# 

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IT 315 – 21EW3

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# IT 315 Final Project Part II Solution Submission

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1. Using this class responsibility collaboration (CRC) card template, document each class you identified from your student information system (SIS) functional model.

**CRC Card 1:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Student | ID:  1 | | Type:  Concrete |
| Description:  Student attending classes that can login and register for classes. | | | Associated Use Cases:  2,6 |
| Responsibilities:  Register for classes | | Collaborators:  Classes | |
| Back: | | | |
| Attributes:  User Login Information (string)  Student ID (int)  Student Information (string) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  User  Person  Aggregation (has-parts):  N/A  Other Associations:  Classes | | | |

**CRC Card 2:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Employee | ID:  2 | | Type:  Concrete |
| Description:  A user that has permissions to maintain the course and class records. | | | Associated Use Cases:  3,4,5,6,7 |
| Responsibilities:  Create courses and classes  Read courses and classes  Update courses and classes  Delete courses and classes | | Collaborators:  Courses  Classes | |
| Back: | | | |
| Attributes:  User Login Information (string)  Employee ID (int)  Employee Information (string) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  User  Person  Aggregation (has-parts):  CRUD permissions to classes and courses  Other Associations:  Classes and courses | | | |

**CRC Card 3:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Course Records | ID:  3 | | Type:  Concrete |
| Description:  Course records that are updated with the available courses by employees. | | | Associated Use Cases: |
| Responsibilities:  Create/add courses  Read courses  Update courses  Delete courses | | Collaborators:  Employees  Courses | |
| Back: | | | |
| Attributes:  Course ID (int)  Course name (string)  Credit hours (int)  Description (string)  Prerequisite course (string) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  Course  Aggregation (has-parts):  CRUD permissions to courses  Other Associations:  Employee access | | | |

**CRC Card 4:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Class Records | ID:  4 | | Type:  Concrete |
| Description:  Class records that are maintained by employees. | | | Associated Use Cases:  2,3,6,7,8 |
| Responsibilities:  Create/add classes  Read classes  Update classes  Delete classes | | Collaborators:  Employees  Classes | |
| Back: | | | |
| Attributes:  Course ID (int)  Class begin date (int)  Class end date (int) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  Class  Aggregation (has-parts):  CRUD permissions to classes  Online classes  Face-to-face classes  Other Associations:  Employee access | | | |

**CRC Card 5:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Student Records | ID:  5 | | Type:  Concrete |
| Description:  Employees maintain student records and will change or delete any records that need to be updated. | | | Associated Use Cases:  1,2 |
| Responsibilities:  Create/add student records  Read student records  Update student records  Delete student records | | Collaborators:  Employees | |
| Back: | | | |
| Attributes:  First name (string)  Middle initials (string)  Last name (string)  Date of birth (int)  Student ID (int)  Department (string)  Cumulative GPA (int) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  Student information  Aggregation (has-parts):  Student  Other Associations:  Employee | | | |

**CRC Card 6:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Register Student Classes | ID:  6 | | Type:  Concrete |
| Description:  Student attending classes that can login and register for classes. | | | Associated Use Cases:  1,2,3,4,5,7,8 |
| Responsibilities:  Register for classes | | Collaborators:  Employees  Students | |
| Back: | | | |
| Attributes:  Student ID (int)  Course ID (int) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  Class  Aggregation (has-parts):  CRUD permissions to classes and courses  Other Associations:  Course, Class | | | |

**CRC Card 7:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Online Classes | ID:  7 | | Type:  Concrete |
| Description:  Student attending classes and employees can login to register for classes. | | | Associated Use Cases:  1,2,3,4,5,6 |
| Responsibilities:  Create/add online classes  Read online classes  Update online classes  Delete online classes | | Collaborators:  Employee  Student | |
| Back: | | | |
| Attributes:  Class URL (string)  Class browser (string) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  Class  Aggregation (has-parts):  N/A  Other Associations:  Employee | | | |

**CRC Card 8:**

|  |  |  |  |
| --- | --- | --- | --- |
| Front: | | | |
| Class Name:  Face-To-Face Classes | ID:  8 | | Type:  Concrete |
| Description:  Classes that are on campus in a classroom. | | | Associated Use Cases:  1,2,3,4,5,6,7 |
| Responsibilities:  Create/add face-to-face classes  Read face-to-face classes  Update face-to-face classes  Delete face-to-face classes | | Collaborators:  Employee  Class | |
| Back: | | | |
| Attributes:  Classroom (int)  Class building (string) | | | |
| Relationships:  N/A  Generalization (a-kind-of):  Class  Aggregation (has-parts):  N/A  Other Associations:  Employee | | | |

SIS class diagram:

Diagram

Description automatically generated

1. Verify and validate your CRC cards and class diagram against your SIS functional model:

The class diagram has all the necessary classes with the proper attributes. The students and enrollment staff both have access to register a student for classes. The student information is entered to identify the registering student and the course information is used to register the course. When the information is applied, the future available courses is displayed. Within the student and employee classes, I added the ability to create, read, update, and delete permissions. Then I drew a line to the associated classes for these permissions. Students only have permissions to register classes while employees have full permissions in all classes.

1. Explain your approach to the problem, the decisions you made to arrive at your solution, and how you completed it:

The class diagram, I was able to break down each requirement from the SIS template. Then reading the SIS requirements I filled in the attributes that each class needs to meet the requirements. I was able to connect the classes together according to their relationship. Once the class diagram was completed, I was able to look at this diagram and create each CRC card from each class from the diagram as a separate card.

1. Reflect on this experience and the lessons you learned from it:

This assignment was time consuming and slightly challenging. I had to pull all the information from the SIS template and generate a diagram that also matched the CRC cards. Organizing the data appropriately posed a challenge for me. I learned how to develop classes with attributes in a diagram. This will help me as a developer because I am now able to look at a document of requirements and develop a diagram that can be organized into developed code efficiently.