

Chapter 6: Class Based Model

6.1 Class Based Modeling Concept

Class-based modeling represents the objects that the system will manipulate, the operations that will be applied to the objects, relationships between the objects and the collaborations that occur between the classes that are defined.

6.2 Identifying Analysis Classes

Analysis classes can be identified by parsing noun and noun phrases. Then they need to be classified by general classification and selection criteria.

General classification:

1. External entities
2. Things
3. Occurrence or events
4. Roles
5. Organizational units
6. Places
7. Structures

Selection criteria:

1. Retained information
2. Needed services
3. Multiple attributes
4. Common attributes
5. Common operations
6. Essential requirements

Potential Classes	General classification	Selection Criteria	Accepted/Rejected
User	Roles	2, 3, 4, 5, 6	Accepted
Students	External entities	1, 3, 4, 6	Accepted
Seat plan	Things	1, 2, 3, 5, 6	Accepted
Email			Rejected
Password			Rejected
Roll number			Rejected
Room	Organizational unit	1, 3, 4, 6	Accepted
Teachers	External entity	1, 6	Rejected

6.2.1 Accepted Classes:

- User
- Students
- Room
- Seat plan generator

6.2.2 Attribute identification:

Class Name	Attributes
User	Email Password
Students	Number of students Roll number Email
Room	Room number Room size Dummy seat
Seat plan	Students Room Teacher'sList

6.2.3 Method Identification:

Verb Identification:

Verb	Remark
Register	Yes
Verify	Yes
Log in	Yes
GenerateSeatPlan	Yes
Take	Out of scope
Randomize	Yes

Mention	Out of scope
Modify	Out of scope
Send	Out of scope

Methods:

Class Name	Methods
User	setEmail() setPassword() register() verify() login() seatPlan()
Students	setNumbreOfStudents() getNumberOfStudents() setEmail() getEmail() setRoll() getRoll()
Room	setRoomNumber() getRoomNumber() setRoomSize() getRoomSize() setDummySeat() getUummySeat()
SeatPlan	getStudents() getRoom() generateTeachersList() randomizeRoll() generateSeatPlan()

6.2.4 Class Cards:

User	
Email	setEmail()
Password	setPassword()
Verification code	register()
	verify()
	login()
	seatPlan()

Students		
Number	of	setNumbreOfStudents()
students		getNumberOfStudents()
		setEmail()
Roll number		getEmail()
		setRoll()
Email		getRoll()

Room	
Room number	setRoomNumber()
	getRoomNumber()
Room size	setRoomSize()
	getRoomSize()
Dummy seat	setDummySeat()
	getUummySeat()

SeatPlan	
Students	getStudents()
Room	getRoom()
Teachers	generateTeachersList()
	randomizeRoll()
	generateSeatPlan()

6.3 Class Responsibility Collaboration (CRC) Diagram

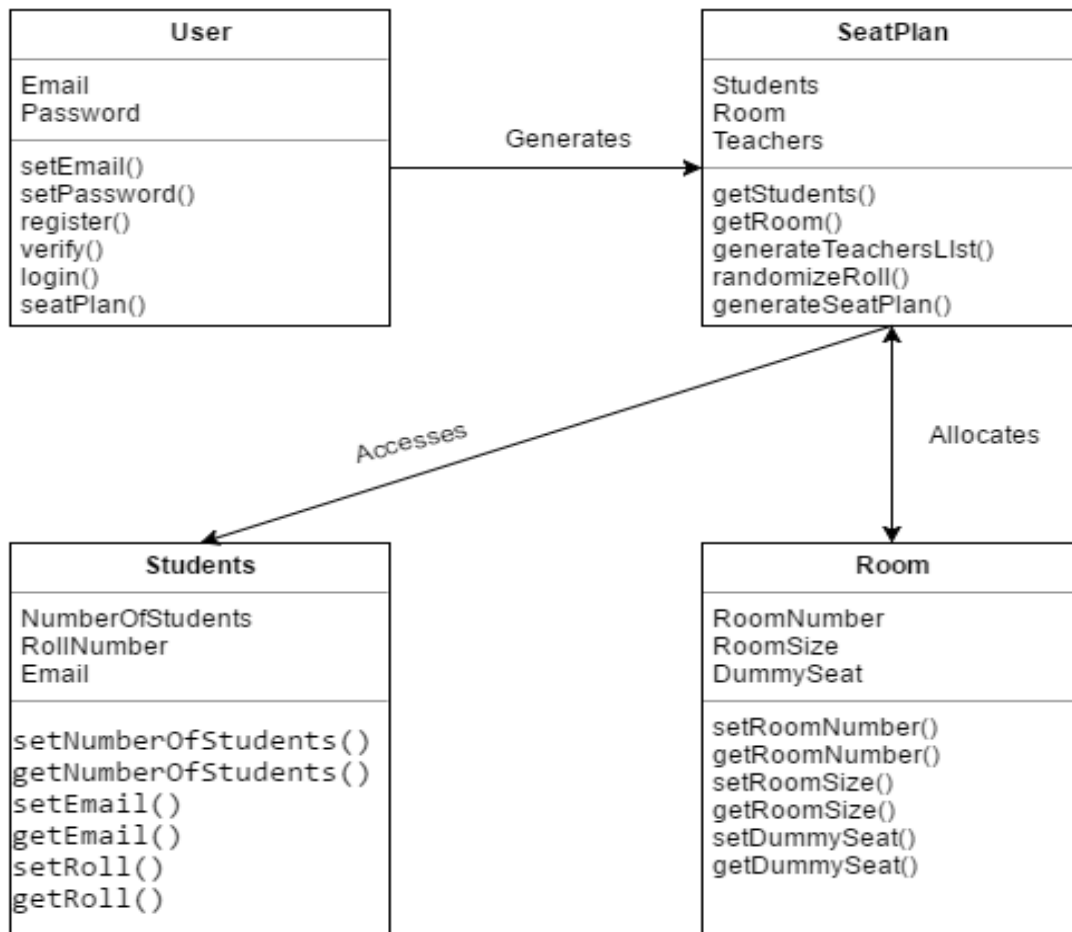


Figure 6.1: CRC Diagram