A5 - Optimization

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PART I - Optimization of Pillars

**Objective Function**

Assuming that the simulation has no crashes, the objective function can be written as

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where is the number of agents who completed their task, is the set of results, and is the average time of the agents in result , as defined by:

Each result is represented as a set of pairs for each agent, where is the time elapsed (if available) of the agent, and is a binary integer indicating if the agent completed. If the agent did not complete, then the time elapsed is taken from the simulation settings. This distinction is made with the function:

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where , , and are constants provided in the simulation settings.