

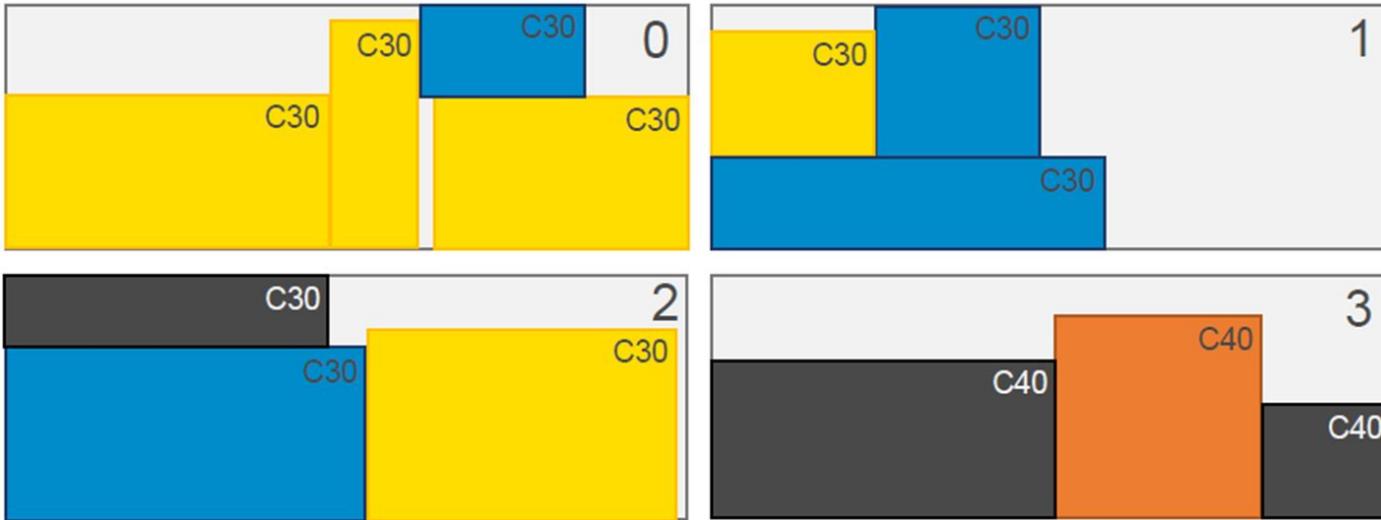
**PROGRESS** **GROUP**

# Optimize arrangement of concrete elements for a more efficient production

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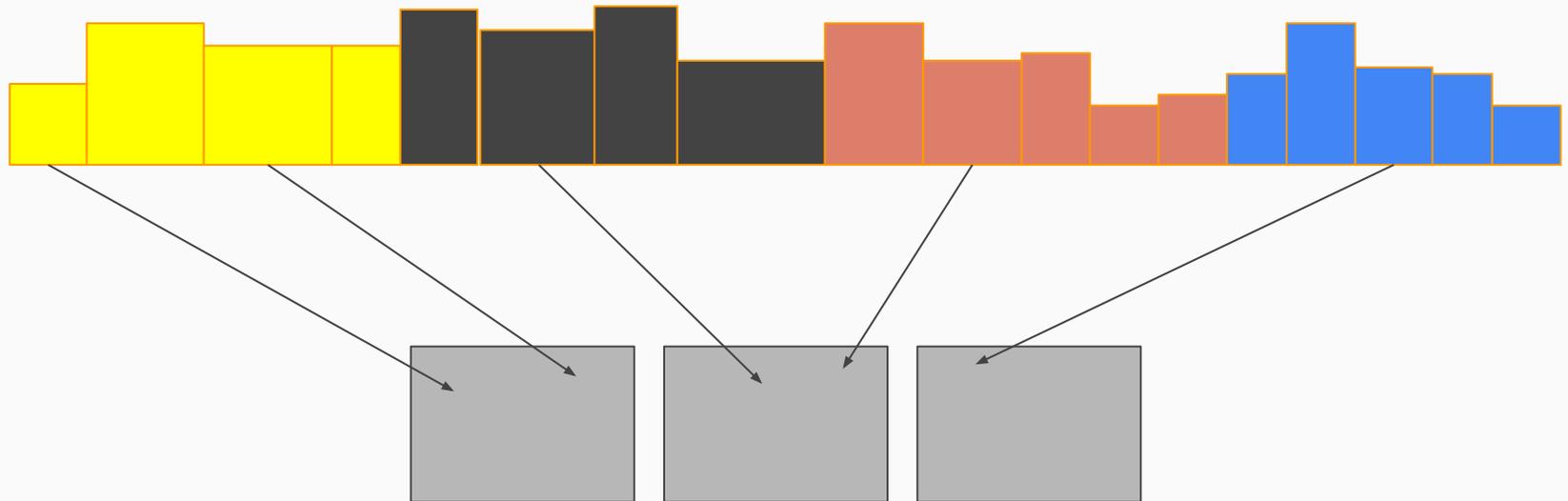
**HACK** **PROGRESS**

# Problem



# Algorithm 1: Genetic algorithms

## First iteration (random assignment of beds)

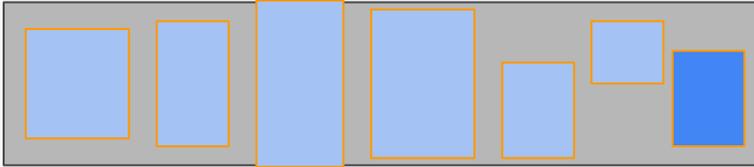


# Algorithm 1: Genetic algorithms

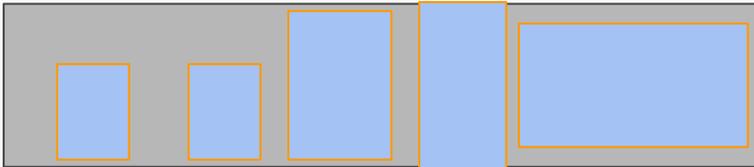
## Check concrete and stack



Wrong concrete



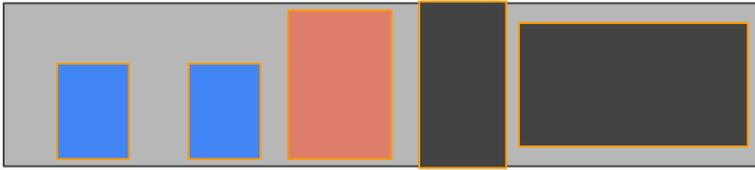
Wrong stack



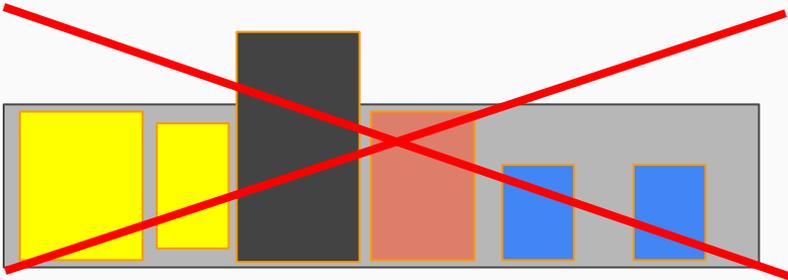
OK

# Algorithm 2: Simulated annealing

## Check if the rectangles fit



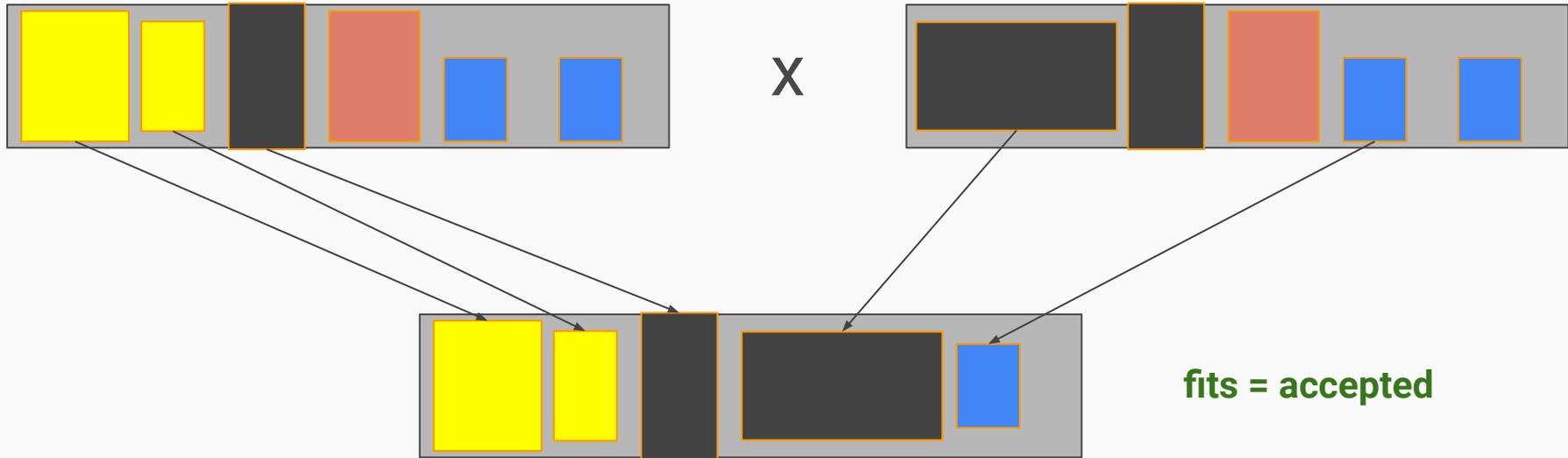
OK



Does not fit

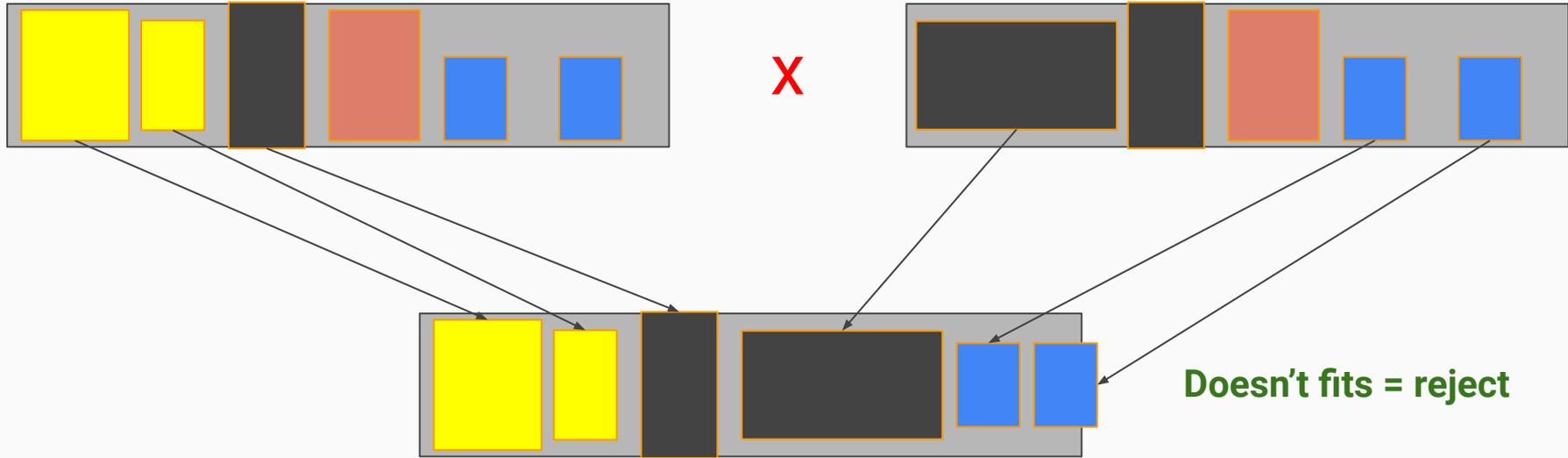
# Algorithm 1: Genetic algorithms

## Crossover of fits

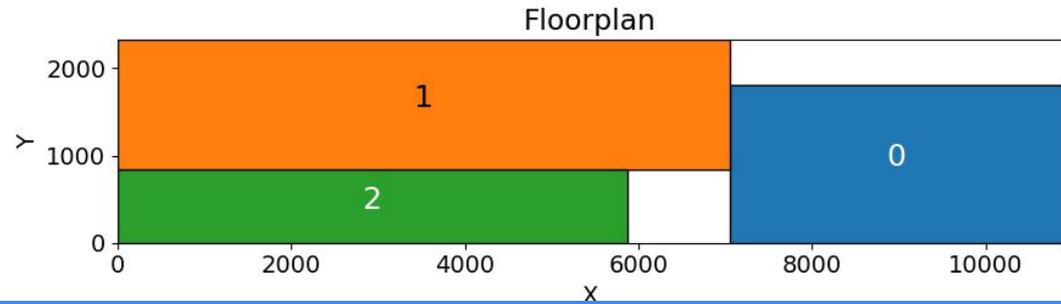


# Algorithm 1: Genetic algorithms

## Crossover of fits



# First results and next steps



- 20 pieces are assigned to beds in 10 minutes
- 30 pieces are assigned to beds in 25 minutes
  - Slow because random
- Current output:
  - We can tell you which piece should produced in which bed and how they are aligned.
- Future improvement
  - Now fitness function is true or false. Better fitness function measures the “degree of goodness” and start with better candidates

Have fun with more efficient production!

