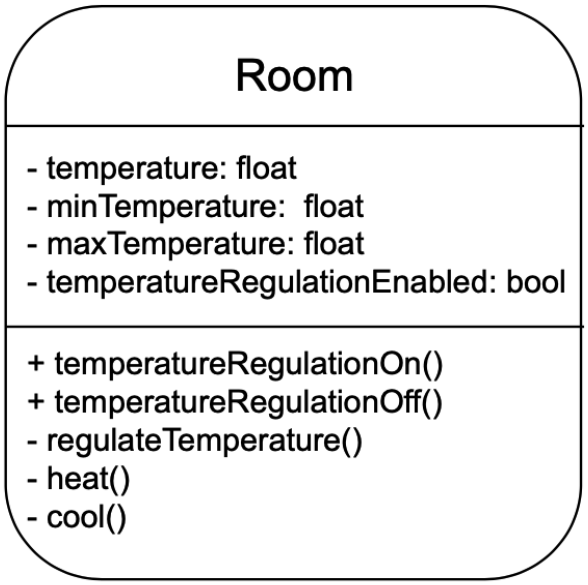
Normally before proceeding I will ask more questions to clarify the requirements. For example, in this case, I would ask whether the room temperature remains stable once the desired temperature is reached, which heater/cooler to use, and the intended use of the room. Based on the purpose of the room, I can try to identify the limits on the min and max desired temperatures.

However, since this is an interview assignment, I see it as an opportunity to showcase my problem-solving abilities by creating various scenarios that demonstrate my thought process.

To start with, I will consider the simplest scenario where the room temperature remains constant once the desired temperature is achieved, and the room only has the very basic heating and cooling functions.



The “Room” class should be “RoomWithTemperatureControl”. However, just for simplicity. “Room” is kept as the class name.