the exercise to use:

→ The map of South America (on the next slide)

→ 4 colors (red, green, blue and yellow)

→ **Hand in** the py file and a pdf with a small description of what you did



# Challenge

Implement forward checking and arc consistency for the previous exercise.