

Creating Class Diagrams from Use-Cases

Examples from the
'BUET course
registration,
coursework, exam and
result processing system'

Selected Use Cases

- Register
- Assign Teacher
- Prepare
Gradesheet

Register: typical course of

Events		System Response
Actor Action (Student)	Actor Action (Adviser)	
1. None		2. Ask for Student Id, Password
3. Provide Id, Password		4. Show List of unfinished courses
5. Select a course		6. Get Pre-requisite list for that course
		7. Check results of those courses
		8. If not passed, then give message to student and deselect the course Otherwise, do nothing
9. Finalize selection		10. Check total credit hour
		11. If ok, then proceed to next step otherwise, give a message requesting the student to revise his selection
		12. Notify Adviser
	13. Ask for details	14. Show details
	15. Authorize	16. Update state
		17. update registration information for selected courses and show confirmation message, Print course card

Register: Nouns

Actor Action (Student)	Actor Action (Adviser)	System Response
1. None		2. Ask for Student Id, Password
3. Provide Id, Password		4. Show List of unfinished courses
5. Select a course		6. Get Pre-requisite list for that course
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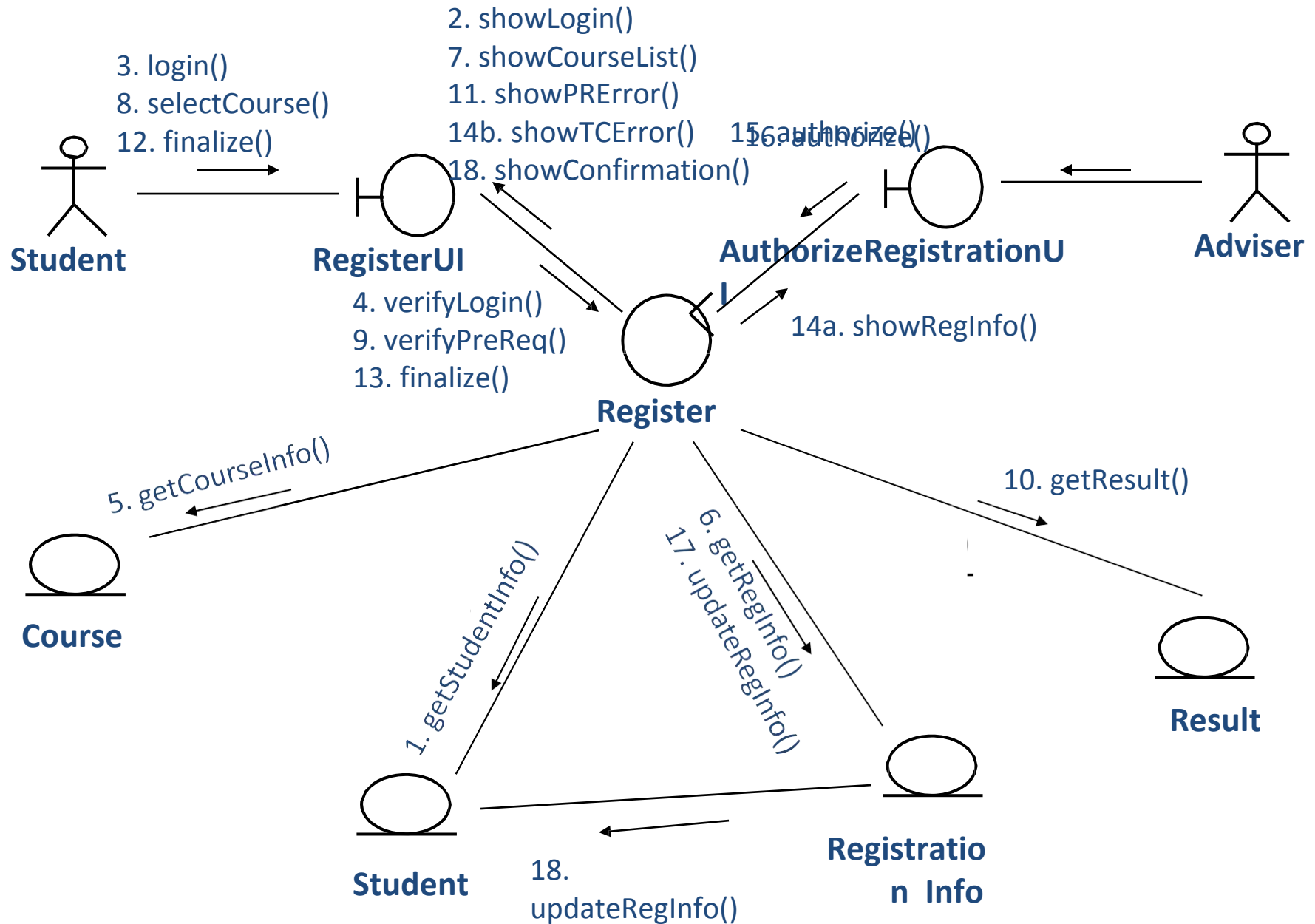
Register: Nouns identified

Actor Action (Student)	Actor Action (Adviser)	System Response
1. None		2. Ask for Student Id, Password
3. Provide Id, Password		4. Show List of unfinished courses
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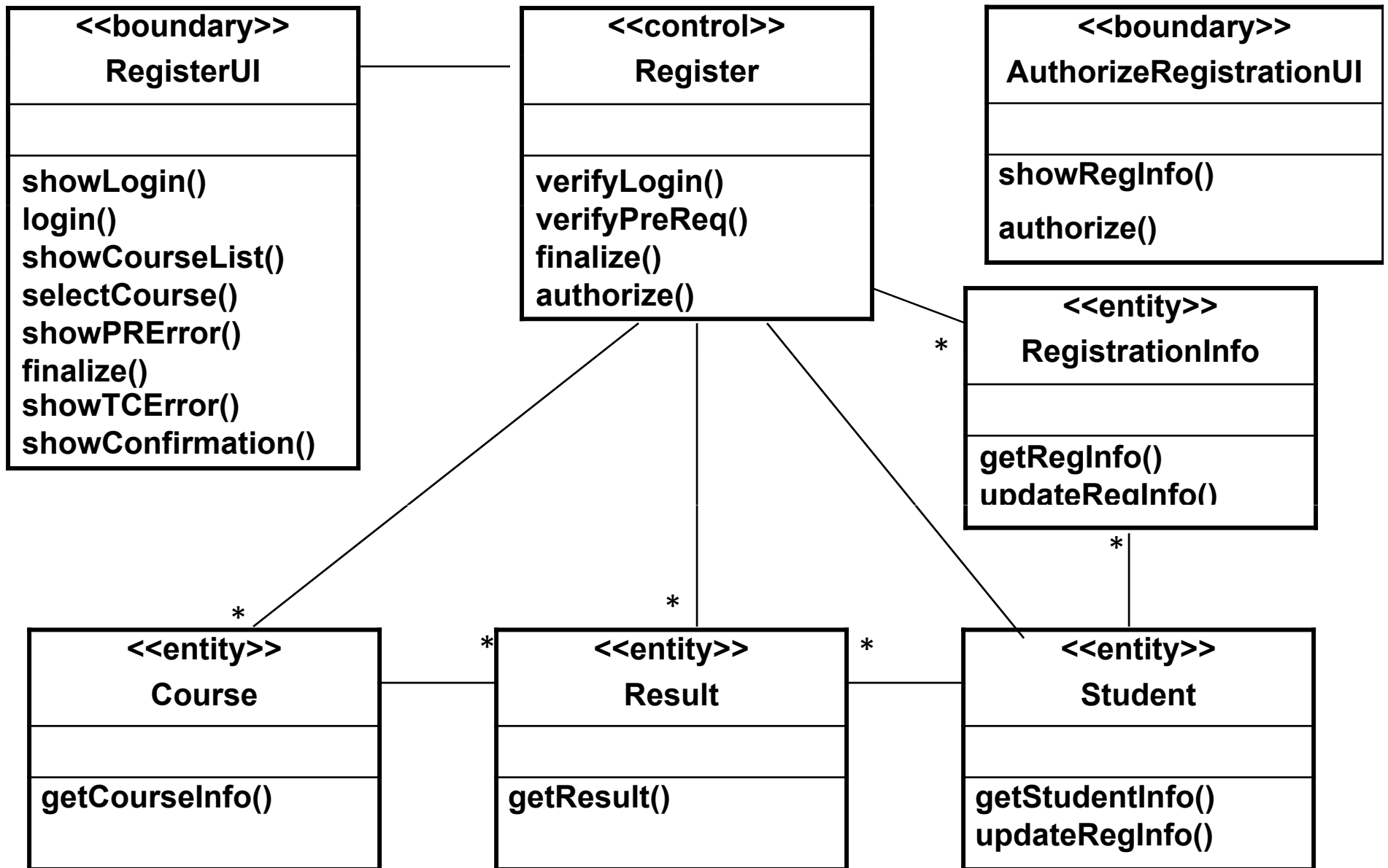
Register: Entity Classes

- Course
- Student
- Result
- RegistrationInfo

Register: Collaboration Diagram



Register: Class Diagram



Assign Teacher

- Divide into two extensions
 - Give choice
 - Resolve choice

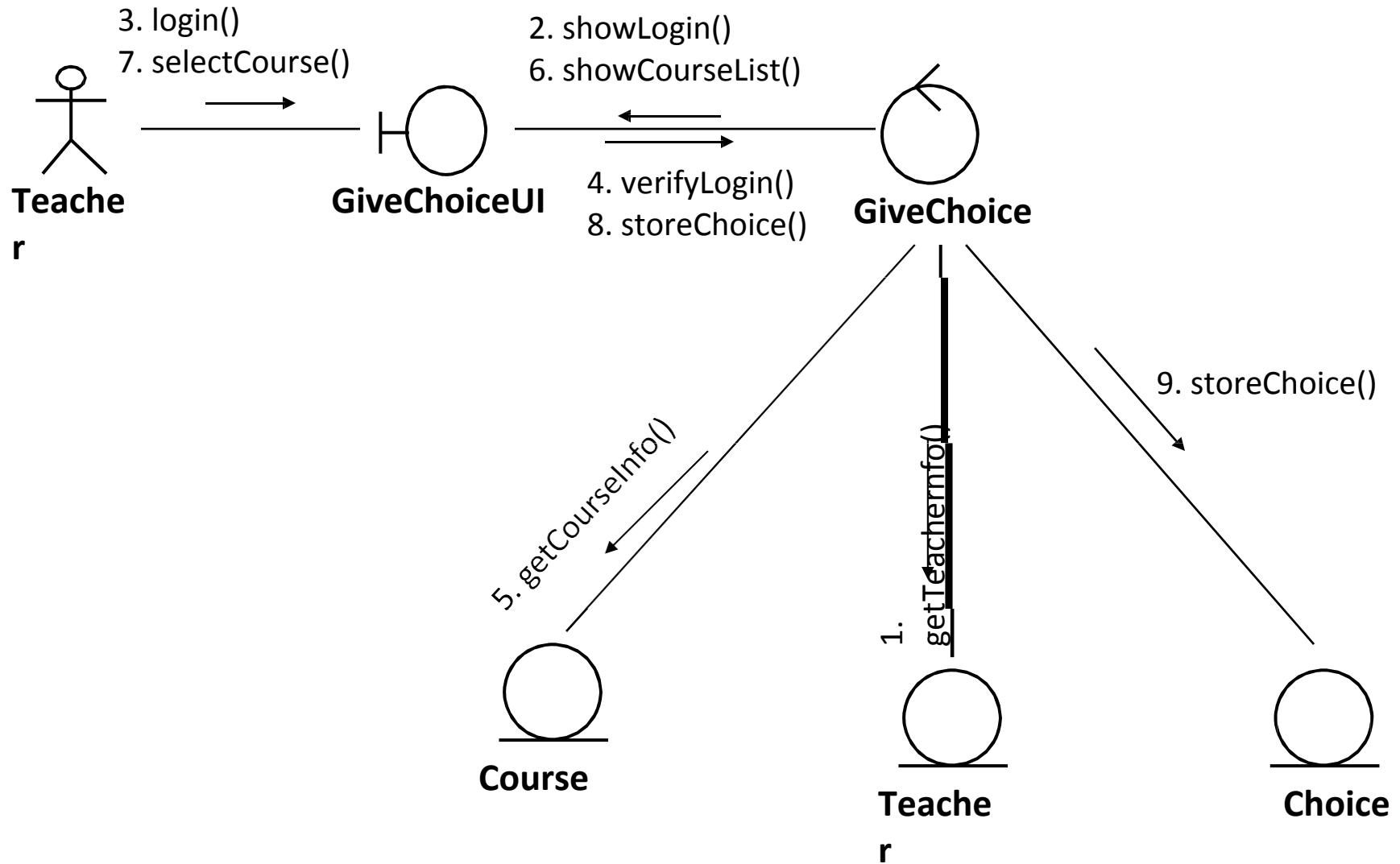
Give Choice: typical Course of events

Actor Action System Response (Teacher)	
1. None	2. Ask for TeacherId, Password
3. Provide Id, Password	4. Show List of courses
5. Select 4 courses in order of preference	6. Store choices
	7. Show List of sessionals
8. Select 4 sessionals in order of preference	
	9. Store Choices

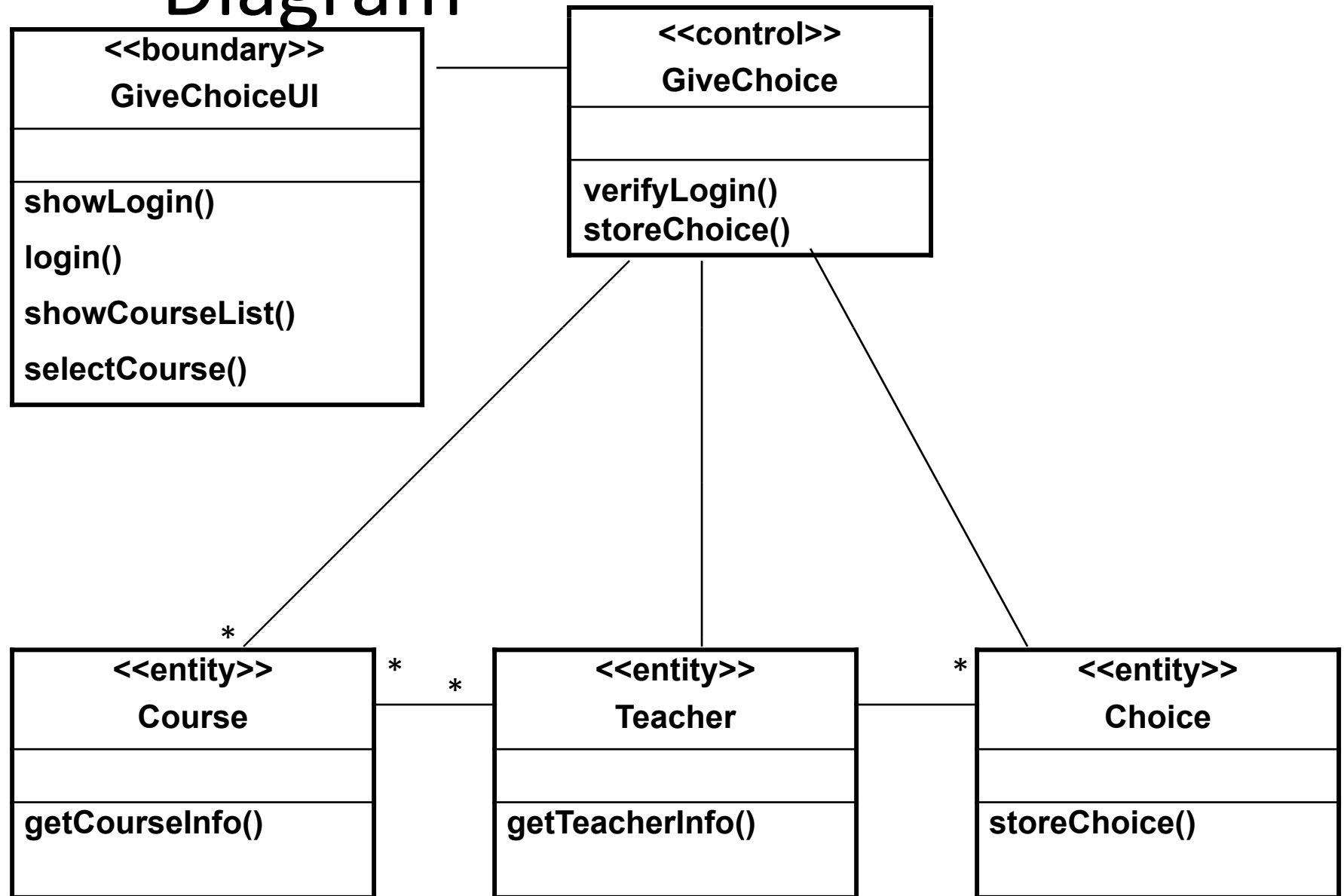
Give Choice: Entities

- Teacher
- Course
- Choice

Give Choice: Collaboration Diagram



Give Choice: Class Diagram



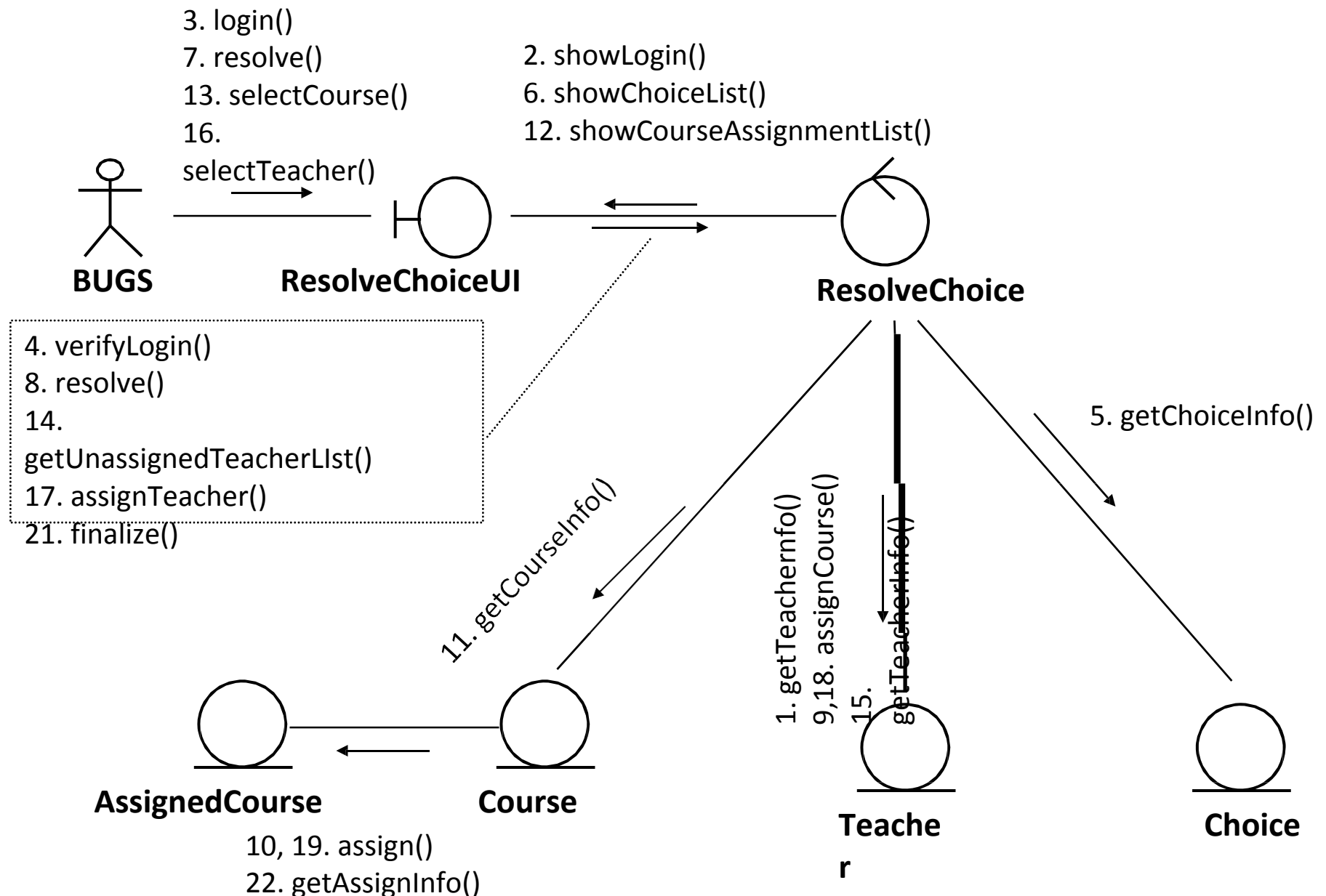
Resolve Choice

Actor (BUGS)	System Response
1. None	2. Ask for HeadId, Password
3. Provide HeadId, Password	4. Show list of teachers who has given a choice
5. Ask system to assign teachers to courses	
	6. Get teacher choices and teacher info
	7. Assign courses
	8. Show course list along with assigned teachers. Highlight courses that has no teacher assigned
9. Select an unassigned course	10. Show list of available teachers
11. Assign a teacher	12. Update assigned course list
13. Finalize	14. Send separate notification to all teachers about their courselist.

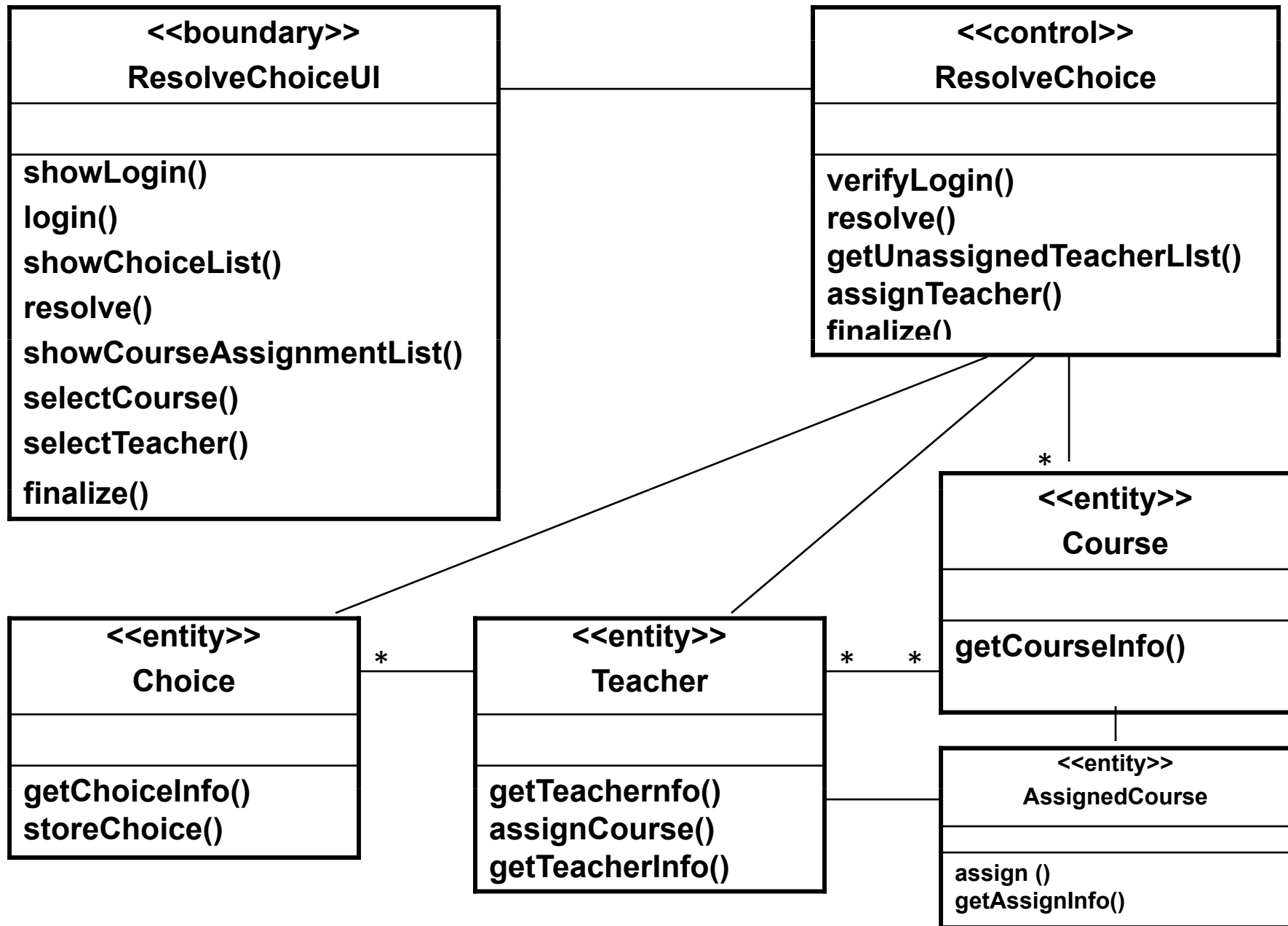
Resolve Choice: Entities

- Teacher
- Course
- Choice
- AssignedCourse

Resolve Choice: Collaboration Diagram



Resolve Choice: Class Diagram



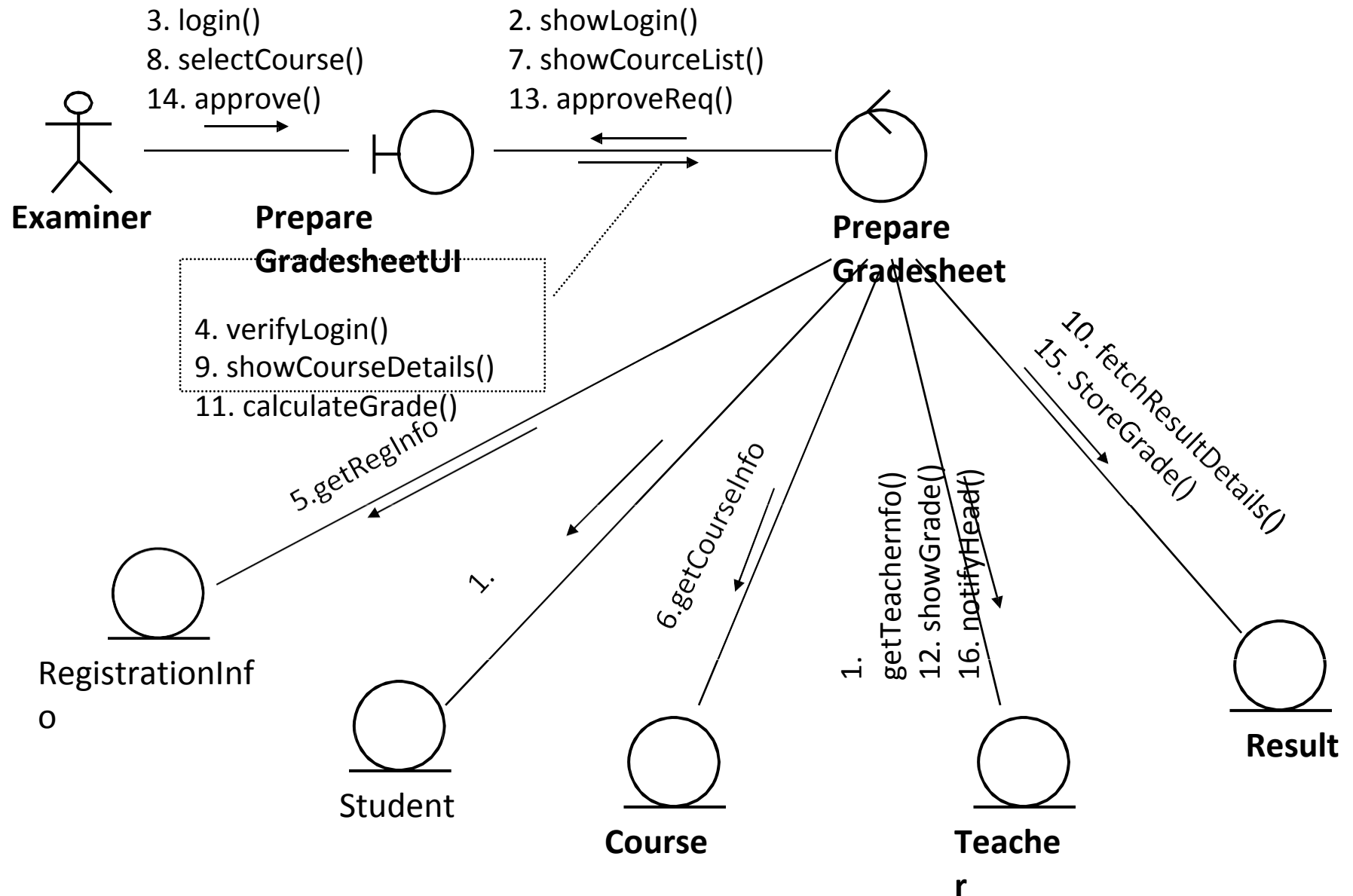
Prepare Gradesheet

Actor Action (Examiner)	System Response
1. None	2. Ask for TeacherId, Password
3. Provide TeacherId, Password	4. Show list of courses
5. Select a course	6. Show course details like number of students, number of class tests taken, name of internal and external examiner etc.
7. Ask the system to calculate the grades	8. Fetch result (attendance info, class test marks, section A and B marks etc.)
	9. calculate grades
	10. show grades and calculation details
11. Approve	12. Store
	13. Notify Head

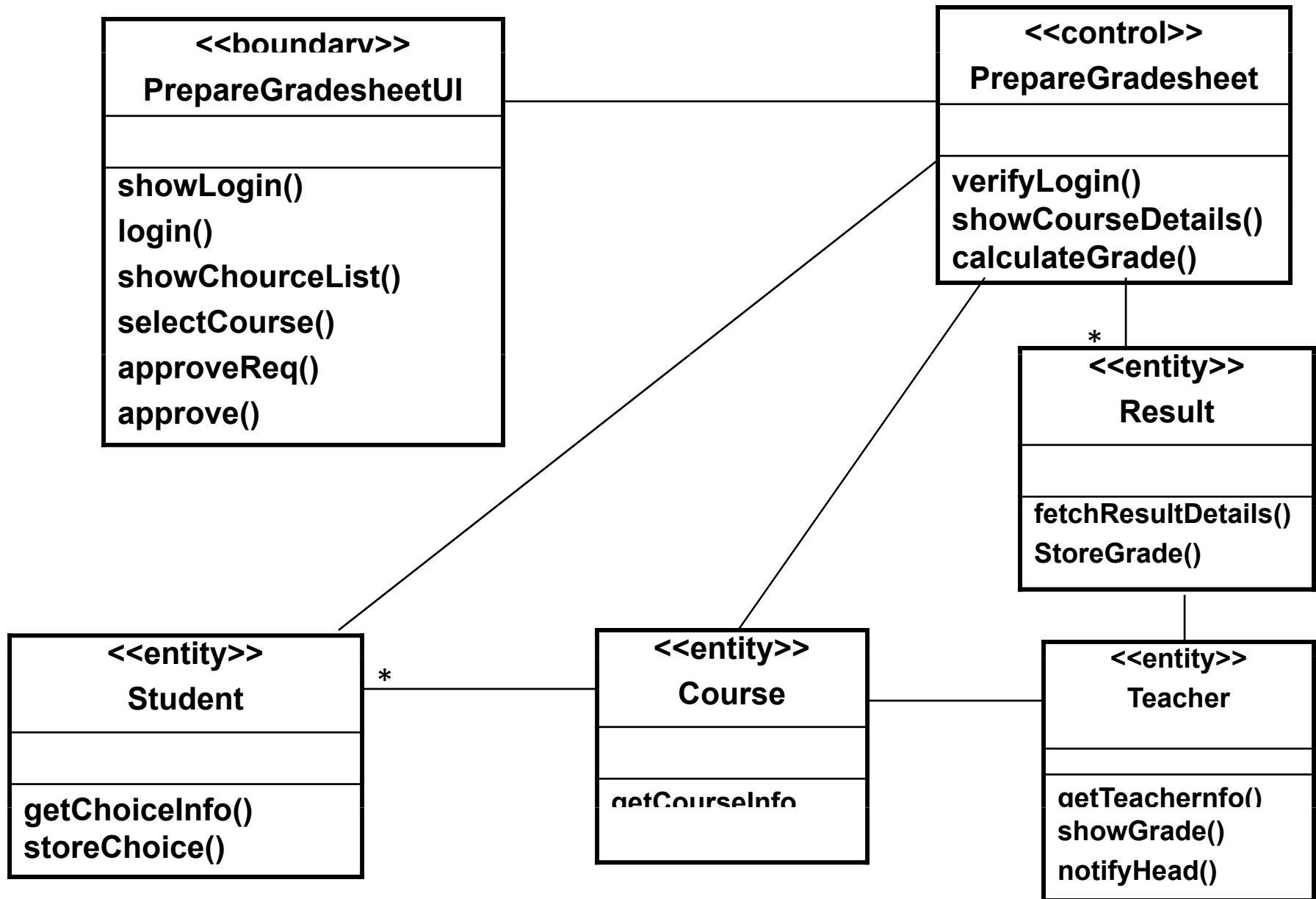
Prepare Gradesheet: Entities

- Teacher
- Course
- Student
- RegistrationInfo
- Result

Prepare Gradesheet: Collaboration



Prepare Gradesheet: Class Diagram



Thank You