APL - Assignment n°4

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Please note that every file mentioned in this PDF is provided in the Canvas Submission.

Part 1 - Triangle Cover

This problem is a simple problem also called the "Simon Tatham's Puzzles". The goal is simple:

- This problem is a grid of 5x5.
- The goal of that problem is to find 3 triangles of any size such that every point in the grid is covered by an edge of any triangle.

Unfortunately, our try wasn't successful even with help. We tried to make something we could understand but we didn't suceed.

However, our code is located in the `triangles.smt` (submitted with that PDF).

Part 2 - Coin Denominations

This problem is the following:

- We have 3 denominations of coins of a money called centos.
- It requires 3 of those coins to make 20 centos, 23 centos and 29 centos.

Coins Denomination Solving

In order to solve that program, we had to create the `coins.smt2` (file submitted with that PDF) as an input file.

In this file, we will have to make 3 variables for the value of each denomination and 9 variable (3 for each of centos amount we need).

Finnaly, we just have to check that the number of the number of each denomination times each denomination match the amount we're looking for.

Coins Denomination Output

The following input file provides the following output:

```
sat
((denomination_1 7)
```

```
  (denomination_2 11)
  (denomination_3 6)
  (d1_nb_p1 2)
  (d2_nb_p1 0)
  (d3_nb_p1 1)
  (d1_nb_p2 0)
  (d2_nb_p2 1)
  (d3_nb_p2 2)
  (d1_nb_p3 1)
  (d2_nb_p3 2)
  (d3_nb_p3 0))
```

We can also check this by the suite of operations:
- 7 *2* + *11* 0 + 6 *1* = *20*
- *7* 0 + 11 *1* + *6* 2 = 23
- 7 *1* + *11* 2 + 6 * 0 = 29