

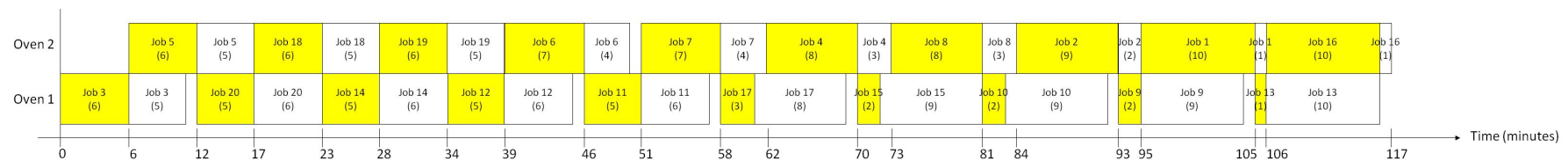


MIT Challenge 2012: Baked!!

The French Lettuce Challenge **Solution**

Round 1: equal-length jobs

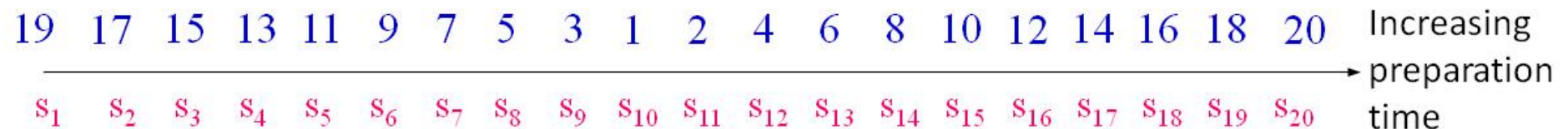
- Optimal solution (makespan=117):



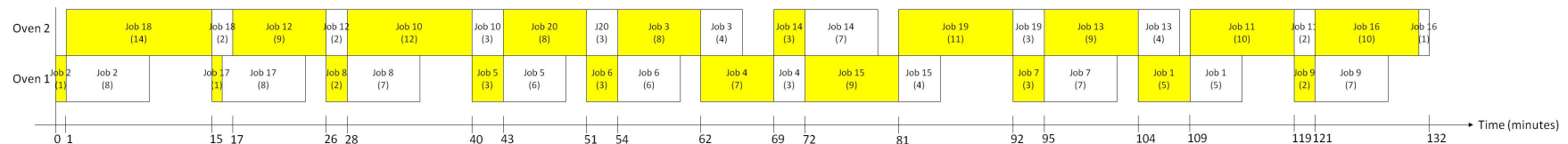
Optimal method:

- 1) Arrange jobs in non-decreasing order of preparation times.
- 2) Schedule jobs according to:

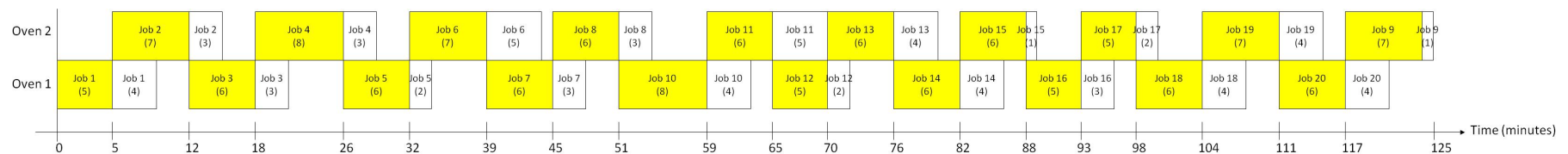
Position in schedule



- Jobs must alternate between ovens
 - But solution still not trivial
- Optimal solution found by solving a mathematical program (makespan=132).
 - A good reasoning: find matching ‘white’ blocks and ‘yellow’ blocks



- Optimal solution: schedule the job with the smallest baking duration last (makespan=125).



- Not trivial at all!!
- Best solution found using mathematical program, after 4 hours, on a computer with four processors (makespan=118, lower bound=116):

