```java
/*------------------------------------------------------------------------------------------------
 * Author:      Dan Cassidy and Dr. Zhang
 * Date:        2015-07-09
 * Assignment:  HW1-2
 * Source File: StudentRecord.java
 * Language:    Java
 * Course:      CSCI-C 490, Android Programming, MoWe 08:00
------------------------------------------------------------------------------------------------*/

/**
 * A small record of grades for a student.
 * @author Dan Cassidy
 * @author Dr. Zhang
 */
public class StudentRecord
{
    private int quiz1 = 0;
    private int quiz2 = 0;
    private int quiz3 = 0;
    private int midterm = 0;
    private int finalExam = 0;

    private double numericScore = 0.0D;
    private char letterGrade = '?';

    private final int A_GRADE = 90;
    private final int B_GRADE = 80;
    private final int C_GRADE = 70;
    private final int D_GRADE = 60;

    private final int NUMBER_OF_QUIZZES = 3;

    private final int QUIZ_MIN_SCORE = 0;
    private final int QUIZ_MAX_SCORE = 10;
    private final int MIDTERM_MIN_SCORE = 0;
    private final int MIDTERM_MAX_SCORE = 100;
    private final int FINAL_EXAM_MIN_SCORE = 0;
    private final int FINAL_EXAM_MAX_SCORE = 100;

    private final int QUIZ_WEIGHT = 25;
    private final int MIDTERM_WEIGHT = 35;
    private final int FINAL_EXAM_WEIGHT = 40;

    /**
     * Constructor.
     * @param quiz1 Student score for quiz 1.
     * @param quiz2 Student score for quiz 2.
     * @param quiz3 Student score for quiz 3.
     * @param midterm Student score for the midterm.
     * @param finalExam Student score for the final exam.
     */
    public StudentRecord(int quiz1, int quiz2, int quiz3, int midterm, int finalExam)
    {
        // Use this object's own mutators to set its instance variables, allowing verification
        // to happen in a single location.
        this.setQuiz1(quiz1);
        this.setQuiz2(quiz2);
        this.setQuiz3(quiz3);
        this.setMidterm(midterm);
        this.setFinalExam(finalExam);
    }

    // BEGIN GETTERS AND SETTERS -->
    public int getQuiz1()
    {
        return this.quiz1;
    }

    public void setQuiz1(int score)
    {
        if (score >= QUIZ_MIN_SCORE && score <= QUIZ_MAX_SCORE)
            this.quiz1 = score;
    }

    public int getQuiz2()
    {
        return this.quiz1;
    }

    public void setQuiz2(int score)
    {
        if (score >= QUIZ_MIN_SCORE && score <= QUIZ_MAX_SCORE)
            this.quiz2 = score;
    }

    public int getQuiz3()
    {
        return this.quiz1;
    }

    public void setQuiz3(int score)
    {
        if (score >= QUIZ_MIN_SCORE && score <= QUIZ_MAX_SCORE)
            this.quiz3 = score;
    }

    public int getMidterm()
    {
        return this.midterm;
    }

    public void setMidterm(int score)
    {
        if (score >= MIDTERM_MIN_SCORE && score <= MIDTERM_MAX_SCORE)
            this.midterm = score;
    }

    public int getFinalExam()
    {
        return this.finalExam;
    }

    public void setFinalExam(int score)
    {
        if (score >= FINAL_EXAM_MIN_SCORE && score <= FINAL_EXAM_MAX_SCORE)
            this.finalExam = score;
    }
    // <-- END GETTERS AND SETTERS

    /**
```

```
     * This method calculates the numericScore based on the scores of the quizzes and exams.
     * @return Nothing.
     */
    public void computeNumericScore()
    {
        this.numericScore =
            (double)(quiz1 + quiz2 + quiz3) / (NUMBER_OF_QUIZZES * QUIZ_MAX_SCORE) * QUIZ_WEIGHT +
            (double)midterm / MIDTERM_MAX_SCORE * MIDTERM_WEIGHT +
            (double)finalExam / FINAL_EXAM_MAX_SCORE * FINAL_EXAM_WEIGHT;
    }

    /**
     * This method calculates the letterGrade based on the numberScore.
     * @return Nothing.
     */
    public void computeLetterGrade()
    {
        computeNumericScore();
        if (numericScore >= A_GRADE)
            letterGrade = 'A';
        else if (numericScore >= B_GRADE)
            letterGrade = 'B';
        else if (numericScore >= C_GRADE)
            letterGrade = 'C';
        else if (numericScore >= D_GRADE)
            letterGrade = 'D';
        else
            letterGrade = 'F';
    }

    /**
     * This method compares two StudentRecord objects. It will return true only if two objects
     * have same score for each of the quizzes and exams.
     * @param other Another StudentRecord object that will be compared against for equality.
     * @return boolean, showing whether the two student records are equal (true) or not (false).
     */
    public boolean equals(StudentRecord other)
    {
        if (other == null)
            return false;
        else
            return  (this.quiz1 == other.quiz1) &&
                    (this.quiz2 == other.quiz2) &&
                    (this.quiz3 == other.quiz3) &&
                    (this.midterm == other.midterm) &&
                    (this.finalExam == other.finalExam);
    }

    /**
     * This method returns a string representation of the data in the calling object.
     * @return A string representation of the StudentRecord object.
     */
    public String toString()
    {
        this.computeLetterGrade();
        return  "Quiz 1: " + this.quiz1 + ", " +
                "Quiz 2: " + this.quiz2 + ", " +
                "Quiz 3: " + this.quiz3 + ", " +
                "Midterm: " + this.midterm + ", " +
                "Final Exam: " + this.finalExam + ", " +
                "Grade: " + this.letterGrade + " (" +
                this.numericScore + "%)";
    }
}// StudentRecord

```