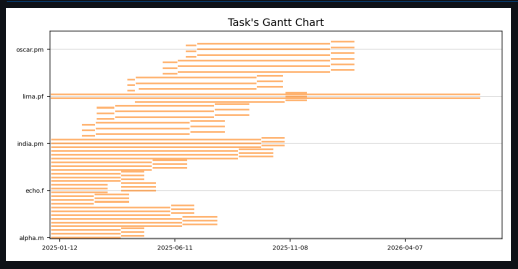
Yumbo. Scheduling, Planning and Resource Allocation

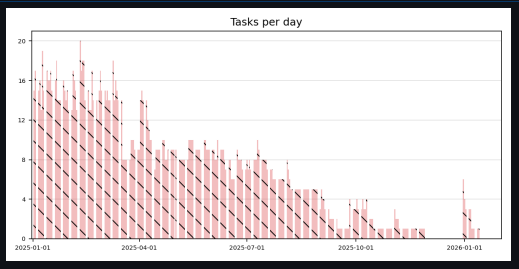
Zbigniew Romanowski, Paweł Koczyk

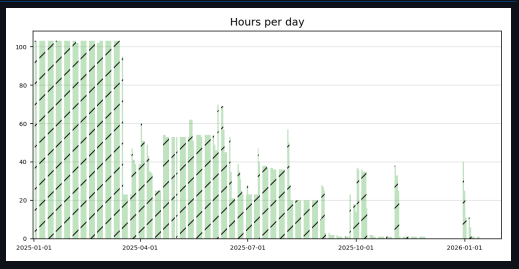
Source code, documentation and sample Excel input files can be found on Yumbo's GitHub repository.

06 January 2025, 11:10:59 AM

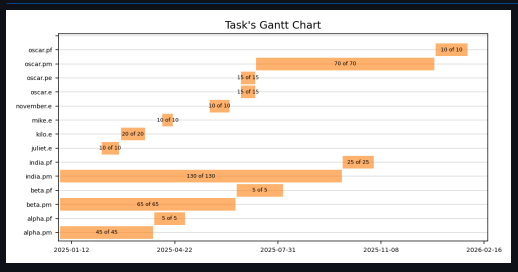
Experts overview

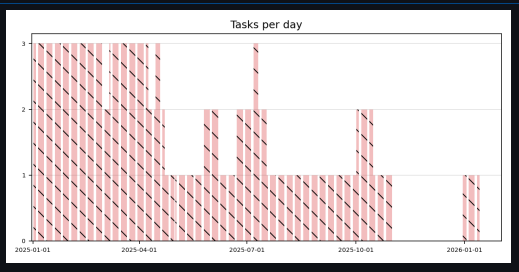


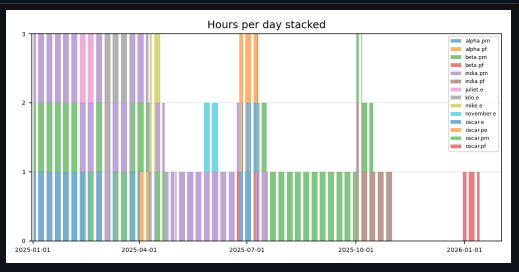




PM.Daniel the 1st unit







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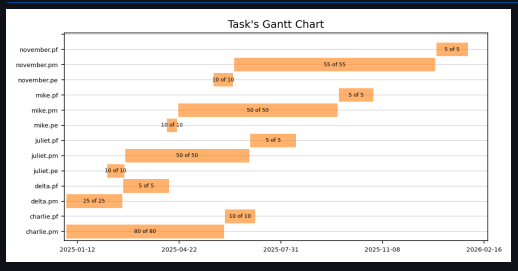

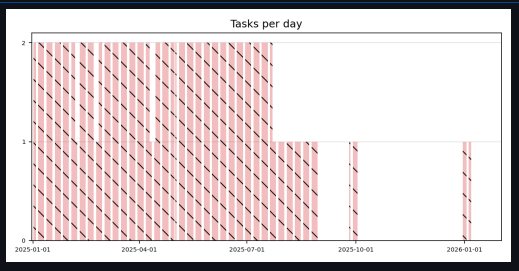

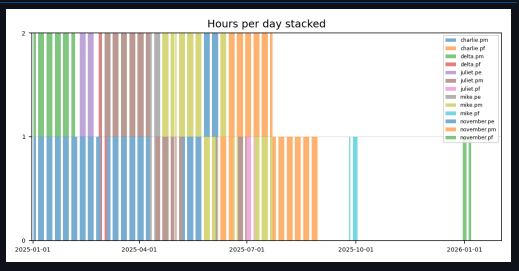

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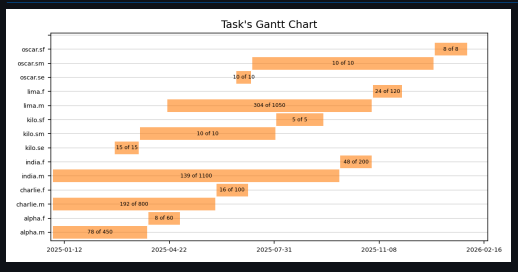

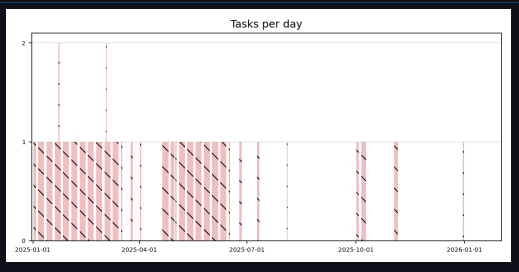

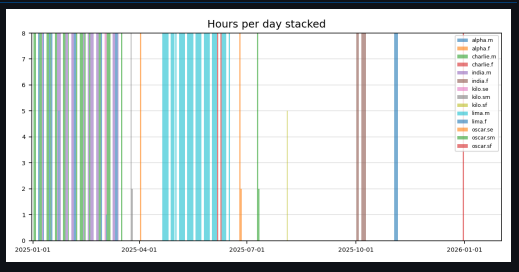

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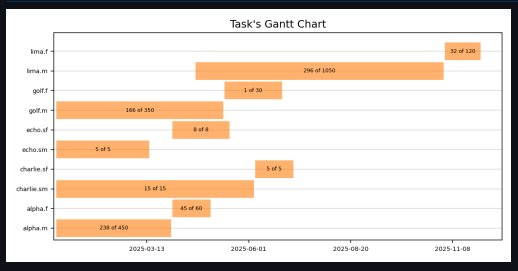

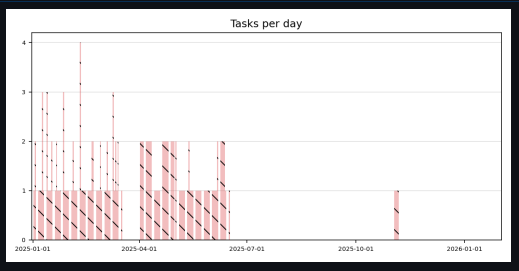

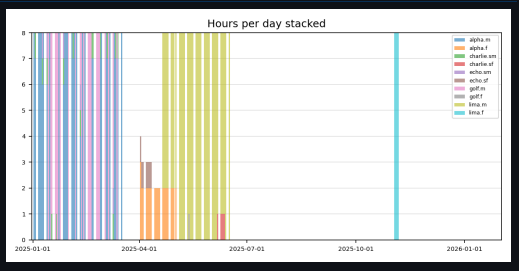

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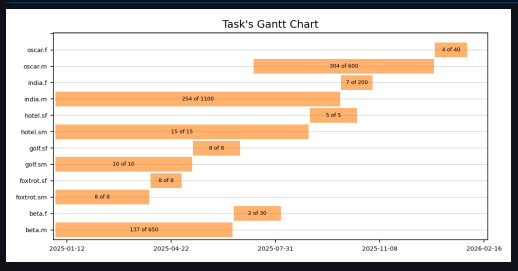

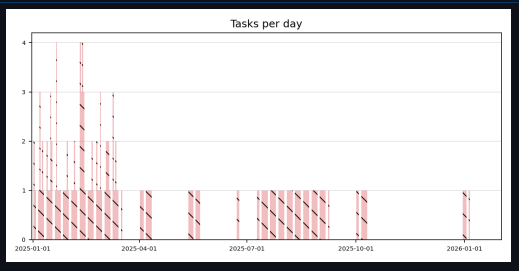

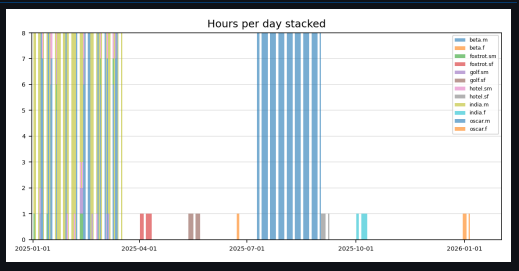

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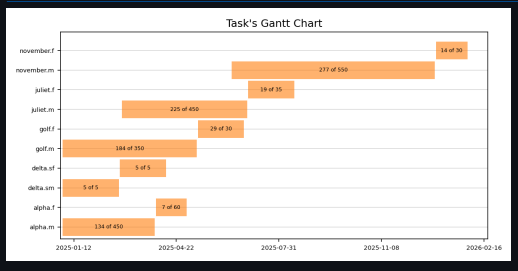

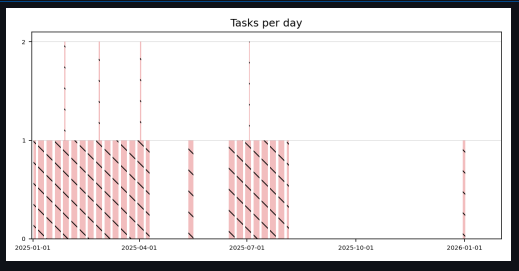

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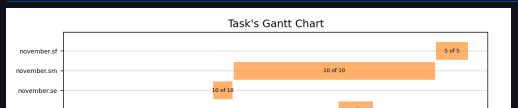
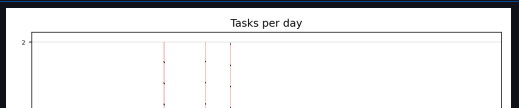
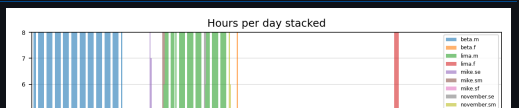
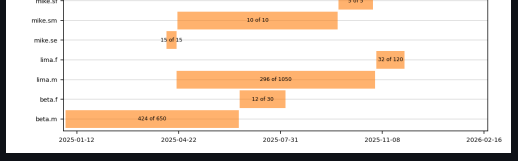
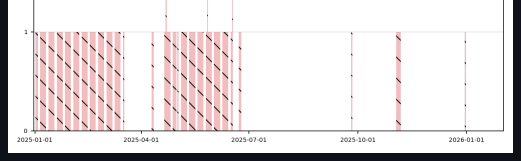
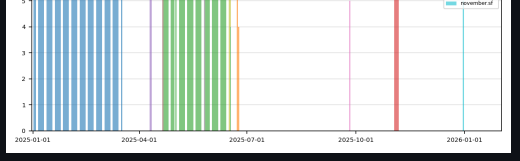




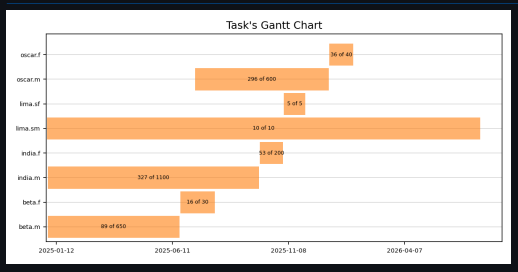


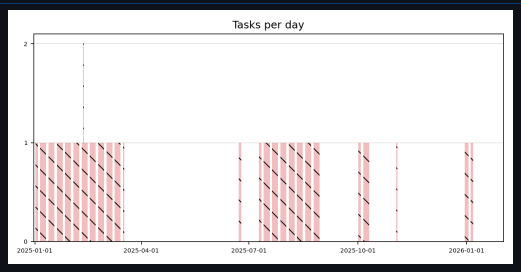






DEV.Tom the 1st unit





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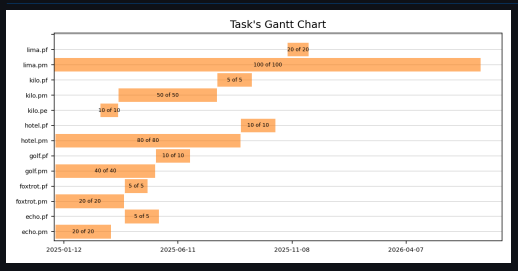

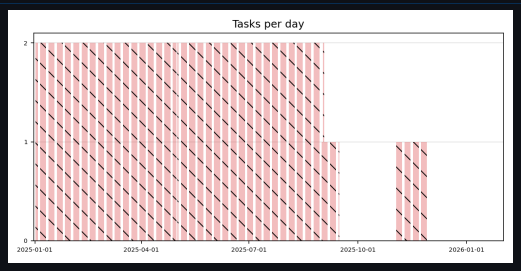

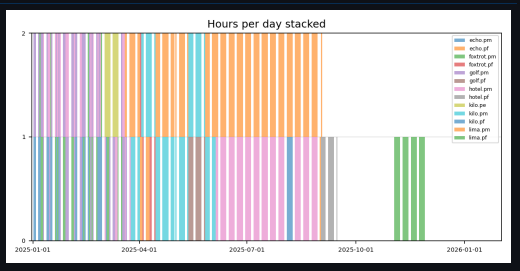

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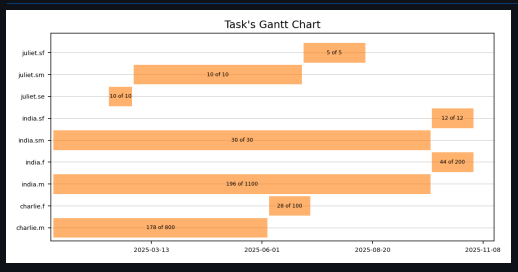

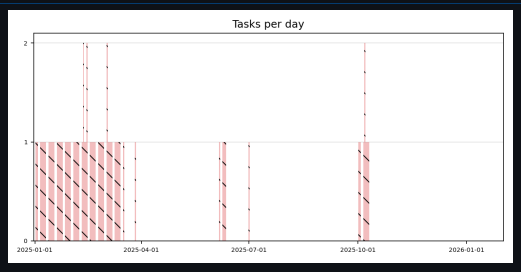

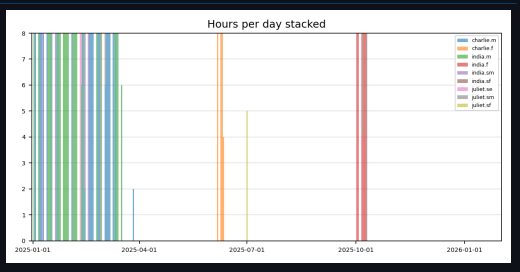

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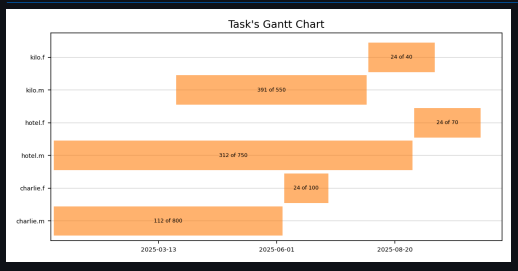

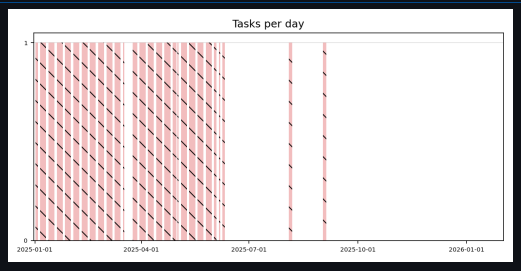

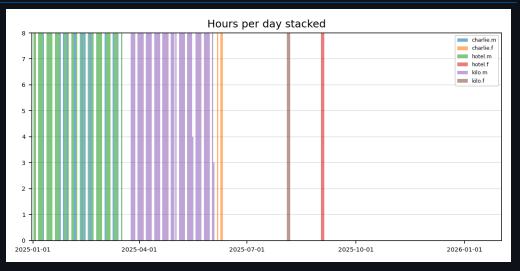

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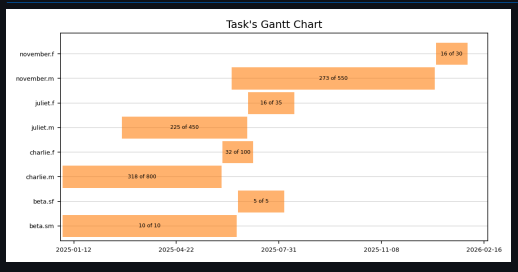

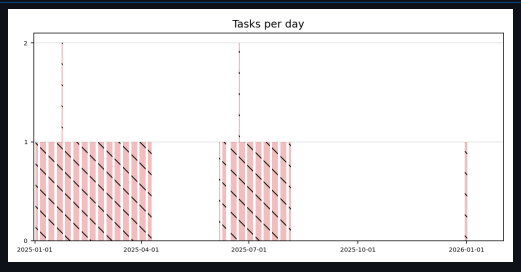

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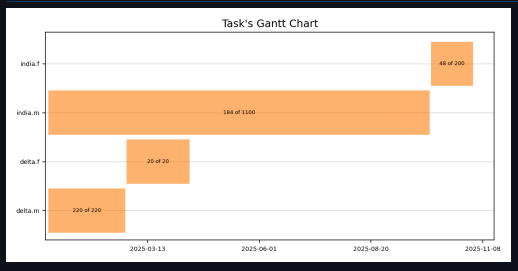

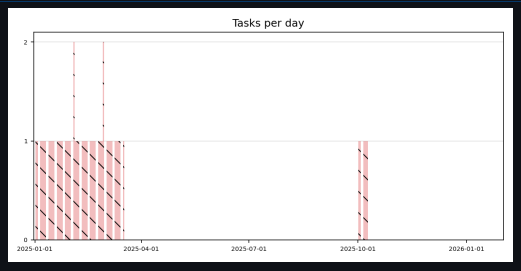

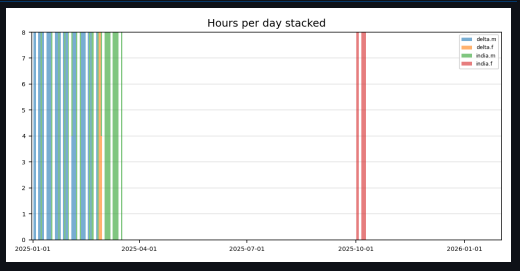

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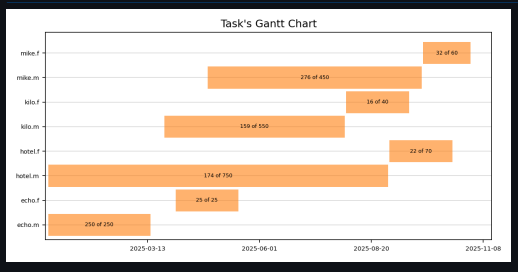

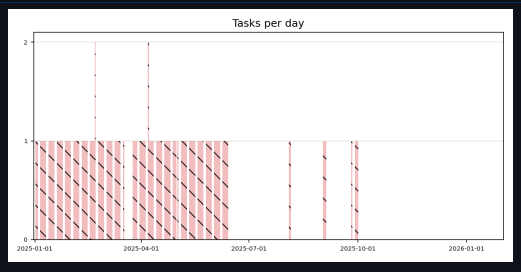

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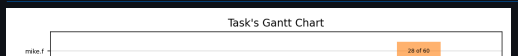

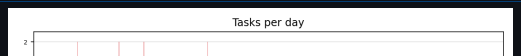

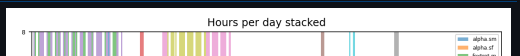

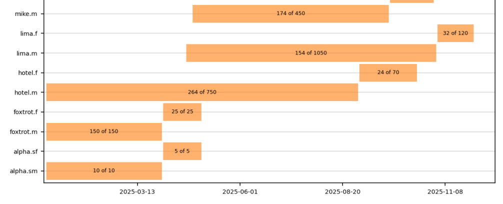

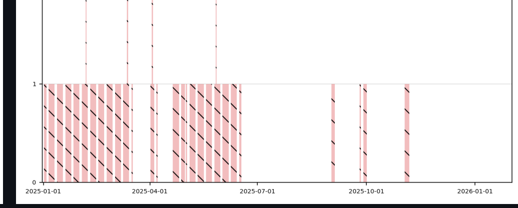

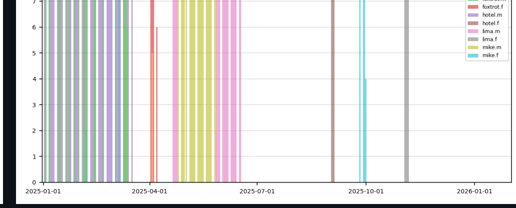

Solver output at 06 January 2025, 11:06:56 AM

```
HiGHS 1.7.1:   tech:outlev = 1
Running HiGHS 1.7.1 (git hash: dcf3813): Copyright (c) 2024 HiGHS under MIT licence terms
Coefficient ranges:
  Matrix [1e+00, 8e+00]
  Cost   [1e+00, 1e+00]
  Bound  [1e+00, 5e+01]
  RHS    [1e+00, 1e+03]
Presolving model
194155 rows, 191354 cols, 407633 nonzeros  0s
16576 rows, 102564 cols, 52484 nonzeros  0s
16576 rows, 16643 cols, 52458 nonzeros  0s

Solving MIP model with:
   16576 rows
   16643 cols (9782 binary, 6861 integer, 0 implied int., 0 continuous)
   52458 nonzeros

        Nodes      |    B&B Tree     |            Objective Bounds              |  Dynamic Constraints |       Work      
     Proc. InQueue |  Leaves   Expl. | BestBound       BestSol              Gap |   Cuts   InLp Confl. | LpIters     Time

         0       0         0   0.00%   290.8204428     inf                  inf        0      0      0         0     0.8s
         0       0         0   0.00%   30265.382019    inf                  inf        0      0      4      3049     0.9s
 R       0       0         0   0.00%   30265.382019    30375.497796       0.36%      506    121     12      3291     1.0s
 L       0       0         0   0.00%   30265.382019    30265.741352       0.00%     1264    180    271      3563     4.0s

Solving report
  Status            Optimal
  Primal bound      30265.7413522
  Dual bound        30265.3820195
  Gap               0.00119% (tolerance: 0.01%)
  Solution status   feasible
                    30265.7413522 (objective)
                    0 (bound viol.)
                    0 (int. viol.)
                    0 (row viol.)
  Timing            3.96 (total)
                    0.73 (presolve)
                    0.00 (postsolve)
  Nodes             1
  LP iterations     4591 (total)
                    0 (strong br.)
                    514 (separation)
                    1028 (heuristics)
HiGHS 1.7.1: optimal solution; objective 30265.74135
4591 simplex iterations
1 branching nodes
absmipgap=0.359333, relmipgap=1.18726e-05

"option abs_boundtol 7.105427357601002e-15;"
or "option rel_boundtol 1.5786024397762919e-16;"
will change deduced dual values.
```