

## Challenge Oct-2023 “Coins”

### Solution using MiniZinc by Florian Sikora

Suppose you need to pay 1 Euro. In how many different ways you can do it via 1c, 2c, 5c, 10c, 20c, 50c and 1 Euro coins?

```
-----  
/*minizinc euro2.mzn --solver gecode -a -s*/  
/*-s for stats, -a for all solutions*/  
  
/* constant array with the values of the coins */  
array[1..7] of int: coins = [1, 2, 5, 10, 20, 50, 100];  
  
/* number of coins of each type */  
array[1..7] of var 0..100: x;  
  
/* constraint the sum of the coins to be 100 */  
constraint sum(i in 1..7)(coins[i]*x[i]) = 100;  
  
solve satisfy;
```

```
-----  
I used minizinc with the command line :  
minizinc euro.mzn --solver gecode -a -s
```

The stats :

```
%%mzn-stat: initTime=0.000271  
%%mzn-stat: solveTime=0.138867  
%%mzn-stat: solutions=4563  
%%mzn-stat: variables=7  
%%mzn-stat: propagators=1  
%%mzn-stat: propagations=9174  
%%mzn-stat: nodes=9125  
%%mzn-stat: failures=0  
%%mzn-stat: restarts=0  
%%mzn-stat: peakDepth=17  
%%mzn-stat-end
```