

# 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

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

# Register: Nouns identified

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

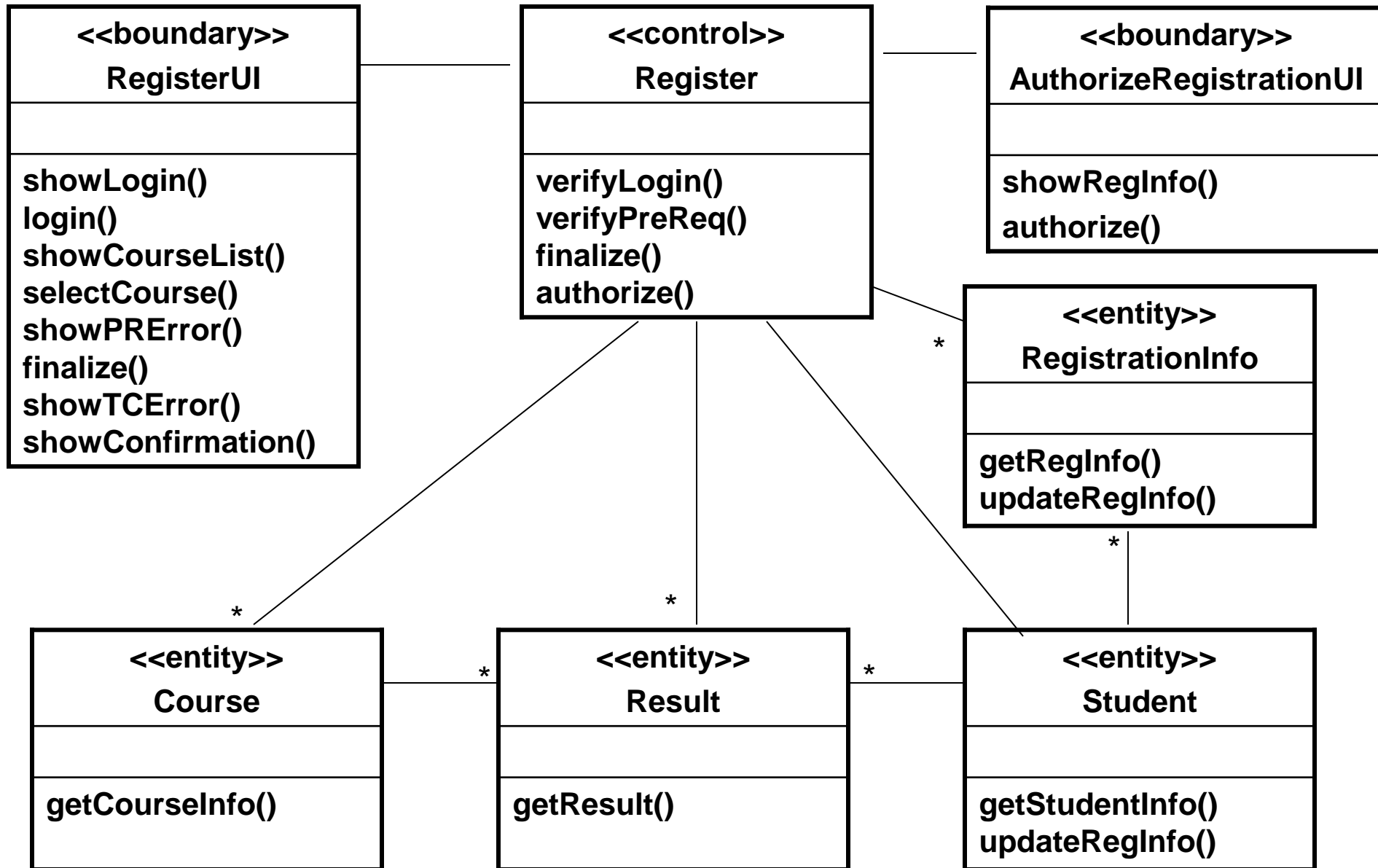
# Register: Nouns refined

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 <b>courses</b>
5. Select a course		6. Get Pre-requisite list for that course
		7. Check <b>results</b> of those courses
		8. If not passed, then give message to <b>student</b> 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 <b>registration information</b> for selected courses and show confirmation message, Print course card

# Register: Entity Classes

- Course
- Student
- Result
- RegistrationInfo

# Register: Class Diagram



# Assign Teacher

- Divide into two extensions
  - Give choice
  - Resolve choice



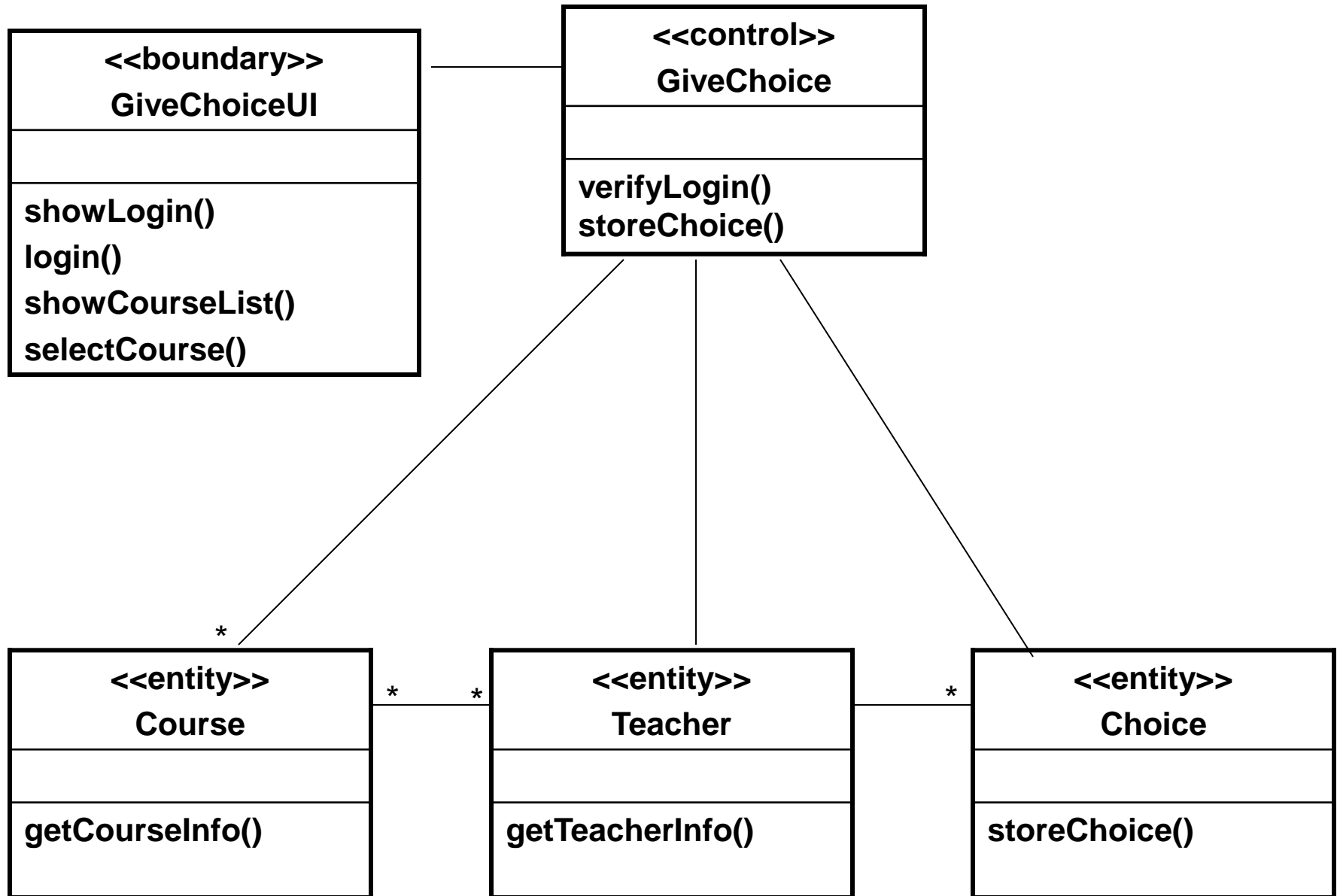
# Give Choice: typical Course of events

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

# Give Choice: Entities

- Teacher
- Course
- Choice

# Give Chioce: Class Diagram



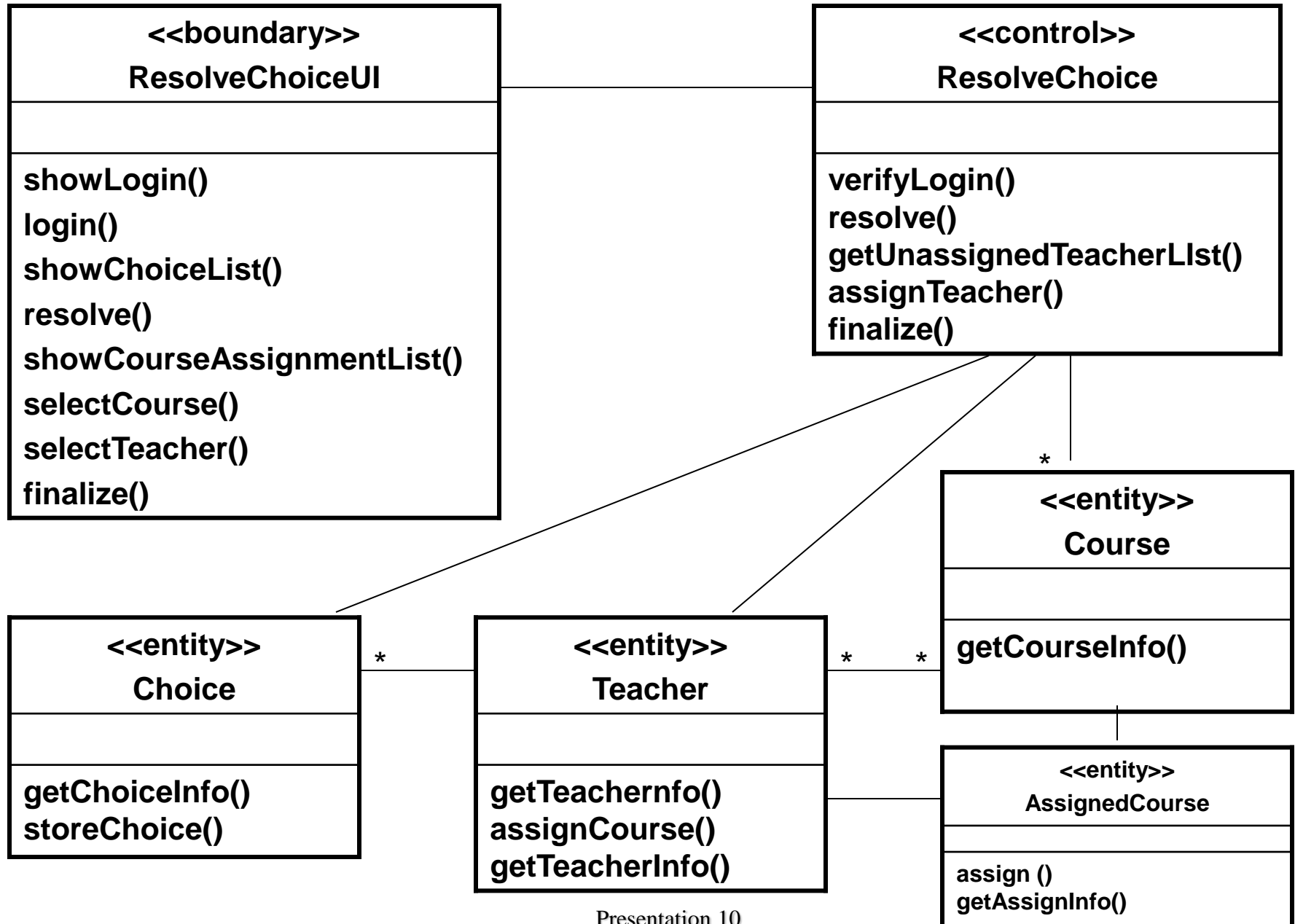
# Resolve Choice

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

# Resolve Choice: Entities

- Teacher
- Course
- Choice
- AssignedCourse

# Resolve Choice: Class Diagram



# Prepare Gradesheet

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

# Prepare Gradesheet: Entities

- Teacher
- Course
- Student
- RegistrationInfo
- Result