

# Chemistry Laboratory

Prof. Jonathan Lee (李允中)

Department of Computer Science and  
Information Engineering  
National Taiwan University



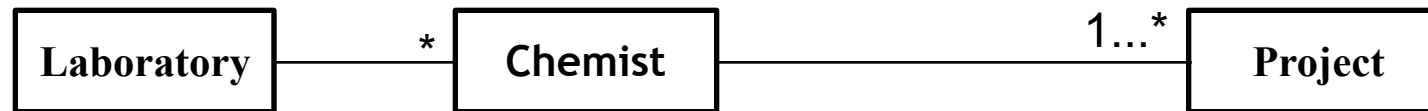
# Requirements Statements

- ☐ A laboratory has several chemists who work on one or more projects.
- ☐ Chemists also may use certain kinds of equipment on each project.
- ☐ The organization wishes to record assignDate - that is, the date when a given equipment item was assigned to a particular chemist working on a specified project - as well as total Hours, that is, the total number of hours the chemist has used the equipment for the project.
- ☐ The organization also wants to track the usage of each type of equipment by a chemist. It does so by computing the average number of hours the chemist has used that equipment on all assigned projects.
- ☐ A chemist must be assigned to at least one project and one equipment item. A given equipment item need not be assigned, and a given project need not be assigned to either a chemist or an equipment item.



# Requirements Statement1

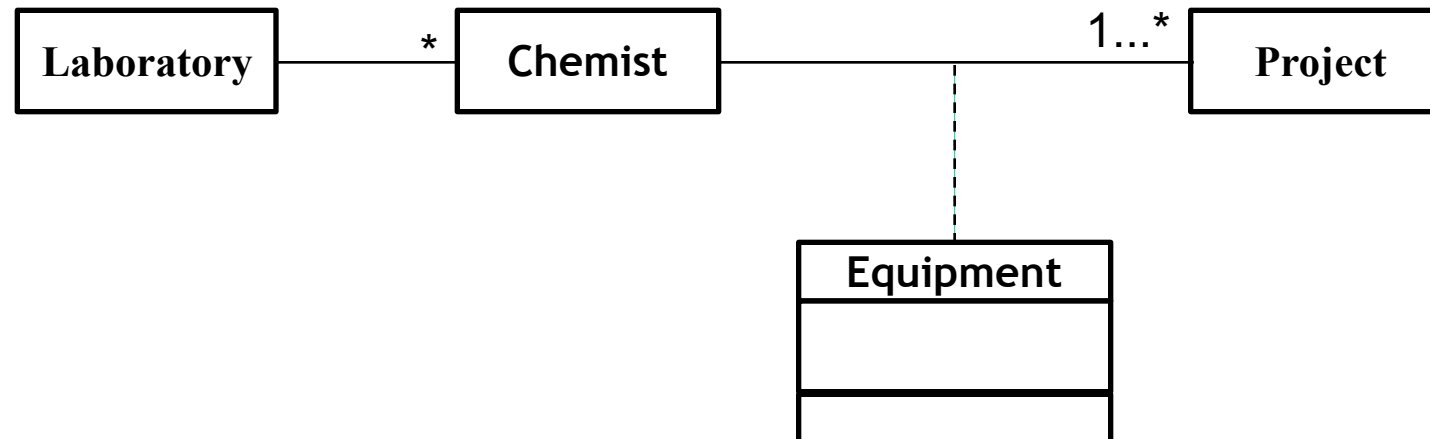
- ❑ A laboratory has several chemists who work on one or more projects.





# Requirements Statement2

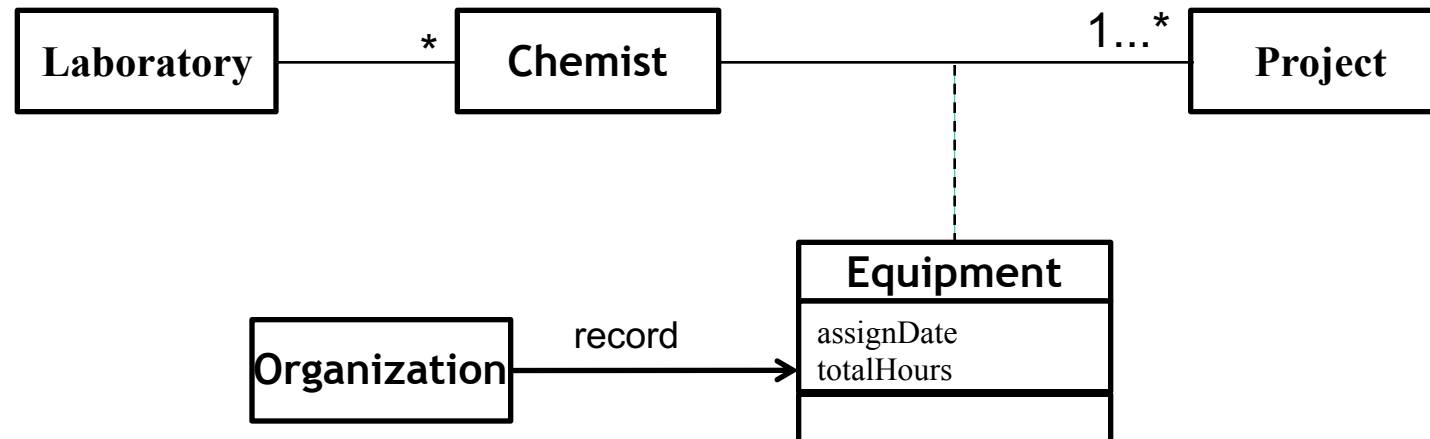
- ❑ Chemists also may use certain kinds of equipment on each project.





# Requirements Statement3

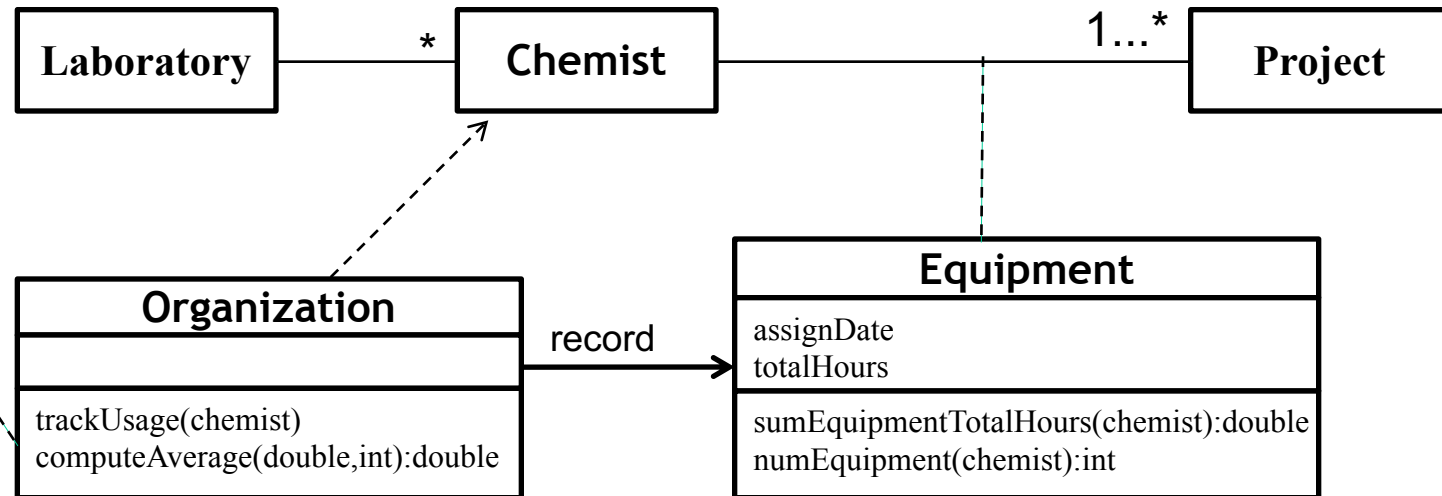
- ❑ The organization wishes to record assignDate - that is, the date when a given equipment item was assigned to a particular chemist working on a specified project - as well as total Hours, that is, the total number of hours the chemist has used the equipment for the project.



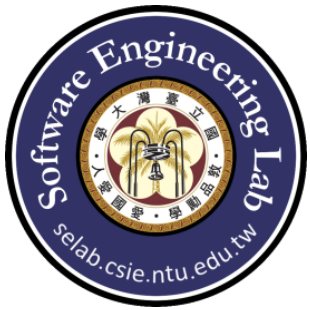


# Requirements Statement4

- ❑ The organization also wants to track the usage of each type of equipment by a chemist. It does so by computing the average number of hours the chemist has used that equipment on all assigned projects.

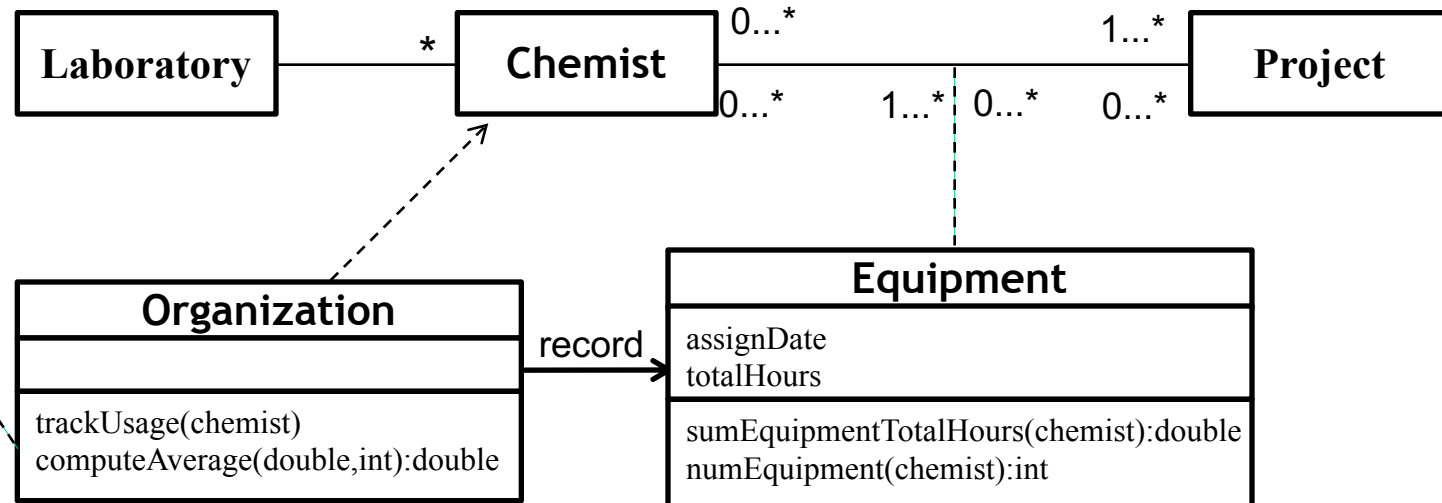


```
trackUsage(chemist):
    sum=equipment.sumEquipmenttotalHours(chemist)
    num = equipment.numEquipment(chemist)
    averageHour = computeAverage(sum,num)
    computeAverage(double sum,int num):
    return sum/num
```



# Requirements Statement5

- ❑ A chemist must be assigned to at least one project and one equipment item. A given equipment item need not be assigned, and a given project need not be assigned to either a chemist or an equipment item.



```
trackUsage(chemist):
    sum=equipment.sumEquipmentTotalHours(chemist)
    num = equipment.numEquipment(chemist)
    averageHour = computeAverage(sum,num)
    computeAverage(double sum,int num):
    return sum/num
```

# Sequence Diagram

