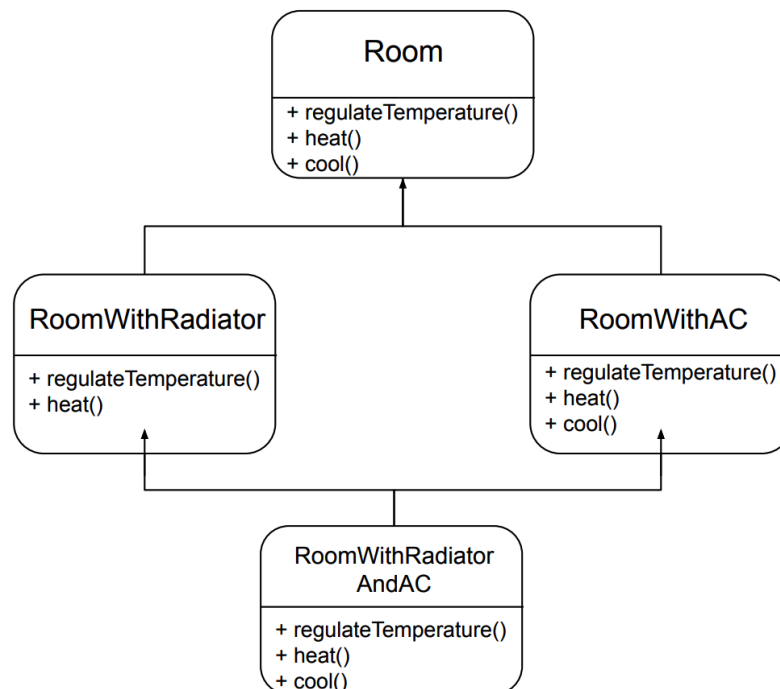


To begin with, I sketched a design that could serve as a starting point. It is worth noting that starting from this part of this assignment, radiators and air conditioners will be considered. Even though there are “cool only” air conditioners, for the purpose of this assignment, we assume air conditioners have both heating and cooling functions.

The design is shown in the graph below. However, it is not good coding practice for the following reasons:

- The implementation already has three hierarchies, which makes the code difficult to understand and maintain.
- The classes such as “RoomWithHeaterAndAC” are specific to solve this assignment. Therefore, they may not be easily reusable in other contexts.
- This design assigns heating and cooling to the “Room” classes. In my opinion, it is not the room’s responsibility to heat or to cool after all. These functions should be decoupled from the “Room” class.



As a result, this sketch helped me to analyse the requirements and constraints of the system to come up with a new design that addressed these issues. The improved design is presented in the subsequent commit.

This commit is only pushed to the master branch to explain my thought process and the reasoning behind the design in the subsequent commit. This design will not be implemented since it goes against good coding practice.