Week 5 Homework Q45

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CE480 - Java and Internet Application

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10/12/2023

# Author Note

# The Question

* Attributes
* + number of eyes
* + number of noses
* + number of mouths

* Member functions
* + Manager functions
* \* Constructor
* + Implementor
* \* void convertToNormal()
* Note: This method will convert any face to a normal face:
* 2 eyes
* 1 nose
* 1 mouth
* + Access functions
* \* 3 get functions
* \* 3 set functions
* \* Predicate
* - isNormal()

* Test your class by
* Step 1: Create 3 objects
* F1: 2 eyes, 2 noses, 1 mouths
* F2: 1 eyes, 1 noses, 2 mouths
* F3: 2 eyes, 1 noses, 1 mouths
* Step 2: Convert these three objects into normal ones.
* Step 3: Check whether the objects are normal after
* the conversion.

This looks like a normal OOP method exercise.

A screen shot of a computer

Description automatically generated

The Source Code

public class Face {

    private int numberOfEyes;

    private int numberOfNoses;

    private int numberOfMouths;

    // Constructor to initialize the attributes

    public Face(int eyes, int noses, int mouths) {

        numberOfEyes = eyes;

        numberOfNoses = noses;

        numberOfMouths = mouths;

    }

    // Implementor function to convert any face to a normal face

    public void convertToNormal() {

        numberOfEyes = 2;

        numberOfNoses = 1;

        numberOfMouths = 1;

    }

    // Access functions to get the attributes

    public int getNumberOfEyes() {

        return numberOfEyes;

    }

    public int getNumberOfNoses() {

        return numberOfNoses;

    }

    public int getNumberOfMouths() {

        return numberOfMouths;

    }

    // Access functions to set the attributes

    public void setNumberOfEyes(int eyes) {

        numberOfEyes = eyes;

    }

    public void setNumberOfNoses(int noses) {

        numberOfNoses = noses;

    }

    public void setNumberOfMouths(int mouths) {

        numberOfMouths = mouths;

    }

    // Predicate function to check if the face is normal

    public boolean isNormal() {

        return numberOfEyes == 2 && numberOfNoses == 1 && numberOfMouths == 1;

    }

    public static void main(String[] args) {

        // Step 1: Create 3 Face objects

        Face f1 = new Face(2, 2, 1);

        Face f2 = new Face(1, 1, 2);

        Face f3 = new Face(2, 1, 1);

        // Step 2: Check whether the objects are normal after the conversion

        System.out.println("Is f1 normal? " + f1.isNormal());

        System.out.println("Is f2 normal? " + f2.isNormal());

        System.out.println("Is f3 normal? " + f3.isNormal());

        // Step 2: Convert these three objects into normal ones

        f1.convertToNormal();

        f2.convertToNormal();

        f3.convertToNormal();

        System.out.println("After conversion: ");

        // Step 3: Check whether the objects are normal after the conversion

        System.out.println("Is f1 normal? " + f1.isNormal());

        System.out.println("Is f2 normal? " + f2.isNormal());

        System.out.println("Is f3 normal? " + f3.isNormal());

    }

}