Report for group project in INF5870

In this project our grou has made a series of programs to find the optimal way for a household to schedule their shiftable electrical appliances. A shiftable appliance is defined as an electrical appliance thatisn’t required to be switched on at specific points of the day. Such as charging of an electrical vehicle, a water heater or a laundry machine.

To do this, we have utilized the function scipy.optimize.linprog on a matrix containing all household appliances to find the optimal schedule with the following constraints:

The code takes into consideration what appliances exist in the house that are non-shiftable, wich means they cannot be rescheduled to another timeslot in the day. Like for instance the lights in a house needs to be on whenever people are home and it’s dark outside, or a refrigerator or freezer needs to be on all day. Each house has a limit to how much power the household can consume set by the main breaker switch.

The pricing scheme considered in all tasks is assumed to be set 24 hours in advance to make the assignment easier for ourselves. It is easier to assign timeslots for appliances when we know what the price will be at each hour of the day.

We also assume that each appliance needs to consume a certain amount of energy each day. Which may not necessary be true.