CodeReview

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High coupling

Problem:

The class “Board” is highly coupled with the class“Bonus”. Because the score of “Bonus” are stored in “Board” rather than “Bonus”

In class “Board”, method “collectPoint”. If the player meets a bonus, add mark 3. (in original version of code)

```
if ( identifier.equals("BR") ) {
window.updateScoreTracker(3);
remove(grid[i][j]);
grid[i][j] = null;
tempSound.play("RR");
}
……
```

How to solve it:

We refactor the class “Bonus” to add the “score” variable and some relevant methods like “getMark()”.

[relevant code] In class “Bonus”

```
int bonusScore = 3;
public int getBonusScore(){
return bonusScore;
}
```

The class “Board” take the position info and the collision identify info, so we convert the grid object to the specific Bonus object and get the score of the object, Then adjust the mark through the method “updateScoreTracker()”

[relevant code] In class “Board”, method “collectPoint”

```
if ( identifier.equals("BR") ) {
int score = ((Bonus)grid[i][j]).getBonusScore();
window.updateTotalScoreTracker(score);
remove(grid[i][j]);

grid[i][j] = null;
tempSound.play("RR");

}
```

Add a Junit test “BonusTest” to test the class “Bonus”.

Commits:

3c1df7041faf82a93b524d53b6e997801d167d90

78b9242d60c18cc2195f6bf63783cc1026f8970a

1. High coupling

Similar as probelme 1, The class “Board” is highly coupled with the class “RegularRewards”. Instead of adding 1 mark in the class “Board” If the player meets a regular reward. We found out that storing the mark in class “RegularRewards' ' is more efficient.

How to solve it:

We refactored the class “RegularRewards”, added variable “mark”. We also added methods getRRewardsMark().

[relevant code] In class “RegularRewards”

```
private int mark = 1;
public int getRRewardsScore(){
return mark;
}
```

In the class “Board”, we adjust how to add RegularRewards Mark and RealMark when the player touched a regularRewards cell.

[relevant code] In class “Board”, method “collectPoint”

```
if ( identifier.equals("RR") ) {
int score = ((RegularRewards)grid[i][j]).getRRewardsScore();
window.updateTotalScoreTracker(score);
window.updateTotalRRewardsTracker(score);
remove(grid[i][j]);
grid[i][j] = null;
tempSound.play("RR");
}
```

Commits:

73284b9c30fbf13947732485bb60afc53c979c26

83209577d52daf1bcc9e398160027811f1607390

d7a7623d04257b86b2cadf4fdb4321eac614a49a

2. bad/confusing variable name

Problem:

In the class “ScoreTracker”, two variable names, “realMarks” and “Marks” make people confused. We changed their name to be “totalRegularRewards” and “totalScore”. The relevance function names also are changed.

The first character of the class “tracker” should be capitalized, so changed its name to be “Tracker”.

List all:

Class “tracker” -> “Tracker”

Variable “marks” -> “totalScore” (in class ScoreTracker)

Variable “realMarks” -> “totalRRewards” (in class ScoreTracker)

Method “addMarks()” -> “addTotalScore()” (in class ScoreTracker)

Method “addRealMarks()” -> “addTotalRRewards()” (in class ScoreTracker)

Method “getMarks()” -> “getTotalScore()” (in class ScoreTracker)

Method “getRealMarks()” -> “getTotalRRewards()” (in class ScoreTracker)

Method “addMarks()” -> “addTotalRewards()”(in class ScoreTrackerView)

Method “addRealMarks()” -> “addTotalRRewards()” (in class ScoreTrackerView)

Method “getMarks()” -> “getTotalScore()” (in class ScoreTrackerView)

Method “getRealMarks()” -> “getTotalRRewards()” (in class ScoreTrackerView)

Method “updateMarks()” -> “updateTotalScoreTracker()” (in class AppWindow)

Method “updateRealMarks()” -> “updateTotalRRewardsTracker()” (in class AppWindow)

Commits:

ea645fa6688cef62ec92d37214ca7bf25a700070

3. Unused imports

Problem:

In the class “BonusTest”, we imported org.junit.jupiter.api.Assertions.assertEquals which is never used.

In the blass “Bonus”, we imported import java.util.concurrent.ThreadLocalRandom; which is never used.

How to solve it:

We could simply delete unused imports.

Commits:

7a8623110b8c7bf816f3f17e8b59c75ab5fbbd41

4. Lack of documentation and comments

We add some comments to explain our code or functions to make the program more clearly.

Add comments for ScoreTracker, ScoreTrackerView, TimeTracker, TimeTrackerView, Bonus and regularRewards

Commits:

718528bed8c88e3c1448d9a378ab10c4d34e455d

7a8623110b8c7bf816f3f17e8b59c75ab5fbbd41