Simulated Annealing - Report

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1 Description of implementation

1.1 Representation

boolean[][] (true where the egg is)

1.2 Objective functions

see energy() and energyRelative()

1.3 Neighbour generation

if current solution is valid, add one egg to a free place
    if it's invalid, find egg randomly and swith it with random free space

2 Solutions found

2.1 Egg Carton puzzle K=2, M=5

There can be 12 eggs placed in this variant of the puzzle.

```
X _ _ X _
_ X X _ _
X _ _ _ X
_ _ X _ X
_ X _ X _
```

2.2 Egg Carton puzzle K=2, M=6

There can be 12 eggs placed in this variant of the puzzle.

```
_ _ _ X X _
X X _ _ _ _
_ _ _ _ X X
X _ X _ _ _
_ X X _ _ _
_ _ _ X _ X
```

2.3 Egg Carton puzzle K=1, M=8

There can be 8 eggs placed in this variant of the puzzle.

```
_ _ _ _ X _ _ _
X _ _ _ _ _ _ _
_ _ _ _ _ _ _ X
_ _ _ _ _ X _ _
_ _ X _ _ _ _ _
_ _ _ _ _ _ X _
_ X _ _ _ _ _ _
_ _ _ X _ _ _ _
```

2.4 Egg Carton puzzle K=3, M=10

There can be 30 eggs placed in this variant of the puzzle.

```
_ X _ _ _ _ X _ X _
_ _ X _ X X _ _ _ _
X _ X _ _ _ _ X _ _
_ X _ _ _ _ _ X _ X
_ _ _ X _ _ _ _ X X
_ _ _ X X _ X _ _ _
X X _ _ _ _ _ _ _ X
_ _ X _ X _ _ X _ _
X _ _ X _ X _ _ _ _
_ _ _ _ _ X X _ X _
```

3 Discussion

heuristic - we know how a perfect solutions looks like

objective function - we dont know how perfect solution looks like, but we know how to compare two solutions, so we can tell which one of two is better