Yumbo. Scheduling, Planning and Resource Allocation

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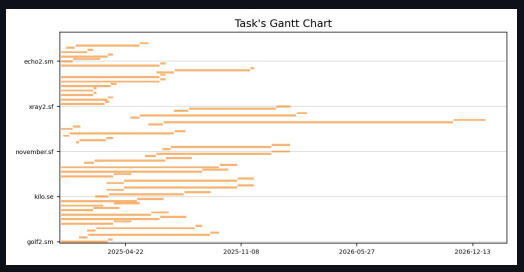
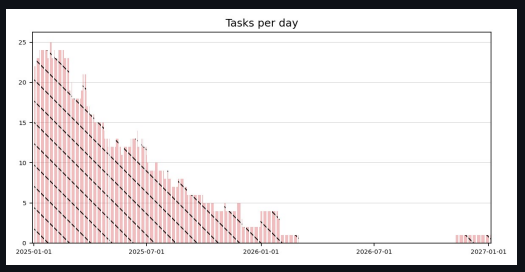
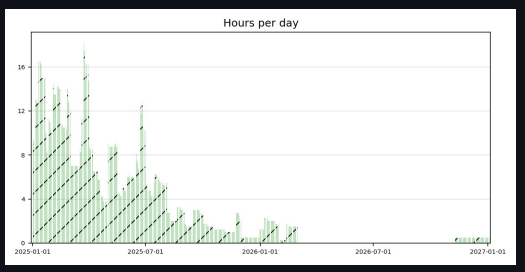
Source code, documentation and sample Excel input files can be found on Yumbo's GitHub repository.

28 January 2025, 16:19:36 PM

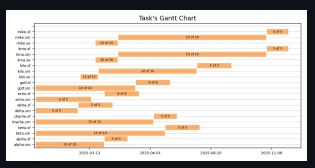
Experts overview

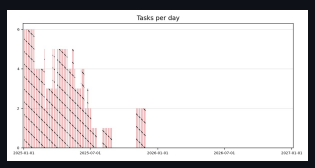


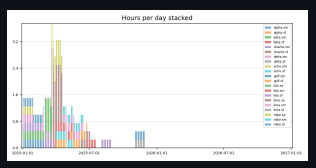


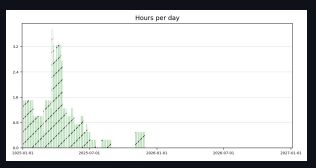


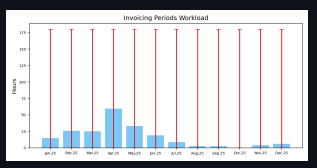
SA.Adrian the 1st unit



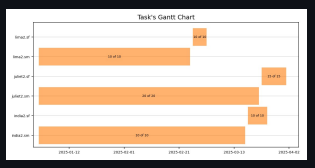


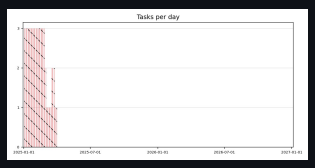


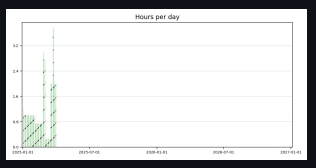


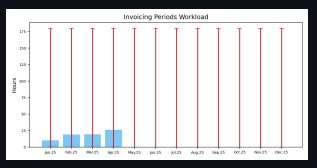


SA.Justin the 2nd unit

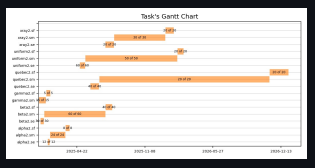


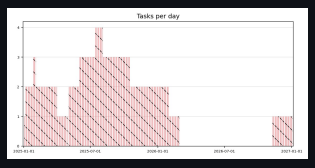


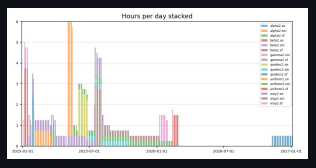


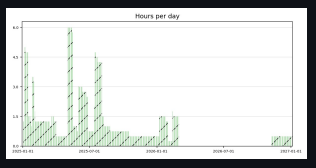


SA.Kevin the 2nd unit

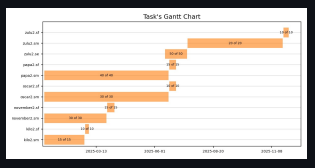


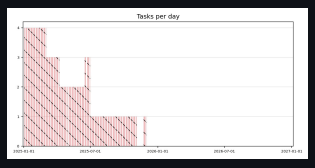


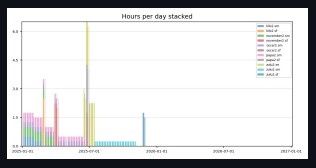


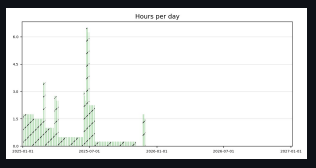


SA.Martha the 2nd unit

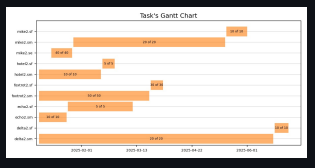


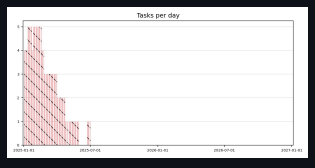


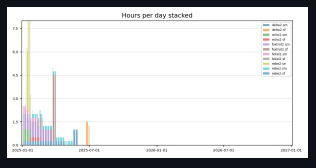


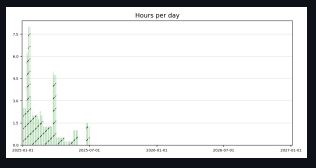


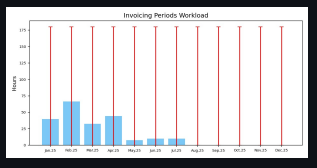
SA.Melanie the 2nd unit



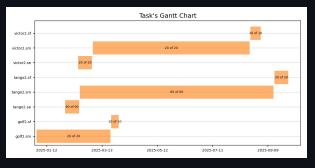


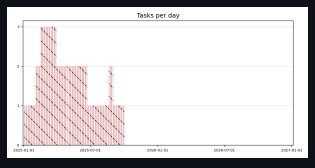


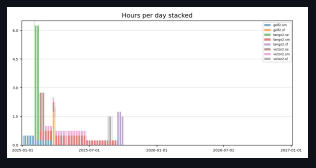


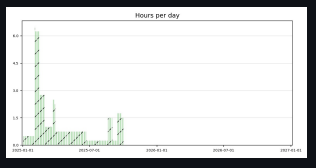


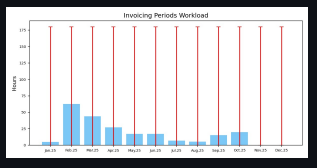
SA.Peter the 2nd unit



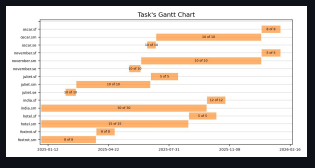


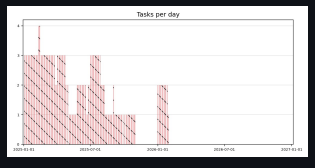


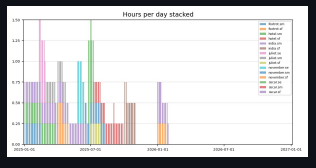


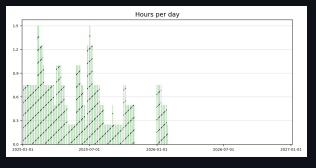


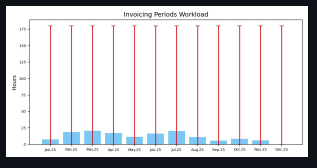
SA.Robert the 1st unit











Solver output at 28 January 2025, 16:19:41 PM

```
HiGHS 1.8.1:   tech:outlev = 1
Running HiGHS 1.8.1 (git hash: 4a7f24a): Copyright (c) 2024 HiGHS under MIT licence terms
```

```
Coefficient ranges:
  Matrix [1e+00, 3e+01]
  Cost   [1e+00, 1e+00]
  Bound  [1e+00, 5e+02]
  RHS    [2e+01, 2e+02]
Presolving model
60124 rows, 61600 cols, 124479 nonzeros  0s
98 rows, 31587 cols, 4427 nonzeros  0s
95 rows, 4173 cols, 4229 nonzeros  0s
93 rows, 4101 cols, 4157 nonzeros  0s

Solving MIP model with:
   93 rows
   4101 cols (2684 binary, 1417 integer, 0 implied int., 0 continuous)
   4157 nonzeros
MIP-Timing:        0.54 - starting analytic centre calculation

Src: B => Branching; C => Central rounding; F => Feasibility pump; H => Heuristic; L => Sub-MIP;
     P => Empty MIP; R => Randomized rounding; S => Solve LP; T => Evaluate node; U => Unbounded;
     z => Trivial zero; l => Trivial lower; u => Trivial upper; p => Trivial point

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

         0       0         0   0.00%   11034.187377    inf                  inf        0      0      0         0     0.5s
 R       0       0         0   0.00%   16849.949861    16849.949861       0.00%        0      0      0        81     0.6s
         1       0         1 100.00%   16849.949861    16849.949861       0.00%        0      0      0        86     0.6s

Solving report
  Status            Optimal
  Primal bound      16849.9498607
  Dual bound        16849.9498607
  Gap               0% (tolerance: 0.01%)
  P-D integral      1.13390511677e-18
  Solution status   feasible
                    16849.9498607 (objective)
                    0 (bound viol.)
                    0 (int. viol.)
                    0 (row viol.)
  Timing            0.56 (total)
                    0.00 (presolve)
                    0.00 (solve)
                    0.00 (postsolve)
  Max sub-MIP depth 0
  Nodes             1
  Repair LPs        0 (0 feasible; 0 iterations)
  LP iterations     86 (total)
                    0 (strong br.)
                    0 (separation)
                    0 (heuristics)
HiGHS 1.8.1: optimal solution; objective 16849.94986
86 simplex iterations
1 branching nodes
absmipgap=3.63798e-12, relmipgap=2.15904e-16

"option abs_boundtol 7.105427357601002e-15;"
or "option rel_boundtol 1.431744869493965e-16;"
will change deduced dual values.
```

Elapsed time for chart creation

Chart title	Chart short name	Number of calls	Elapsed time [s]	Average time per chart [s]
Hours per day stacked	simg	7	79.441	11.349
Tasks per day	timg	7	9.953	1.422
Hours per day	himg	7	9.424	1.346
Task's Gantt Chart	gimg	7	1.981	0.283
Invoicing Periods Workload	wimg	7	1.843	0.263
Plot task with its constrains	bimg	0	0.000	0.000