

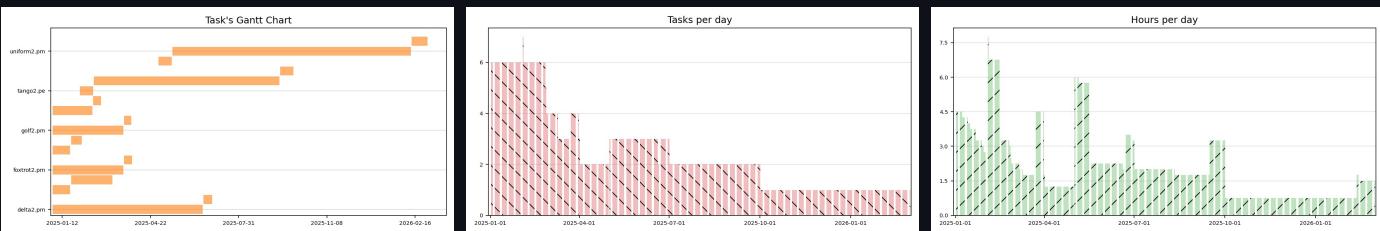
Yumbo. Scheduling, Planning and Resource Allocation

Zbigniew Romanowski, Paweł Koczyk

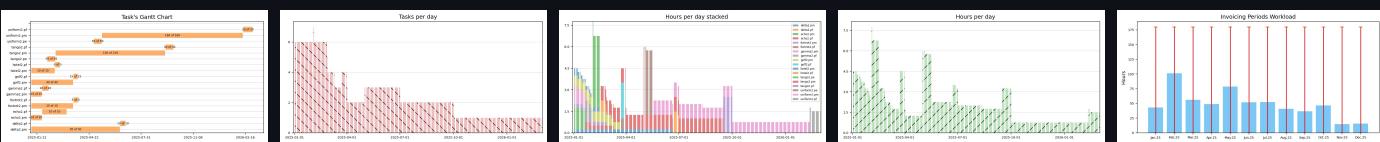
Source code, documentation and sample Excel input files can be found on [Yumbo's GitHub repository](#).

28 January 2025, 13:56:58 PM

Experts overview



PM.Anthony the 2nd unit



	Weekdays	delta2.pfm	delta2.pf	echo2.pfm	echo2.pf	foxtrot2.pfm	foxtrot2.pf	gamma2.pfm	gamma2.pf	golf2.pfm	golf2.pf	hotel2.pfm	hotel2.pf	tango2.pe	tango2.pfm	tango2.pf	uniform2.pe	uniform2.pfm	uniform2.pf	
2025-01-01	Wednesday																			
2025-01-02	Thursday	0.25		1.50		0.25		1.25		0.75		0.50								
2025-01-03	Friday	0.25		1.50		0.25		1.25		0.75		0.50								
2025-01-04	Saturday																			
2025-01-05	Sunday																			
2025-01-06	Monday	0.25		1.50		0.25		1.25		0.75		0.50								
2025-01-07	Tuesday	0.25		1.50		0.25		1.25		0.75		0.50								
2025-01-08	Wednesday	0.25		1.50		0.25		1.00		0.75		0.50								
2025-01-09	Thursday	0.25		1.50		0.25		1.00		0.75		0.50								
2025-01-10	Friday	0.25		1.50		0.25		1.00		0.75		0.50								
2025-01-11	Saturday																			
2025-01-12	Sunday																			
2025-01-13	Monday	0.25		1.50		0.25		1.00		0.75		0.50								
2025-01-14	Tuesday	0.25		1.50		0.25		1.00		0.75		0.25								
2025-01-15	Wednesday	0.25		1.50		0.25		1.00		0.75		0.25								
2025-01-16	Thursday	0.25		1.25		0.25		1.00		0.75		0.25								
2025-01-17	Friday	0.25		1.25		0.25		1.00		0.75		0.25								
2025-01-18	Saturday																			
2025-01-19	Sunday																			
2025-01-20	Monday	0.25		1.25		0.25		1.00		0.75		0.25								
2025-01-21	Tuesday	0.25		1.25		0.25		1.00		0.75		0.25								
2025-01-22	Wednesday	0.25			0.50	0.25			1.25	0.75		0.25								
2025-01-23	Thursday	0.25			0.50	0.25			1.25	0.75		0.25								
2025-01-24	Friday	0.25			0.50	0.25			1.25	0.75		0.25								
2025-01-25	Saturday																			
2025-01-26	Sunday																			
2025-01-27	Monday	0.25			0.50	0.25			1.25	0.75		0.25								
2025-01-28	Tuesday	0.25			0.50	0.25			1.00	0.75		0.25								
2025-01-29	Wednesday	0.25			0.50	0.25			1.00	0.75		0.25								
2025-01-30	Thursday	0.25			0.25	0.25			1.00	0.75		0.25								
2025-01-31	Friday	0.25			0.25	0.25			1.00	0.75		0.25								
2025-02-01	Saturday																			
2025-02-02	Sunday																			
2025-02-03	Monday	0.25			0.25	0.25			1.00	0.75		0.25		5.00						
2025-02-04	Tuesday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-05	Wednesday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-06	Thursday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-07	Friday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-08	Saturday																			
2025-02-09	Sunday																			
2025-02-10	Monday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-11	Tuesday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-12	Wednesday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-13	Thursday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-14	Friday	0.25			0.25	0.25				0.75		0.25		5.00						
2025-02-15	Saturday																			
2025-02-16	Sunday																			
2025-02-17	Monday	0.25			0.25	0.25				0.75		0.25		1.00						
2025-02-18	Tuesday	0.25			0.25	0.25				0.75		0.25		1.00						
2025-02-19	Wednesday	0.25			0.25	0.25				0.75		0.25		1.00						

	Weekdays	delta2.p.m	delta2.pf	echo2.pm	echo2.pf	foxtrot2.pm	foxtrot2.pf	gamma2.pm	gamma2.pf	golf2.pm	golf2.pf	hotel2.pm	hotel2.pf	tango2.pe	tango2.pm	tango2.pf	uniform2.pe	uniform2.pm	uniform2.pf
2025-05-04	Sunday																		
2025-05-05	Monday	0.25												1.00		4.75			
2025-05-06	Tuesday	0.25												1.00		4.50			
2025-05-07	Wednesday	0.25												1.00		4.50			
2025-05-08	Thursday	0.25												1.00		4.50			
2025-05-09	Friday	0.25												1.00		4.50			
2025-05-10	Saturday																		
2025-05-11	Sunday																		
2025-05-12	Monday	0.25												1.00		4.50			
2025-05-13	Tuesday	0.25												1.00		4.50			
2025-05-14	Wednesday	0.25												1.00		4.50			
2025-05-15	Thursday	0.25												1.00		4.50			
2025-05-16	Friday	0.25												1.00		4.50			
2025-05-17	Saturday																		
2025-05-18	Sunday																		
2025-05-19	Monday	0.25												1.00			1.00		
2025-05-20	Tuesday	0.25												1.00			1.00		
2025-05-21	Wednesday	0.25												1.00			1.00		
2025-05-22	Thursday	0.25												1.00			1.00		
2025-05-23	Friday	0.25												1.00			1.00		
2025-05-24	Saturday																		
2025-05-25	Sunday																		
2025-05-26	Monday	0.25												1.00			1.00		
2025-05-27	Tuesday	0.25												1.00			1.00		
2025-05-28	Wednesday	0.25												1.00			1.00		
2025-05-29	Thursday	0.25												1.00			1.00		
2025-05-30	Friday	0.25												1.00			1.00		
2025-05-31	Saturday																		
2025-06-01	Sunday																		
2025-06-02	Monday	0.25												1.00			1.00		
2025-06-03	Tuesday	0.25												1.00			1.00		
2025-06-04	Wednesday	0.25												1.00			1.00		
2025-06-05	Thursday	0.25												1.00			1.00		
2025-06-06	Friday	0.25												1.00			1.00		
2025-06-07	Saturday																		
2025-06-08	Sunday																		
2025-06-09	Monday	0.25												1.00			1.00		
2025-06-10	Tuesday	0.25												1.00			1.00		
2025-06-11	Wednesday	0.25												1.00			1.00		
2025-06-12	Thursday	0.25												1.00			1.00		
2025-06-13	Friday	0.25												1.00			1.00		
2025-06-14	Saturday																		
2025-06-15	Sunday																		
2025-06-16	Monday	0.25												1.00			1.00		
2025-06-17	Tuesday	0.25												1.00			1.00		
2025-06-18	Wednesday	0.25												1.00			1.00		
2025-06-19	Thursday	0.25												1.00			1.00		
2025-06-20	Friday													1.00			1.00		
2025-06-21	Saturday																		
2025-06-22	Sunday																		
2025-06-23	Monday	1.50												1.00			1.00		
2025-06-24	Tuesday	1.50												1.00			1.00		
2025-06-25	Wednesday	1.50												1.00			1.00		
2025-06-26	Thursday	1.50												1.00			1.00		
2025-06-27	Friday	1.50												1.00			1.00		
2025-06-28	Saturday																		
2025-06-29	Sunday																		
2025-06-30	Monday	1.25												1.00			1.00		
2025-07-01	Tuesday	1.25												1.00			1.00		
2025-07-02	Wednesday													1.00			1.00		
2025-07-03	Thursday													1.00			1.00		
2025-07-04	Friday													1.00			1.00		
2025-07-05	Saturday																		
2025-07-06	Sunday																		
2025-07-07	Monday													1.00			1.00		
2025-07-08	Tuesday													1.00			1.00		
2025-07-09	Wednesday													1.00			1.00		
2025-07-10	Thursday													1.00			1.00		
2025-07-11	Friday													1.00			1.00		
2025-07-12	Saturday																		
2025-07-13	Sunday																		
2025-07-14	Monday													1.00			1.00		
2025-07-15	Tuesday													1.00			1.00		

	Weekdays	delta2.p.m	delta2(pf)	echo2.p.m	echo2(pf)	foxtrot2.p.m	foxtrot2(pf)	gamma2.p.m	gamma2(pf)	golf2.p.m	golf2(pf)	hotel2.p.m	hotel2(pf)	tango2.pe	tango2.p.m	tango2(pf)	uniform2.pe	uniform2.p.m	uniform2(pf)
2025-07-16	Wednesday													1.00			1.00		
2025-07-17	Thursday													1.00			1.00		
2025-07-18	Friday													1.00			1.00		
2025-07-19	Saturday																		
2025-07-20	Sunday																		
2025-07-21	Monday													1.00			1.00		
2025-07-22	Tuesday													1.00			1.00		
2025-07-23	Wednesday													1.00			1.00		
2025-07-24	Thursday													1.00			1.00		
2025-07-25	Friday													1.00			1.00		
2025-07-26	Saturday																		
2025-07-27	Sunday																		
2025-07-28	Monday													1.00			1.00		
2025-07-29	Tuesday													1.00			1.00		
2025-07-30	Wednesday													1.00			1.00		
2025-07-31	Thursday													1.00			1.00		
2025-08-01	Friday													1.00			1.00		
2025-08-02	Saturday																		
2025-08-03	Sunday																		
2025-08-04	Monday													1.00			1.00		
2025-08-05	Tuesday													1.00			1.00		
2025-08-06	Wednesday													1.00			1.00		
2025-08-07	Thursday													1.00			1.00		
2025-08-08	Friday													1.00			1.00		
2025-08-09	Saturday																		
2025-08-10	Sunday																		
2025-08-11	Monday													1.00			1.00		
2025-08-12	Tuesday													1.00			0.75		
2025-08-13	Wednesday													1.00			0.75		
2025-08-14	Thursday													1.00			0.75		
2025-08-15	Friday													1.00			0.75		
2025-08-16	Saturday																		
2025-08-17	Sunday																		
2025-08-18	Monday													1.00			0.75		
2025-08-19	Tuesday													1.00			0.75		
2025-08-20	Wednesday													1.00			0.75		
2025-08-21	Thursday													1.00			0.75		
2025-08-22	Friday													1.00			0.75		
2025-08-23	Saturday																		
2025-08-24	Sunday																		
2025-08-25	Monday													1.00			0.75		
2025-08-26	Tuesday													1.00			0.75		
2025-08-27	Wednesday													1.00			0.75		
2025-08-28	Thursday													1.00			0.75		
2025-08-29	Friday													1.00			0.75		
2025-08-30	Saturday																		
2025-08-31	Sunday																		
2025-09-01	Monday													1.00			0.75		
2025-09-02	Tuesday													1.00			0.75		
2025-09-03	Wednesday													1.00			0.75		
2025-09-04	Thursday													1.00			0.75		
2025-09-05	Friday													1.00			0.75		
2025-09-06	Saturday																		
2025-09-07	Sunday																		
2025-09-08	Monday													1.00			0.75		
2025-09-09	Tuesday													1.00			0.75		
2025-09-10	Wednesday													1.00			0.75		
2025-09-11	Thursday													1.00			0.75		
2025-09-12	Friday													1.00			0.75		
2025-09-13	Saturday																		
2025-09-14	Sunday																		
2025-09-15	Monday													1.00			0.75		
2025-09-16	Tuesday													2.50			0.75		
2025-09-17	Wednesday													2.50			0.75		
2025-09-18	Thursday													2.50			0.75		
2025-09-19	Friday													2.50			0.75		
2025-09-20	Saturday																		
2025-09-21	Sunday																		
2025-09-22	Monday													2.50			0.75		
2025-09-23	Tuesday													2.50			0.75		
2025-09-24	Wednesday													2.50			0.75		
2025-09-25	Thursday													2.50			0.75		
2025-09-26	Friday													2.50			0.75		

	Weekdays	delta2.pm	delta2(pf)	echo2.pm	echo2(pf)	foxtrot2.pm	foxtrot2(pf)	gamma2.pm	gamma2(pf)	golf2.pm	golf2(pf)	hotel2.pm	hotel2(pf)	tango2.pe	tango2(pm)	tango2(pf)	uniform2.pe	uniform2(pm)	uniform2(pf)
2026-02-20	Friday																	1.50	
2026-02-21	Saturday																		
2026-02-22	Sunday																		
2026-02-23	Monday																	1.50	
2026-02-24	Tuesday																	1.50	
2026-02-25	Wednesday																	1.50	
2026-02-26	Thursday																	1.50	
2026-02-27	Friday																	1.50	
2026-02-28	Saturday																		
2026-03-01	Sunday																		
2026-03-02	Monday																	1.50	

Show schedule as Streamlit table



Solver output at 28 January 2025, 13:56:59 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, 3e+03]
RHS [1e+01, Ge+02]
Presolving model
371 rows, 754 cols, 1294 nonzeros 0s
15 rows, 576 cols, 582 nonzeros 0s
13 rows, 474 cols, 478 nonzeros 0s
13 rows, 446 cols, 452 nonzeros 0s
```

```
Solving MIP model with:
13 rows
446 cols (66 binary, 380 integer, 0 implied int., 0 continuous)
452 nonzeros
MIP-Timing: 0.0068 - starting analytic centre calculation
```

