Week 5 Homework Q45

Telmen Enkhbold

San Fransico Bay University

CE480 - Java and Internet Application

Dr. Chang, Henry

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Author Note

The Question

- Attributes

```
+ number of eyes
+ number of noses
+ number of mouths
```

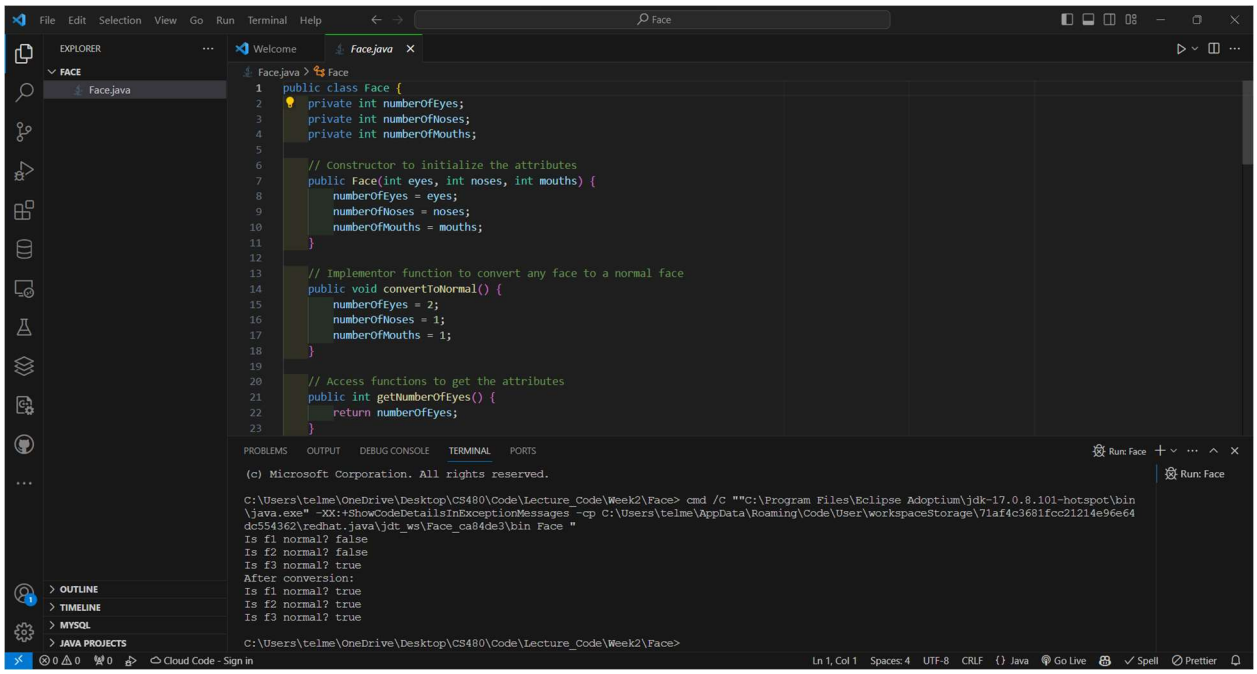
- Member functions

```
+ 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.



The Source Code

```java
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());
    }
}
```