Software Engineering Project: Learning Management System

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University of Houston – Downtown

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Team Model

Our team is organized as a classical chief programmer team, and there are four members in our team. Joseph Dao is the chief programmer while the programmers are Jonathan Fernandez, Phan Nguyen, and Yousuf Rehman.



Team Member Responsibilities

Daniel Owen (Note: Daniel left UHD near the end of the semester.)

* Create an initial use case diagram
* Update the use case diagram with a Manage Course Information use case
* Create detailed class diagram

Joseph Dao

* Create a list of possible attributes to build the uses cases around
* Create a list of potential use cases
* Revise the initial use case diagram to follow UML notation
* Revise the first update of the use case diagram to incorporate Professor Chang’s criticisms
* Create the entity-relationship diagram
* Create and maintain the team model and descriptions
* Revise overall class diagram for the student
* Create overall class diagram for the instructor and administrator
* Maintain overall class diagrams for the student, instructor, and administrator
* Create and maintain statechart
* Maintain detailed class diagram
* Create test cases for black-box unit testing
* Create and maintain the graphical user interface

Phan Nguyen

* Create and maintain architecture diagram for the database front-end and back-end
* Revise team diagram
* Execute test cases with MyTAP system

Jonathan Fernandez

* Create initial overall class diagram for the student
* Maintain the entity-relationship diagram
* Create and maintain the database system

Yousuf Rehman

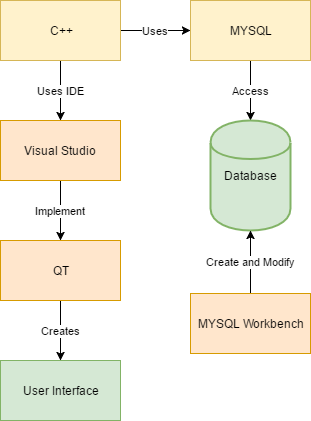
* Maintain the use case diagram

Use Case Diagram

 Entity-Relationship Diagram



Architecture Diagram



Overall Class Diagram



See <https://github.com/JosephDao/student-database/blob/master/diagrams/overall-class.vsdx> for a larger version of the overall class diagram.

Detailed Class Diagram



See <https://github.com/JosephDao/student-database/blob/master/diagrams/detailed-class.vsdx> for a larger version of the detailed class diagram.

Statechart



See <https://github.com/JosephDao/student-database/blob/master/diagrams/statechart.vsdx> for a larger version of the statechart.

Source Code

See <https://github.com/JosephDao/student-database/tree/master/GUI/login> for all the source code used to create the graphical user interface.

Version Control Documentation

See <https://github.com/JosephDao/student-database> for the group’s version control documentation.

# Black-Box Unit Test Cases

Through equivalence testing with boundary value analysis

|  |  |
| --- | --- |
| Course data: |  |
| Equivalence classes for crseNo. |  |
| 1. First character not integer | Error (not an integer) |
| 1. < 4 integers | Error |
| 1. 4 integers | Acceptable |
| Equivalence classes for title. |  |
| 1. First character not letter | Error (not a letter) |
| 1. < 5 characters | Error |
| 1. 5 characters | Acceptable |
| 1. Between 5 and 35 characters | Acceptable |
| 1. > 35 characters | Error (too many characters) |
| Equivalence classes for subj. |  |
| 1. First character not letter | Error (not a letter) |
| 1. < 2 characters | Error |
| 1. 2 characters | Acceptable |
| 1. Between 2 and 4 characters | Acceptable |
| 1. 4 characters | Acceptable |
| 1. > 4 characters | Error (too many characters) |

|  |  |
| --- | --- |
| Course Section data: |  |
| Equivalence classes for CRN. |  |
| 1. First character not integer | Error (not an integer) |
| 1. < 5 integers | Error |
| 1. 5 integers | Acceptable |
| Equivalence classes for startTime. |  |
| 1. First character not integer | Error (not an integer) |
| 1. < 6 characters | Error |
| 1. 6 characters | Acceptable |
| Equivalence classes for endTime. |  |
| 1. First character not integer | Error (not an integer) |
| 1. < 6 characters | Error |
| 1. 6 characters | Acceptable |
| Equivalence classes for days. |  |
| 1. First character not a letter | Error (not a letter) |
| 1. < 1 character | Error |
| 1. 1 character | Acceptable |
| 1. 2 characters | Acceptable |
| 1. > 2 characters | Acceptable |
| 1. L | Error (not within set) |
| 1. Th | Acceptable |
| Equivalence classes for deliveryMode. |  |
| 1. First character not a letter | Error (not a letter) |
| 1. S | Error |
| 1. H | Acceptable |

|  |  |
| --- | --- |
| Grade data: |  |
| Equivalence classes for assignment. |  |
| 1. First character not letter | Error (not a letter) |
| 1. < 4 characters | Error |
| 1. 4 characters | Acceptable |
| 1. Between 4 and 35 characters | Acceptable |
| 1. 35 characters | Acceptable |
| 1. > 35 characters | Error (too many characters) |
| Equivalence classes for grade. |  |
| 1. First character not an integer | Error (not an integer) |
| 1. < 1 integer | Error |
| 1. 1 integer | Acceptable |
| 1. 2 integers | Acceptable |
| 1. > 2 integers | Error (too many integers) |

|  |  |
| --- | --- |
| Student data: |  |
| Equivalence classes for studentID. |  |
| 1. First character not integer | Error (not an integer) |
| 1. < 9 integers | Error |
| 1. 9 integers | Acceptable |
| Equivalence classes for password. |  |
| 1. First character not from letter, digit, or nonalphanumeric | Error (not a letter, digit, or nonalphanumeric character) |
| 1. < 8 characters | Error |
| 1. 8 characters | Acceptable |
| 1. Between 8 and 16 characters | Acceptable |
| 1. 16 characters | Acceptable |
| 1. > 16 characters | Error (too many characters) |
| Equivalence classes for fName. |  |
| 1. First character not letter | Error (not a letter) |
| 1. < 1 character | Error |
| 1. 1 character | Acceptable |
| 1. Between 1 and 35 characters | Acceptable |
| 1. 35 | Acceptable |
| 1. > 35 characters | Error (too many characters) |
| Equivalence classes for lName. |  |
| 1. First character not a character | Error (not a character) |
| 1. < 1 character | Error |
| 1. 1 character | Acceptable |
| 1. Between 1 and 35 characters | Acceptable |
| 1. 35 | Acceptable |
| 1. > 35 characters | Error (too many characters) |
| Equivalence classes for regStatus. |  |
| 1. First character not bool | Error (not a bool) |
| 1. 0 | Acceptable |
| Equivalence classes for gpa. |  |
| 1. First character not integer | Error (not an integer) |
| 1. < 2 characters | Error |
| 1. 2 characters | Acceptable |
| Equivalence classes for email. |  |
| 1. > 254 characters | Error |
| 1. <= characters | Acceptable |

See <https://github.com/JosephDao/student-database/tree/master/test> for the SQL files needed to test the database. Execute <https://github.com/JosephDao/student-database/blob/master/test/mytap.sql> first on MySQL workbench. Then execute <https://github.com/JosephDao/student-database/blob/master/test/test-cases-part-1.sql>, and then execute <https://github.com/JosephDao/student-database/blob/master/test/test-cases-part-2.sql>.

Database File

See <https://github.com/JosephDao/student-database/blob/master/database/database.sql> for the same database file presented below.

CREATE DATABASE IF NOT EXISTS `college` /\*!40100 DEFAULT CHARACTER SET utf8 \*/;

USE `college`;

-- MySQL dump 10.13 Distrib 5.7.17, for Win64 (x86\_64)

--

-- Host: localhost Database: college

-- ------------------------------------------------------

-- Server version 5.7.18-log

/\*!40101 SET @OLD\_CHARACTER\_SET\_CLIENT=@@CHARACTER\_SET\_CLIENT \*/;

/\*!40101 SET @OLD\_CHARACTER\_SET\_RESULTS=@@CHARACTER\_SET\_RESULTS \*/;

/\*!40101 SET @OLD\_COLLATION\_CONNECTION=@@COLLATION\_CONNECTION \*/;

/\*!40101 SET NAMES utf8 \*/;

/\*!40103 SET @OLD\_TIME\_ZONE=@@TIME\_ZONE \*/;

/\*!40103 SET TIME\_ZONE='+00:00' \*/;

/\*!40014 SET @OLD\_UNIQUE\_CHECKS=@@UNIQUE\_CHECKS, UNIQUE\_CHECKS=0 \*/;

/\*!40014 SET @OLD\_FOREIGN\_KEY\_CHECKS=@@FOREIGN\_KEY\_CHECKS, FOREIGN\_KEY\_CHECKS=0 \*/;

/\*!40101 SET @OLD\_SQL\_MODE=@@SQL\_MODE, SQL\_MODE='NO\_AUTO\_VALUE\_ON\_ZERO' \*/;

/\*!40111 SET @OLD\_SQL\_NOTES=@@SQL\_NOTES, SQL\_NOTES=0 \*/;

--

-- Table structure for table `class`

--

DROP TABLE IF EXISTS `class`;

/\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!40101 SET character\_set\_client = utf8 \*/;

CREATE TABLE `class` (

`crn` smallint(5) unsigned NOT NULL AUTO\_INCREMENT,

`subj` varchar(4) NOT NULL,

`crseNo` smallint(4) unsigned NOT NULL,

`title` varchar(35) NOT NULL,

`startTime` time NOT NULL,

`endTime` time NOT NULL,

`days` set('M','Tu','W','Th','F','Sa','Su') NOT NULL,

`deliveryMode` enum('F','O','H') NOT NULL,

PRIMARY KEY (`crn`),

KEY `subj` (`subj`,`crseNo`),

CONSTRAINT `class\_ibfk\_1` FOREIGN KEY (`subj`, `crseNo`) REFERENCES `course` (`subj`, `crseNo`) ON UPDATE CASCADE

) ENGINE=InnoDB AUTO\_INCREMENT=21139 DEFAULT CHARSET=utf8;

/\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;

--

-- Dumping data for table `class`

--

LOCK TABLES `class` WRITE;

/\*!40000 ALTER TABLE `class` DISABLE KEYS \*/;

INSERT INTO `class` VALUES (10006,'CS',4315,'Operating Systems','10:00:00','11:15:00','M,W','F'),(10007,'CS',4318,'Theory DB & File Structures','11:30:00','12:45:00','M,W','F'),(10008,'CS',4390,'Artificial Intelligence','10:00:00','11:15:00','Th','H'),(10009,'CS',3420,'Intro to Software Engineering','16:00:00','17:15:00','Tu,Th','F'),(10010,'CS',3326,'Network Security','10:00:00','12:45:00','F','F'),(20084,'ENG',1301,'Composition I','10:00:00','11:15:00','M,W','F'),(20085,'ENG',1301,'Composition I','10:00:00','11:15:00','Tu,Th','F'),(20198,'BIOL',1301,'General Biology I','08:30:00','10:15:00','Tu,Th','F'),(20199,'BIOL',1301,'General Biology I','10:30:00','12:15:00','M,W','F'),(20622,'ART',1301,'Hst of Art: Paleo to Renaiss','07:00:00','08:15:00','Tu,Th','F'),(20627,'ART',1301,'Hst of Art: Paleo to Renaiss','04:00:00','05:15:00','Th','F'),(20645,'MATH',1301,'College Algebra','10:00:00','11:15:00','M,W','F'),(20654,'MATH',1301,'College Algebra','08:30:00','09:45:00','M,Tu,W,Th','F'),(21136,'HIST',1305,'US History to 1877','10:00:00','11:15:00','Th','F'),(21138,'HIST',1305,'US History to 1877','08:30:00','09:45:00','Th','F');

/\*!40000 ALTER TABLE `class` ENABLE KEYS \*/;

UNLOCK TABLES;

--

-- Temporary view structure for view `classgrade`

--

DROP TABLE IF EXISTS `classgrade`;

/\*!50001 DROP VIEW IF EXISTS `classgrade`\*/;

SET @saved\_cs\_client = @@character\_set\_client;

SET character\_set\_client = utf8;

/\*!50001 CREATE VIEW `classgrade` AS SELECT

1 AS `studentId`,

1 AS `crn`,

1 AS `subj`,

1 AS `crseNo`,

1 AS `title`,

1 AS `grade`,

1 AS `creditHrs`\*/;

SET character\_set\_client = @saved\_cs\_client;

--

-- Table structure for table `course`

--

DROP TABLE IF EXISTS `course`;

/\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!40101 SET character\_set\_client = utf8 \*/;

CREATE TABLE `course` (

`subj` varchar(4) NOT NULL,

`crseNo` smallint(4) unsigned NOT NULL,

`title` varchar(35) NOT NULL,

`creditHrs` tinyint(4) NOT NULL,

PRIMARY KEY (`subj`,`crseNo`)

) ENGINE=InnoDB DEFAULT CHARSET=utf8;

/\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;

--

-- Dumping data for table `course`

--

LOCK TABLES `course` WRITE;

/\*!40000 ALTER TABLE `course` DISABLE KEYS \*/;

INSERT INTO `course` VALUES ('ART',1301,'Hst of Art: Paleo to Renaiss',3),('BIOL',1301,'General Biology I',3),('CS',3326,'Network Security',3),('CS',3420,'Intro to Software Engineering',4),('CS',4315,'Operating Systems',3),('CS',4318,'Theory DB & File Structures',3),('CS',4390,'Artificial Intelligence',4),('ENG',1301,'Composition I',3),('HIST',1305,'US History to 1877',3),('MATH',1301,'College Algebra',3),('MATH',45612,'Calculus I',3);

/\*!40000 ALTER TABLE `course` ENABLE KEYS \*/;

UNLOCK TABLES;

--

-- Table structure for table `enroll`

--

DROP TABLE IF EXISTS `enroll`;

/\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!40101 SET character\_set\_client = utf8 \*/;

CREATE TABLE `enroll` (

`crn` smallint(5) unsigned NOT NULL,

`studentId` int(9) unsigned NOT NULL,

`assignment` varchar(45) NOT NULL,

`grade` smallint(3) DEFAULT NULL,

PRIMARY KEY (`crn`,`studentId`,`assignment`),

KEY `studentId` (`studentId`),

CONSTRAINT `enroll\_ibfk\_1` FOREIGN KEY (`crn`) REFERENCES `class` (`crn`) ON UPDATE CASCADE,

CONSTRAINT `enroll\_ibfk\_2` FOREIGN KEY (`studentId`) REFERENCES `student` (`studentId`) ON DELETE CASCADE ON UPDATE CASCADE

) ENGINE=InnoDB DEFAULT CHARSET=utf8;

/\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;

--

-- Dumping data for table `enroll`

--

LOCK TABLES `enroll` WRITE;

/\*!40000 ALTER TABLE `enroll` DISABLE KEYS \*/;

INSERT INTO `enroll` VALUES (10006,900300101,'Midterm',88),(10006,900300101,'Paper',90),(10006,900300120,'Final',91),(10007,900300101,'Final',77),(10007,900300101,'Midterm',78),(10007,900300101,'Project',82),(10008,900300101,'Assignment',60),(10008,900300101,'Final',85),(10008,900300101,'Midterm',77),(10009,900300101,'Final',88),(10009,900300101,'Midterm',81),(10009,900300101,'Midterm1',77),(10010,900300101,'Final',77),(10010,900300101,'Paper',90),(10010,900300101,'Project',72),(20085,900300101,'Final',73),(20198,900300102,'Final',84),(20199,900300103,'Final',77),(20622,900300107,'Final',43),(20627,900300108,'Final',50),(20654,900300113,'Final',61),(21138,900300119,'Final',82);

/\*!40000 ALTER TABLE `enroll` ENABLE KEYS \*/;

UNLOCK TABLES;

--

-- Temporary view structure for view `gpa`

--

DROP TABLE IF EXISTS `gpa`;

/\*!50001 DROP VIEW IF EXISTS `gpa`\*/;

SET @saved\_cs\_client = @@character\_set\_client;

SET character\_set\_client = utf8;

/\*!50001 CREATE VIEW `gpa` AS SELECT

1 AS `studentId`,

1 AS `gpa`\*/;

SET character\_set\_client = @saved\_cs\_client;

--

-- Temporary view structure for view `grade`

--

DROP TABLE IF EXISTS `grade`;

/\*!50001 DROP VIEW IF EXISTS `grade`\*/;

SET @saved\_cs\_client = @@character\_set\_client;

SET character\_set\_client = utf8;

/\*!50001 CREATE VIEW `grade` AS SELECT

1 AS `studentId`,

1 AS `subj`,

1 AS `crseNo`,

1 AS `title`,

1 AS `assignment`,

1 AS `grade`\*/;

SET character\_set\_client = @saved\_cs\_client;

--

-- Table structure for table `student`

--

DROP TABLE IF EXISTS `student`;

/\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!40101 SET character\_set\_client = utf8 \*/;

CREATE TABLE `student` (

`studentId` int(9) unsigned NOT NULL AUTO\_INCREMENT,

`fName` varchar(35) NOT NULL,

`lName` varchar(35) NOT NULL,

`regStatus` tinyint(1) NOT NULL DEFAULT '0',

`gpa` decimal(2,1) unsigned NOT NULL DEFAULT '4.0',

`email` varchar(254) NOT NULL,

`password` varchar(45) NOT NULL,

PRIMARY KEY (`studentId`),

UNIQUE KEY `email\_UNIQUE` (`email`),

UNIQUE KEY `studentId` (`studentId`)

) ENGINE=InnoDB AUTO\_INCREMENT=900300122 DEFAULT CHARSET=utf8;

/\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;

--

-- Dumping data for table `student`

--

LOCK TABLES `student` WRITE;

/\*!40000 ALTER TABLE `student` DISABLE KEYS \*/;

INSERT INTO `student` VALUES (900300101,'Jonathan','Fernandez',1,4.0,'fernandezj28@gator.uhd.edu','dest453'),(900300102,'Cicero','Goldner',1,1.0,'miller.stefanie@example.com','typds34'),(900300103,'Myrtle','Hane',1,1.5,'sophie38@example.net','byzantine4'),(900300104,'Margarete','Carter',0,0.8,'german30@example.com','quip3'),(900300105,'Jamal','Upton',0,3.3,'sister09@example.com','trine345'),(900300106,'Una','Stanton',0,2.2,'maryjane09@example.net','dddripwe1'),(900300107,'Shaylee','Jakubowski',1,1.9,'pwalsh@example.org','seelby9'),(900300108,'Xzavier','Klein',1,0.9,'durgan.art@example.com','6787324'),(900300110,'Mortimer','Braun',0,1.2,'jasper50@example.net','fkyujdtrs67'),(900300111,'Reginald','Gutkowski',0,0.2,'weber.jorge@example.org','guitarqw'),(900300112,'Hanna','Goyette',0,2.2,'hickle.margarett@example.com','astere3io'),(900300113,'Kamron','Christiansen',1,2.4,'emmanuel29@example.net','y4uppie'),(900300115,'Santa','Schuster',0,2.2,'lowell05@example.com','simonand'),(900300116,'Bulah','Hodkiewicz',0,2.8,'umueller@example.org','tilik78'),(900300117,'Erich','Dare',0,2.0,'spencer.hermina@example.net','tilifdaskl3'),(900300118,'Haylee','Osinski',0,0.2,'kenya35@example.net','dfsjkl2349'),(900300119,'Preston','Bode',1,3.2,'mlarson@example.com','skiin34'),(900300120,'Ahmad','Flatley',1,3.3,'zachary27@example.net','bentafd83'),(900300121,'Amalia','Zemlak',0,0.5,'zboncak.savanah@example.org','zerphyili89');

/\*!40000 ALTER TABLE `student` ENABLE KEYS \*/;

UNLOCK TABLES;

--

-- Temporary view structure for view `studentclass`

--

DROP TABLE IF EXISTS `studentclass`;

/\*!50001 DROP VIEW IF EXISTS `studentclass`\*/;

SET @saved\_cs\_client = @@character\_set\_client;

SET character\_set\_client = utf8;

/\*!50001 CREATE VIEW `studentclass` AS SELECT

1 AS `studentId`,

1 AS `crn`,

1 AS `subj`,

1 AS `crseNo`,

1 AS `title`,

1 AS `startTime`,

1 AS `endTime`,

1 AS `days`,

1 AS `deliveryMode`\*/;

SET character\_set\_client = @saved\_cs\_client;

--

-- Dumping events for database 'college'

--

--

-- Dumping routines for database 'college'

--

/\*!50003 DROP FUNCTION IF EXISTS `calcGradePts` \*/;

/\*!50003 SET @saved\_cs\_client = @@character\_set\_client \*/ ;

/\*!50003 SET @saved\_cs\_results = @@character\_set\_results \*/ ;

/\*!50003 SET @saved\_col\_connection = @@collation\_connection \*/ ;

/\*!50003 SET character\_set\_client = utf8 \*/ ;

/\*!50003 SET character\_set\_results = utf8 \*/ ;

/\*!50003 SET collation\_connection = utf8\_general\_ci \*/ ;

/\*!50003 SET @saved\_sql\_mode = @@sql\_mode \*/ ;

/\*!50003 SET sql\_mode = 'STRICT\_TRANS\_TABLES,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION' \*/ ;

DELIMITER ;;

CREATE DEFINER=`root`@`localhost` FUNCTION `calcGradePts`(n INT) RETURNS tinyint(4)

BEGIN

DECLARE s tinyint;

if n between 93 and 100 then set s = 16;

elseif n between 90 and 92 then set s = 14.8;

elseif n between 87 and 89 then set s = 13.2;

elseif n between 83 and 86 then set s = 12;

elseif n between 80 and 82 then set s = 10.8;

elseif n between 77 and 79 then set s = 9.2;

elseif n between 73 and 76 then set s = 8;

elseif n between 70 and 72 then set s = 6.8;

elseif n between 67 and 69 then set s = 5.2;

elseif n between 63 and 66 then set s = 4;

elseif n between 60 and 62 then set s = 2.8;

else set s = 0;

end if;

return s;

END ;;

DELIMITER ;

/\*!50003 SET sql\_mode = @saved\_sql\_mode \*/ ;

/\*!50003 SET character\_set\_client = @saved\_cs\_client \*/ ;

/\*!50003 SET character\_set\_results = @saved\_cs\_results \*/ ;

/\*!50003 SET collation\_connection = @saved\_col\_connection \*/ ;

--

-- Final view structure for view `classgrade`

--

/\*!50001 DROP VIEW IF EXISTS `classgrade`\*/;

/\*!50001 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!50001 SET @saved\_cs\_results = @@character\_set\_results \*/;

/\*!50001 SET @saved\_col\_connection = @@collation\_connection \*/;

/\*!50001 SET character\_set\_client = utf8 \*/;

/\*!50001 SET character\_set\_results = utf8 \*/;

/\*!50001 SET collation\_connection = utf8\_general\_ci \*/;

/\*!50001 CREATE ALGORITHM=UNDEFINED \*/

/\*!50013 DEFINER=`root`@`localhost` SQL SECURITY DEFINER \*/

/\*!50001 VIEW `classgrade` AS select `e`.`studentId` AS `studentId`,`e`.`crn` AS `crn`,`c`.`subj` AS `subj`,`c`.`crseNo` AS `crseNo`,`c`.`title` AS `title`,round(avg(`e`.`grade`),2) AS `grade`,`c`.`creditHrs` AS `creditHrs` from ((`enroll` `e` join `course` `c`) join `class` `cl`) where ((`e`.`crn` = `cl`.`crn`) and (`cl`.`title` = `c`.`title`)) group by `e`.`crn` \*/;

/\*!50001 SET character\_set\_client = @saved\_cs\_client \*/;

/\*!50001 SET character\_set\_results = @saved\_cs\_results \*/;

/\*!50001 SET collation\_connection = @saved\_col\_connection \*/;

--

-- Final view structure for view `gpa`

--

/\*!50001 DROP VIEW IF EXISTS `gpa`\*/;

/\*!50001 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!50001 SET @saved\_cs\_results = @@character\_set\_results \*/;

/\*!50001 SET @saved\_col\_connection = @@collation\_connection \*/;

/\*!50001 SET character\_set\_client = utf8 \*/;

/\*!50001 SET character\_set\_results = utf8 \*/;

/\*!50001 SET collation\_connection = utf8\_general\_ci \*/;

/\*!50001 CREATE ALGORITHM=UNDEFINED \*/

/\*!50013 DEFINER=`root`@`localhost` SQL SECURITY DEFINER \*/

/\*!50001 VIEW `gpa` AS select `classgrade`.`studentId` AS `studentId`,round((sum(`calcGradePts`(`classgrade`.`grade`)) / sum(`classgrade`.`creditHrs`)),2) AS `gpa` from `classgrade` group by `classgrade`.`studentId` \*/;

/\*!50001 SET character\_set\_client = @saved\_cs\_client \*/;

/\*!50001 SET character\_set\_results = @saved\_cs\_results \*/;

/\*!50001 SET collation\_connection = @saved\_col\_connection \*/;

--

-- Final view structure for view `grade`

--

/\*!50001 DROP VIEW IF EXISTS `grade`\*/;

/\*!50001 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!50001 SET @saved\_cs\_results = @@character\_set\_results \*/;

/\*!50001 SET @saved\_col\_connection = @@collation\_connection \*/;

/\*!50001 SET character\_set\_client = utf8 \*/;

/\*!50001 SET character\_set\_results = utf8 \*/;

/\*!50001 SET collation\_connection = utf8\_general\_ci \*/;

/\*!50001 CREATE ALGORITHM=UNDEFINED \*/

/\*!50013 DEFINER=`root`@`localhost` SQL SECURITY DEFINER \*/

/\*!50001 VIEW `grade` AS select `e`.`studentId` AS `studentId`,`c`.`subj` AS `subj`,`c`.`crseNo` AS `crseNo`,`c`.`title` AS `title`,`e`.`assignment` AS `assignment`,`e`.`grade` AS `grade` from (`class` `c` join `enroll` `e`) where (`c`.`crn` = `e`.`crn`) \*/;

/\*!50001 SET character\_set\_client = @saved\_cs\_client \*/;

/\*!50001 SET character\_set\_results = @saved\_cs\_results \*/;

/\*!50001 SET collation\_connection = @saved\_col\_connection \*/;

--

-- Final view structure for view `studentclass`

--

/\*!50001 DROP VIEW IF EXISTS `studentclass`\*/;

/\*!50001 SET @saved\_cs\_client = @@character\_set\_client \*/;

/\*!50001 SET @saved\_cs\_results = @@character\_set\_results \*/;

/\*!50001 SET @saved\_col\_connection = @@collation\_connection \*/;

/\*!50001 SET character\_set\_client = utf8 \*/;

/\*!50001 SET character\_set\_results = utf8 \*/;

/\*!50001 SET collation\_connection = utf8\_general\_ci \*/;

/\*!50001 CREATE ALGORITHM=UNDEFINED \*/

/\*!50013 DEFINER=`root`@`localhost` SQL SECURITY DEFINER \*/

/\*!50001 VIEW `studentclass` AS select `cg`.`studentId` AS `studentId`,`cg`.`crn` AS `crn`,`cg`.`subj` AS `subj`,`cg`.`crseNo` AS `crseNo`,`cg`.`title` AS `title`,`c`.`startTime` AS `startTime`,`c`.`endTime` AS `endTime`,`c`.`days` AS `days`,`c`.`deliveryMode` AS `deliveryMode` from (`classgrade` `cg` join `class` `c`) where (`cg`.`crn` = `c`.`crn`) \*/;

/\*!50001 SET character\_set\_client = @saved\_cs\_client \*/;

/\*!50001 SET character\_set\_results = @saved\_cs\_results \*/;

/\*!50001 SET collation\_connection = @saved\_col\_connection \*/;

/\*!40103 SET TIME\_ZONE=@OLD\_TIME\_ZONE \*/;

/\*!40101 SET SQL\_MODE=@OLD\_SQL\_MODE \*/;

/\*!40014 SET FOREIGN\_KEY\_CHECKS=@OLD\_FOREIGN\_KEY\_CHECKS \*/;

/\*!40014 SET UNIQUE\_CHECKS=@OLD\_UNIQUE\_CHECKS \*/;

/\*!40101 SET CHARACTER\_SET\_CLIENT=@OLD\_CHARACTER\_SET\_CLIENT \*/;

/\*!40101 SET CHARACTER\_SET\_RESULTS=@OLD\_CHARACTER\_SET\_RESULTS \*/;

/\*!40101 SET COLLATION\_CONNECTION=@OLD\_COLLATION\_CONNECTION \*/;

/\*!40111 SET SQL\_NOTES=@OLD\_SQL\_NOTES \*/;

-- Dump completed on 2017-04-30 9:53:33