Integer Linear Optimization

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Sprint Planning

- Goal: maximise the amount of important features released
- Given: hour estimation for every feature/team member
- Given: max availability for every team member

Backlog

Feature	Points	Frontend (h)	Backend (h)	Design (h)
f1	3	5	3	2
f2	8	10	10	4
f3	13	0	25	0
f4	5	18	6	3
f5	1	8	6	12
f6	21	10	4	8
f7	13	2	10	4
f8	2	4	6	2

Team Availabilities

Frontend (h)	Backend (h)	Design (h)
40	35	40

Problem Definition

$$max. 3f_1 + 8f_2 + 13f_3 + 5f_4 + 1f_5 + 21f_6 + 13f_7 + 2f_8$$

$$s.t.$$

$$5f_1 + 10f_2 + 18f_4 + 8f_5 + 10f_6 + 2f_7 + 4f_8 \leq 40$$

$$3f_1 + 10fv2 + 25f_3 + 6f_4 + 6f_5 + 4f_6 + 10f_7 + 6f_8 \leq 30$$

$$2f_1 + 4f_2 + 3f_4 + 12f_5 + 8f_6 + 4f_7 + 2f_8 \leq 38$$

$$f_i \in \{0, 1\} \forall i \in [1..8]$$

Lets run the code

Solution

Feature	Story Points	Frontend (h)	Backend (h)	Design (h)
f2	8	10	10	4
f4	5	18	6	3
f6	21	10	4	8
f7	13	2	10	4
Total	**47**	**40**	**30**	**19**

Thank you