Input parameters

Based on the information provided in the problem description, the input parameters for the truck-to-door assignment and scheduling problem can include:

1. Nt: Number of trucks.
2. Nd: Number of doors.
3. Ui: Estimated unloading time for each truck (an array or list of size Nt).
4. Fj: Expected earliest available time for each door (an array or list of size Nd).
5. fnj,0: Minimum earliest available time for each door (an array or list of size Nd).
6. snj,0: Indicates whether a door is currently busy (1) or available (0) (an array or list of size Nd).
7. tnj,0: Index number of the truck currently serviced at each door (an array or list of size Nd).

These parameters define the characteristics of the trucks and doors, such as their unloading times, availability, and current status. Assign appropriate values to these parameters based on your specific problem instance.

To calculate the expected earliest available time for each door based on the trucks' unloading times and the current status of the doors, you can use the following steps:

1. Determine the unloading time for each truck and the current status of each door.
2. For each door, calculate the expected earliest available time by considering the unloading times of the trucks currently being serviced at the door and the remaining unloading times of the trucks waiting in the queue.
3. If a door is currently free (not servicing any truck), the expected earliest available time for that door will be the maximum of the departure times of the trucks currently being serviced at other doors.
4. If a door is currently servicing a truck, the expected earliest available time for that door will be the maximum of the departure time of the currently serviced truck and the expected earliest available time for the door based on the unloading times of the trucks waiting in the queue.
5. Repeat this calculation for each door to determine the expected earliest available time for all doors.