18CS2009 – 20CS2050 L- Software Engineering URK20CS2001

Ex No: 4	CLASS DIAGRAM
Date: 09/08/2021	

AIM:

Class diagrams identify the class structure of a system, including the properties and methods of each class. It specifies the various relationships that can exists between classes, such as an inheritance. The class diagram is one of the most widely used diagrams from the UML specification. Part of the popularity of the Class diagrams is the fact that many CASE tools, such as Rationale Rose, will provide clarity of the designing process.

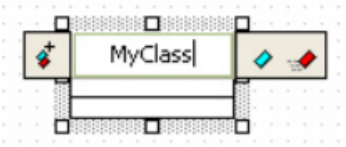
This document will explain the class diagram for the E-Learning Platform.

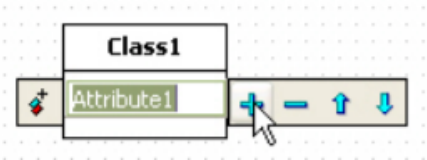
DESCRIPTION:

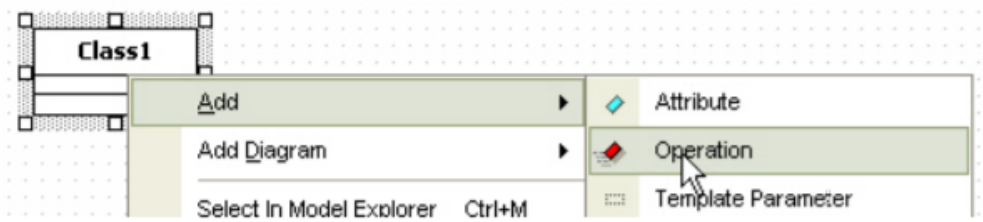
The basic components on a Class diagram are classes and the relationships between them.

Class

A class is depicted using a rectangle divided into 3 sections. The top section is the name of the class. The middle section defines the properties of the class. The bottom section lists the methods of the class.







Association

An Association is a generic relationship between two classes and is modelled by a line connecting the two classes. This line cam be qualified with the type of relationship and can also feature multiplicity rules (for e.g. One-to-one, One-to-many, many-to-many) for the relationship.

Composition

If a class cannot exist by itself, and instead must be a member of another class, then that class has a Composition relationship with the containing class. A composition relationship is indicated by a line with a filled diamond.

Dependency

A Dependency relationship is indicated by a dotted arrow.

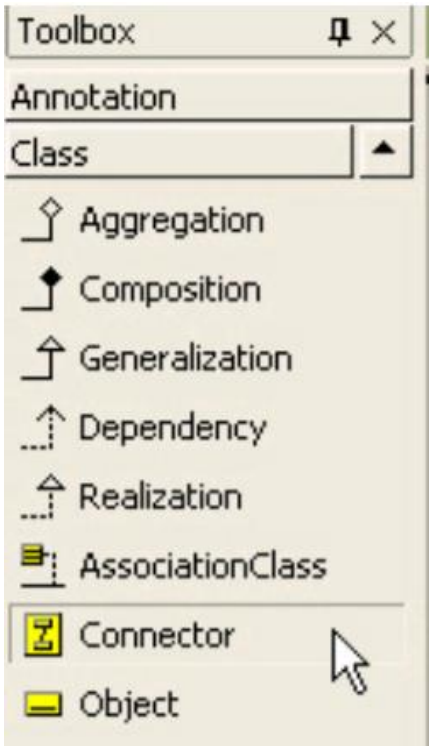
Aggregation

Aggregations indicate a whole-part relationship and are known as “has-a” relationships. An Aggregation relationship is indicated by a line with a hollow diamond.

Generalization

A Generalization relationship is the equivalent of an inheritance relationship in object-oriented terms. (“is-a” relationship). A Generalization relationship is indicated by an arrow with a hollow arrow head pointing to the base of “parent” class.

Toolbox for class diagram



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ALGORITHMS

Step 1: Identify the various classes that behave as main to perform various functions in the system.

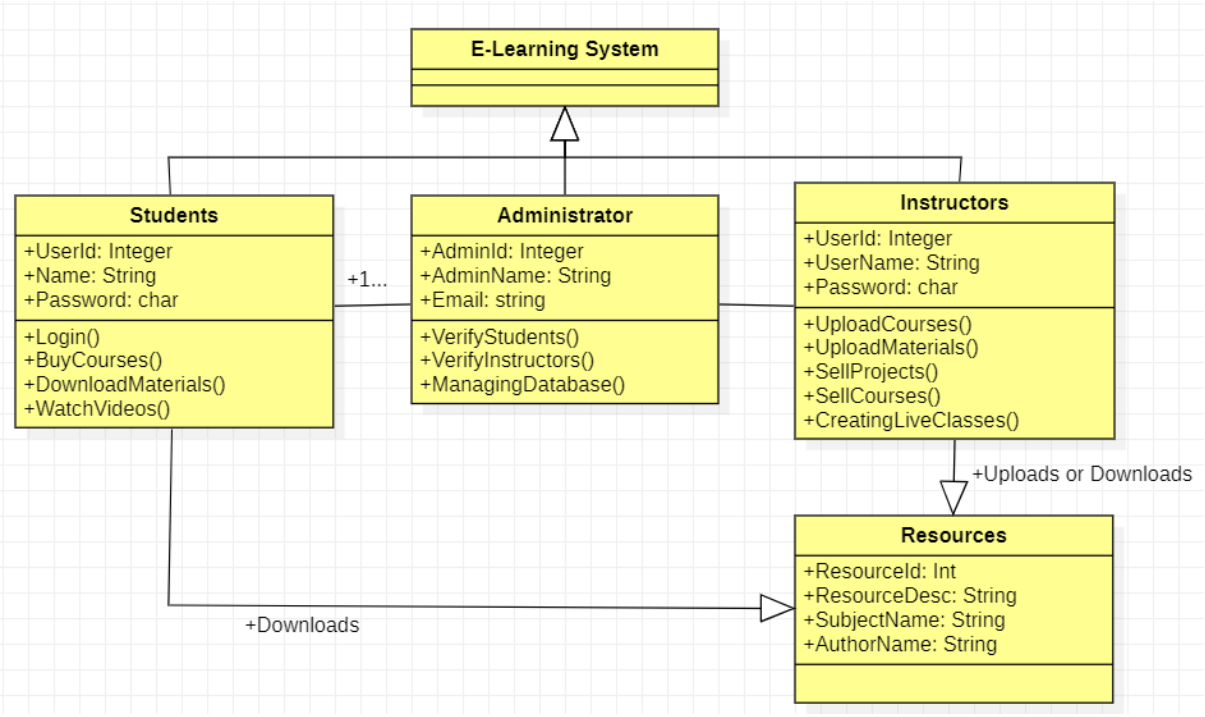
Step 2: Define all its attributes and what operations they perform.

Step 3: Identify the various relationships among the classes.

Step 4: The relationship between a class and its subclass is represented by generalization.

Step 5: Design the class diagram for the E-Learning System using the tools provided.

OUTPUT:



The Class diagram for the E-Learning system explains the website has an Administrator who will verify the accounts of the students and the instructors who are the users of this e-learning system. And the functionalities of the students are they can buy courses, download materials, and watch the videos. The functionalities of the instructors are uploading the courses, uploading materials for students, selling their own projects, selling their courses and creating live classes.

RESULT:

Class diagrams identify the class structure of a system, including the properties and methods of each class and the relationships between them are designed successfully.