DECISION ANALYTICS.

Lab09: Backtracking search

BACKGROUND.

This exercise will build on Lab07 and Lab08 and add a backtracking search algorithm for finding all feasible solutions to a SAT problem.

Task 1.

Use the model class from Lab07 or Lab08 and add a function `Search()` to implement a backtracking search with integrated arc consistency checking to find all valid solutions to the SAT problem. Add and remove constraints to the model and make sure to enforce arc consistency in each node.

(Hint: use `copy.deepcopy` to create copies of the model when branching and backtracking; now you need to make sure that variables are not compared by references but using their names in the constraint propagation, as the deep copy will make a copy of the variables)