Optimization Problem

Primary Objective: To minimize the number of idle employees

Secondary Objective: To minimize wasted story points –story points, which represent the workload in Agile Methodology—.

- Balance Workload, and;
- Maximize Utilization

Constraints:

1. Each task is assigned to one employee
2. Each employee is work for one company at a time
3. Employee workload doesn't exceed the capacity –which is maximum 2 task/employee
4. Assigned task skill within a threshold of employee skill –when there is a task that is very difficult, then that task cannot be assigned to junior employees; it must be assigned to senior employees.

Write a Objective Function

First, let assume:

$$\boldsymbol{i} \rightarrow a\ task$$

$$\boldsymbol{j} \rightarrow an\ employee$$

$$\boldsymbol{X_{ij}} \rightarrow binary\ depiction\ of\ task\ assignments$$

$$\boldsymbol{s_i} \rightarrow story\ points\ of\ task\ \boldsymbol{i}$$

Then, the constraints can be converted into mathematical model:

$$\sum_{j}^{n} X_{ij} = 1\ \forall_i \ldots (1)$$

$$\sum_{i}^{m} X_{ij} \leq 2\ \forall_j \ldots (2)$$

How can I write a objective function?