Case Study:
UAMS
Domain Model Solution

Identify the Classes

Academic branch offers different programs within different departments each program has a degree title and duration of degree.

Student Apply for admission in University and provides his/her name, age, FSC, and Ecat Marks and selects any number of preferences among the available programs.

Admission department prepares a merit list according to the highest merit and available seats and registers selected students in the program.

Academic Branch also add subjects for each program. A subject have subject code, credit hours, subjectType, and subjectFee A Program cannot have more than 20 Credit hour subjects. A Student Registers multiple subjects but only from his enrolled program's subject but he/she can not take more than 9 credit hours.

Fee department generate fees according to registered subjects of the students.

Step 1: Identify the Classes which have attributes

Academic branch offers different programs within different departments each program has a degree title and duration of degree.

Student Apply for admission in University and provides his/her name, age, FSC, and Ecat Marks and selects any number of preferences among the available programs.

Admission department prepares a merit list according to the highest merit and available seats and registers selected students in the program.

Academic Branch also add subjects for each program. A subject have subject code, credit hours, subjectType, and subjectFee. A Program cannot have more than 20 Credit hour subjects.A Student Registers multiple subjects but only from his enrolled program's subject but he/she can not take more than 9 credit hours.

Fee department generate fees according to registered subjects of the students.
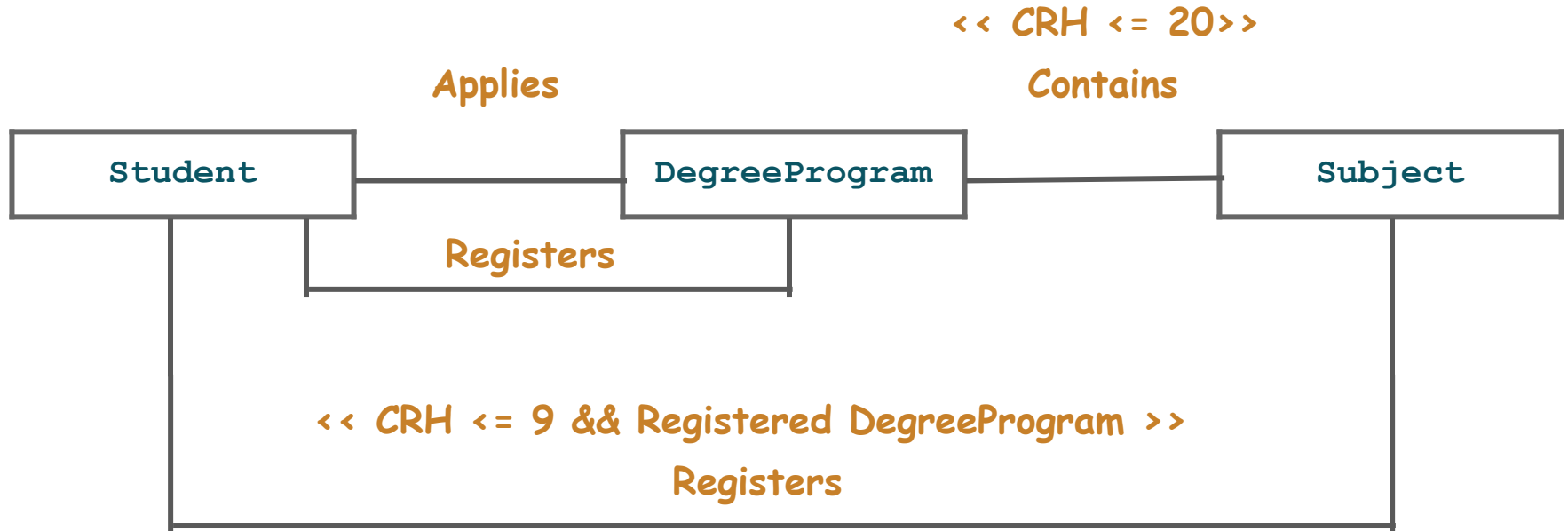
# Step 2: Draw Domain Model: Write Classes name only

Student

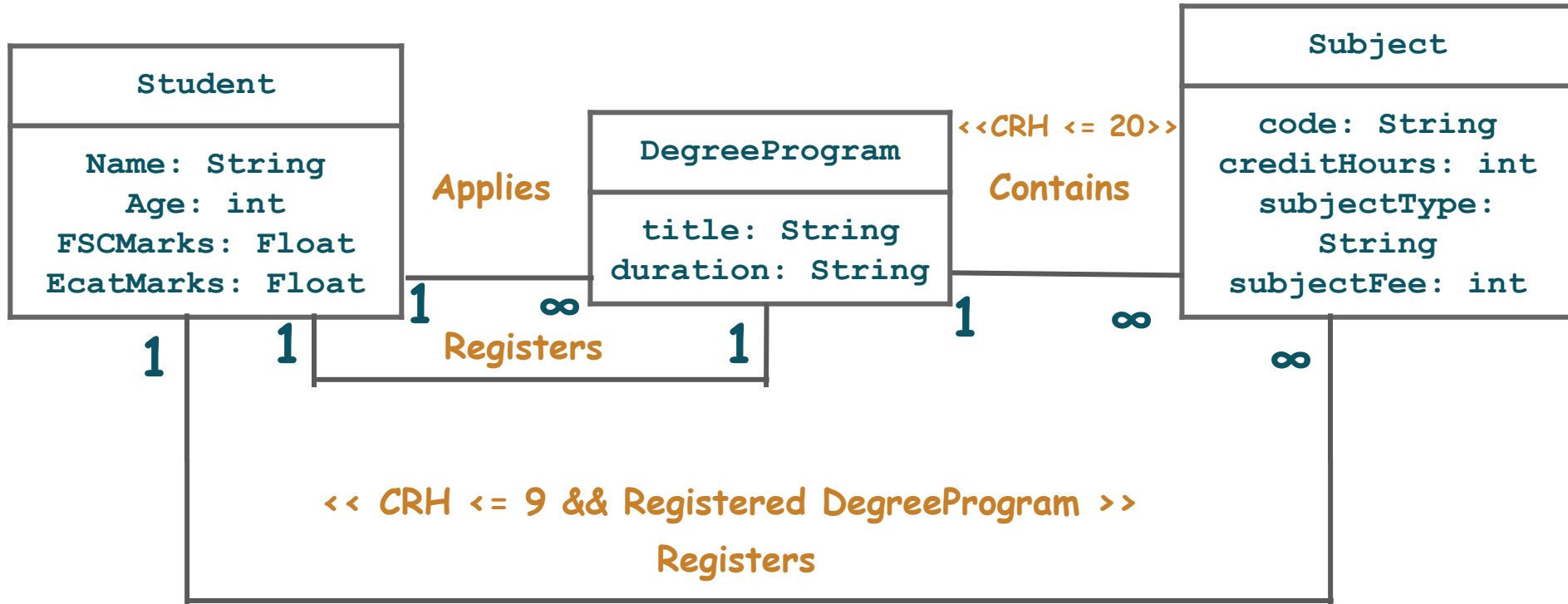| DegreeProgram |
|---|

Subject

Step 3: Draw Domain Model: Add Relations and Constraints

<< CRH <= 20>>

Applies   Contains

| Student | | DegreeProgram | | Subject |

Registers

<< CRH <= 9 && Registered DegreeProgram >>

Registers

Step 4: Draw Domain Model: Add Multiplicity

<< CRH <= 20>>

Contains

Applies

Student		DegreeProgram		Subject

1   ∞

Registers

1   1

1   ∞

1

1

∞

<< CRH <= 9 && Registered DegreeProgram >>
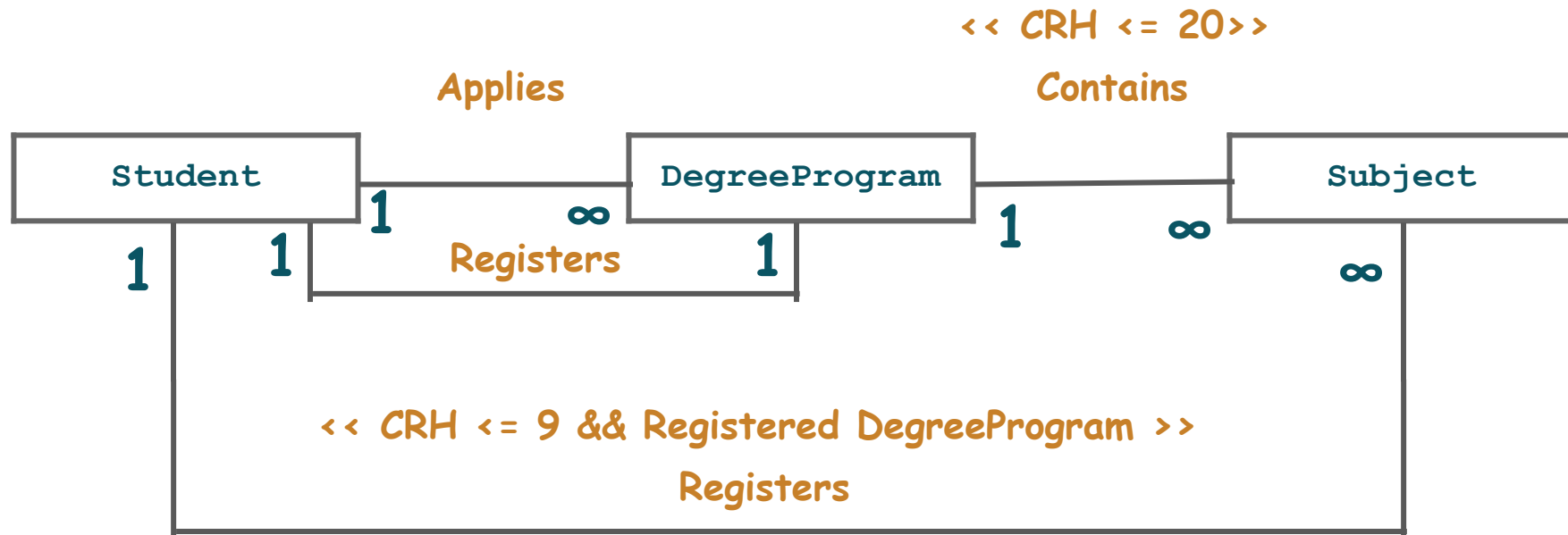
Registers

Step 6: Draw Class Diagram: Add Functions

Add the functions that you think are appropriate.

Step 7: Convert Class Diagram to Code

WireFrames: Main Menu

```
******************************************
                   UAMS
******************************************
1. Add Student
2. Add Degree Program
3. Generate Merit
4. View Registered Students
5. View Students of a Specific Program
6. Register Subjects for a Specific Student
7. Calculate Fees for all Registered Students
8. Exit
Enter Option:
```

WireFrames: Option 2: Degree Program

```
Enter Degree Name: CE
Enter Degree Duration: 4
Enter Seats for Degree: 1
Enter How many Subjects to Enter: 1
Enter Subject Code: 162
Enter Subject Type: OOP
Enter Subject Credit Hours: 3
Enter Subject Fees: 8000
Press any key to Continue..
```

WireFrames: Option 1: Add Student

```
Enter Student Name: AAA
Enter Student Age: 12
Enter Student FSc Marks: 1000
Enter Student Ecat Marks: 390
Available Degree Programs
CS
Enter how many preferences to Enter: 1
CS
Press any key to Continue..
```

WireFrames: Option 3: Generate Merit

```
AAA got Admission in CS
BBB did not get Admission
CCC got Admission in CE
DDD did not get Admission
Press any key to Continue..
```

WireFrames: Option 4: Registered Student

```
Name        FSC         Ecat        Age
AAA         1000        390         12
CCC         999         380         15
Press any key to Continue..
```

WireFrames: Option 5: Specific Degree

```
Enter Degree Name: CS
Name       FSC        Ecat       Age
AAA        1000       390        12
Press any key to Continue..
```

WireFrames: Option 6: Register Subject

Ask the Student name and then ask for the subject code.
If the conditions are satisfied then student's subject should be registered.

WireFrames: Option 7: Generate Fee

Fees should be generated for all the registered students