# Control Satisfaction Problem

## CS3612

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Constraint satisfaction problems (CSPs) are mathematical questions defined as a set of objects whose state must satisfy a number of constraints or/ limitations. If a problem is a control satisfaction problem then that problem needs to have three main properties.

- Variable – Store one value at one time
- Domain – Variable holding values
- Constraints – satisfy conditions when assigning value for the variable from the domain

Timetabling assignment problem also has mentioned three properties.

- Variables – subjects
- Domain – Time and Room
- Constraints
    - Only one of the available time slots for a specific subject can be assigned to that subject.
    - Each subject can only have one of the available time slots allocated to it.
    - If two subjects are given the same time slot, they cannot be put in the same room.

As a result, this issue is also a constraint satisfaction issue. The target test will be the final answer that contains time slots (received from each subject domain) for every topic and each time slot meets all requirements. Here, we can define the beginning state as an empty list (initially any class has not been assigned to a time slot).