2020 INFORMS Demo Formulation

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## 1 Data

### 1.1 Sets

* Let be the set of tasks that need to be completed.
* Let be the set of resources that can complete the tasks.
* Let be the set of tasks that resource can perform.

### 1.2 Data Inputs

* Let be the number of hours for a task .
* Let be the cost per hour for a resource .
* Let be the number of hours that a resource can work in one day.

### 1.3 Data Transformations

* Let be the cost for a resource performing a task .

## 2 Decision Variables

* Let be one if the resource is assigned to perform task , 0 otherwise.

## 3 Objective

The objective function for the model is to minimize the cost of assigning the resources to tasks.

## 4 Constraints

### 4.1 Ensure Each Resource Stays within their Allowed Hours

Each resource can only be assigned tasks whose total time must be no more than their maximum hours for a day.

### 4.2 Assign Each Task to only One Resource

Each task can only be assigned to be performed one task in the model.