Optimization Model for Scrum Framework

Generated Model

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Contents

1 Sets (Entities)

- Projects
- Teams
- Workers
- Features
- Tasks
- Sprint Goals
- Blockers
- Stakeholders
- Release Plans

2 Indices

- i: Projects
- j: Teams
- k: Workers
- l: Features
- m: Tasks
- n: Sprint Goals
- o: Blockers
- p: Stakeholders
- q: Release Plans

3 Goals

- G0: Maximize Team Velocity - $\max \sum_j Velocity_j \cdot avg.\_story\_points_j$
- G1: Minimize Blocker Severity - $\min \sum_o Blocker_o \cdot severity_o$
- G2: Maximize Sprint Goal Achievement - $\max \sum_n SprintGoal_n \cdot achievement\_status_n$
- G3: Minimize Task Effort - $\min \sum_m Task_m \cdot effort_m$
- G10: Maximize Sprint Review Feedback - $\max \sum SprintReview \cdot feedback\_documentation$

4 Conditions

- C0: Ensure Project Timeline - $Project_i.project\_start < Project_i.project\_end$
- C1: Ensure Team Availability - $Team_j.team\_start \leq Project_i.project\_start$
- C2: Ensure Product Owner Management - $ProductOwner.id = ProductBacklog.id$
- C10: Ensure Release Planning - $ReleasePlan_q.included\_features \geq 1$

5 Decision Variables

- DV0: Team Assignment - $team\_assignment_{ij} \in \{0, 1\}$
- DV1: Task Allocation - $task\_allocation_{jm} \in \{0, 1\}$
- DV2: Sprint Duration - $sprint\_duration \in Z, 1 \leq sprint\_duration \leq 30$