CSE1341 - Lab 7 Assignment

Overview

In Lab 6 you created a Slot Machine using object-oriented programming techniques. In this lab, you will make changes to that game using inheritance and file input/output.

Pre-Lab (5 Points)

Create the BonusPlayingField class with its method headers. The contents of the methods do not need to be completed for Pre-Lab credit.

BonusPlayingField
+BonusPlayingField() +spin(): double

NOTES:

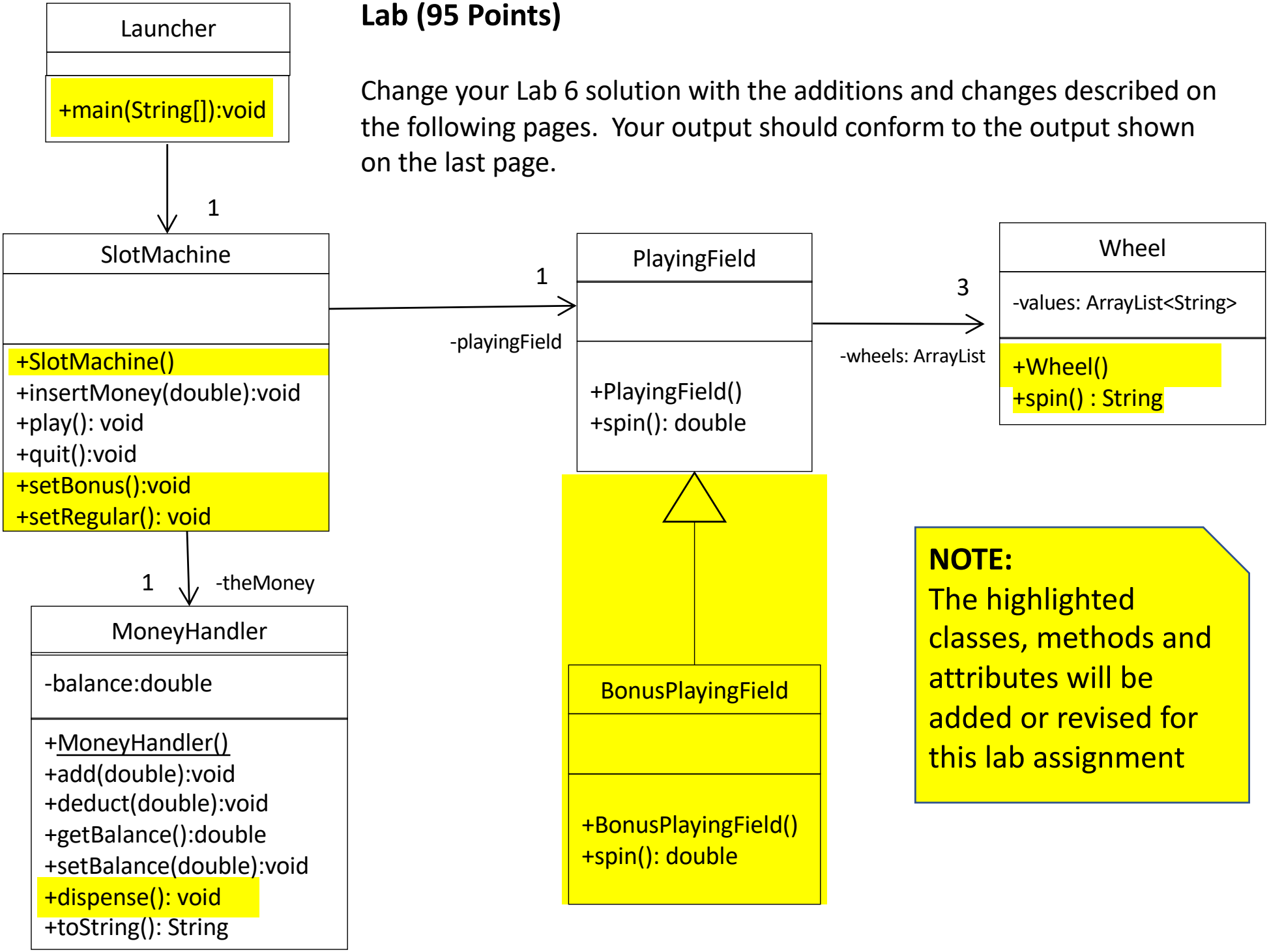
Each program should include comments that explain what each block of code is doing. Additionally, the programs should compile without errors, and run with the results described in the exercise. The following deductions will be made from each exercise if any of the following is incorrect or missing:

Proper formatting [5 points]
Proper names for classes and variables [5 points]
Comments [5 points per class]
Program doesn't compile [10 points]
Source code (java file) missing [10 points]
Missing array where an array was required [5 points each]
Missing loop where a loop was required [5 points each]
Missing class from the design provided [10 points each]
Missing method from the design provided [5 points each]

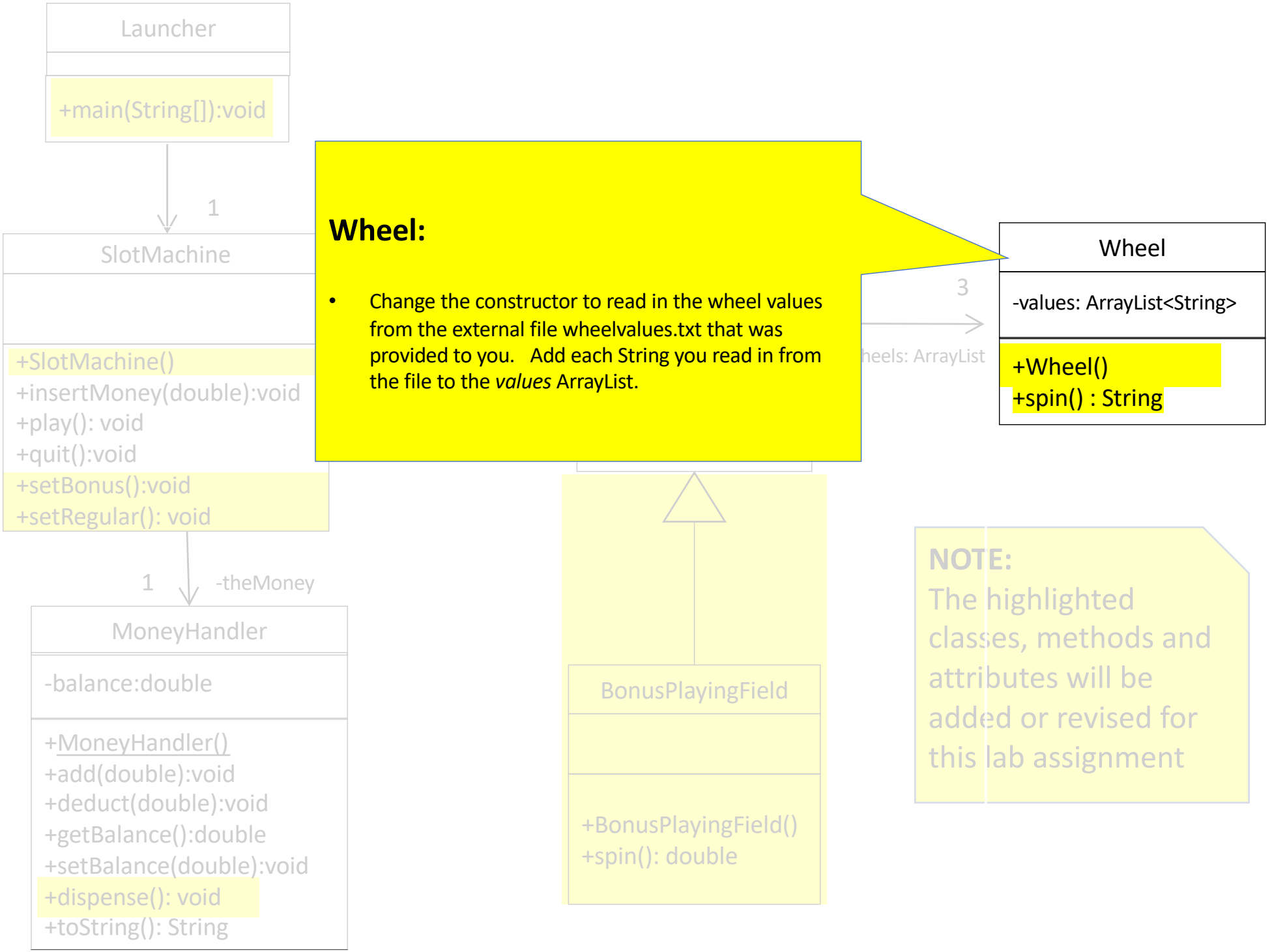
This Lab is due Saturday November 19th at 6:00am.

Lab (95 Points)

Change your Lab 6 solution with the additions and changes described on the following pages. Your output should conform to the output shown on the last page.

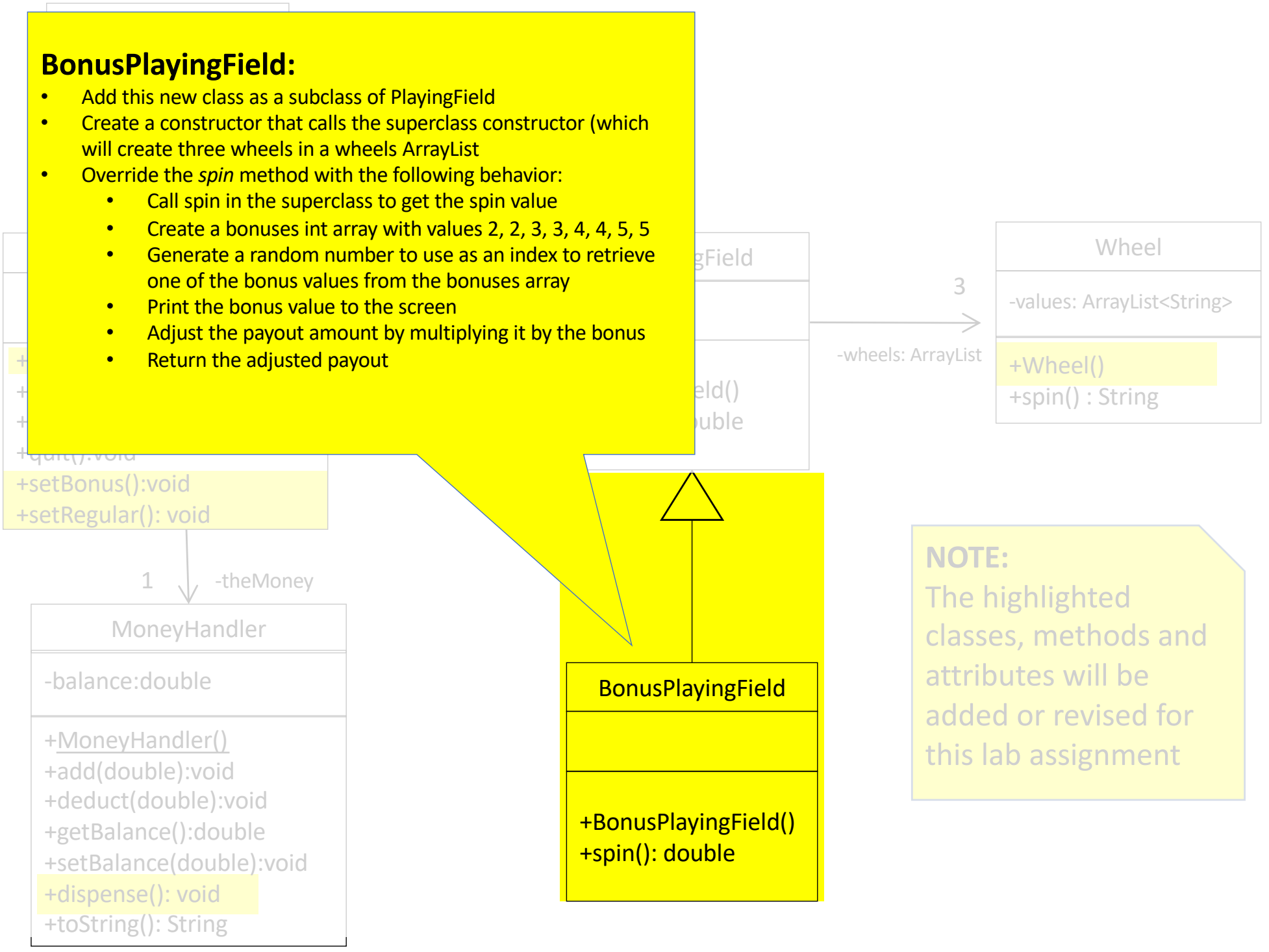


NOTE:
The highlighted classes, methods and attributes will be added or revised for this lab assignment


Launcher
+main(String[]):void
1
SlotMachine
+SlotMachine()
+insertMoney(double):void
+play(): void
+quit():void
+setBonus():void
+setRegular(): void
1
-theMoney
MoneyHandler
-balance:double
+MoneyHandler()
+add(double):void
+deduct(double):void
+getBalance():double
+setBalance(double):void
+dispense(): void
+toString(): String
Wheel:
• Change the constructor to read in the wheel values from the external file wheelvalues.txt that was provided to you. Add each String you read in from the file to the values ArrayList.
3
heels: ArrayList
Wheel
-values: ArrayList<String>
+Wheel()
+spin() : String
BonusPlayingField
+BonusPlayingField()
+spin(): double
NOTE:
The highlighted classes, methods and attributes will be added or revised for this lab assignment

BonusPlayingField:

- Add this new class as a subclass of PlayingField
- Create a constructor that calls the superclass constructor (which will create three wheels in a wheels ArrayList
- Override the *spin* method with the following behavior:
  - Call spin in the superclass to get the spin value
  - Create a bonuses int array with values 2, 2, 3, 3, 4, 4, 5, 5
  - Generate a random number to use as an index to retrieve one of the bonus values from the bonuses array
  - Print the bonus value to the screen
  - Adjust the payout amount by multiplying it by the bonus
  - Return the adjusted payout



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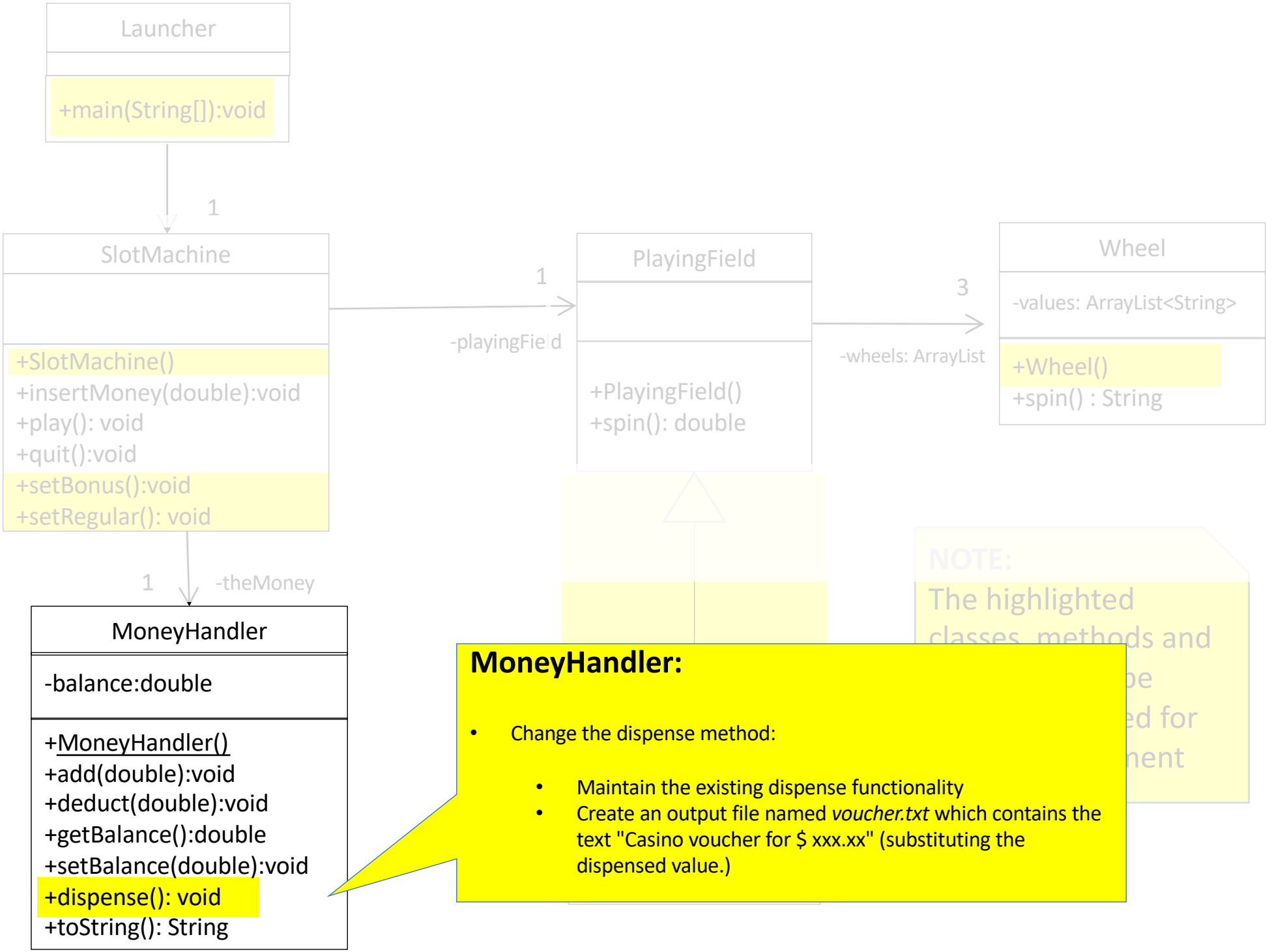
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+spin(): double
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-wheels: ArrayList
Wheel
-values: ArrayList<String>
+Wheel()
+spin() : String
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+MoneyHandler()
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+getBalance():double
+setBalance(double):void
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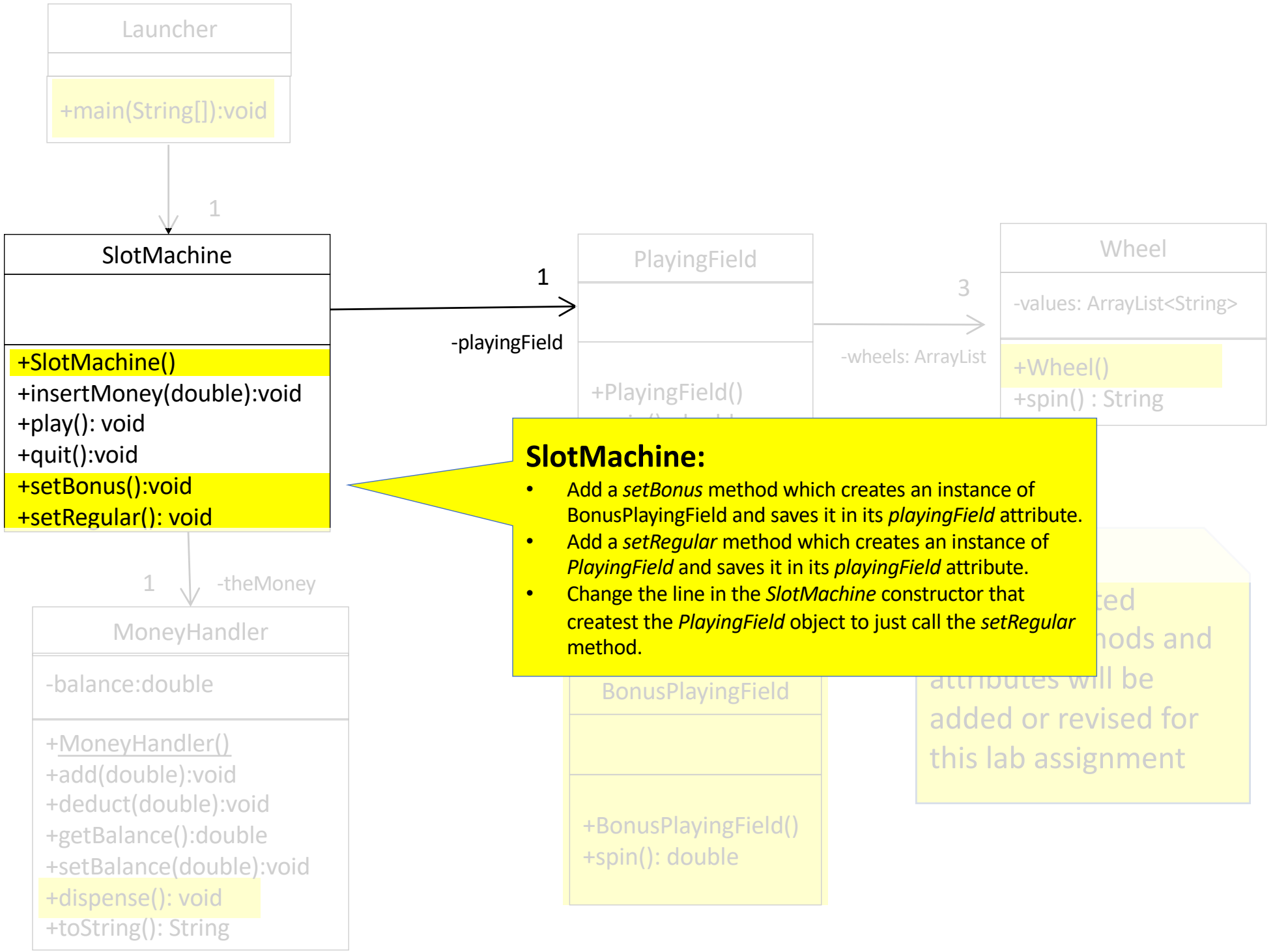
NOTE:
The highlighted
classes, methods and
pe
ed for
ment
MoneyHandler:
• Change the dispense method:
• Maintain the existing dispense functionality
• Create an output file named voucher.txt which contains the text "Casino voucher for $ xxx.xx" (substituting the dispensed value.)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+insertMoney(double):void
+play(): void
+quit():void
+setBonus():void
+setRegular(): void
1
-playingField
PlayingField
+PlayingField()
3
-wheels: ArrayList
Wheel
-values: ArrayList<String>
+Wheel()
+spin() : String
1
-theMoney
MoneyHandler
-balance:double
+MoneyHandler()
+add(double):void
+deduct(double):void
+getBalance():double
+setBalance(double):void
+dispense(): void
+toString(): String
BonusPlayingField
+BonusPlayingField()
+spin(): double
SlotMachine:
Add a setBonus method which creates an instance of BonusPlayingField and saves it in its playingField attribute.
Add a setRegular method which creates an instance of PlayingField and saves it in its playingField attribute.
Change the line in the SlotMachine constructor that createst the PlayingField object to just call the setRegular method.
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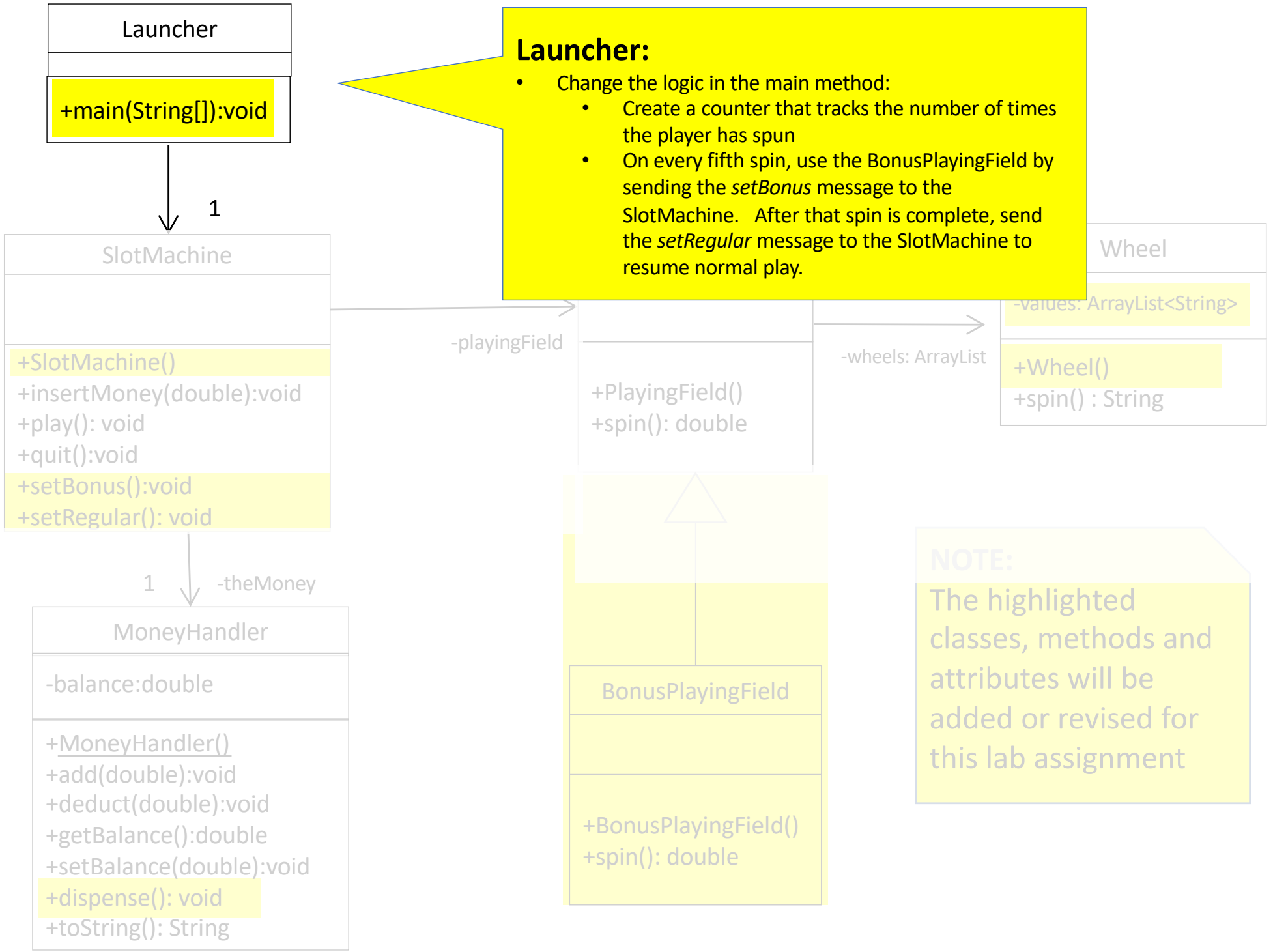
hods and
attributes will be
added or revised for
this lab assignment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Wheel
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+Wheel()
+spin() : String
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+setBalance(double):void
+dispense(): void
+toString(): String
BonusPlayingField
+BonusPlayingField()
+spin(): double
Launcher:
Change the logic in the main method:
Create a counter that tracks the number of times the player has spun
On every fifth spin, use the BonusPlayingField by sending the setBonus message to the SlotMachine. After that spin is complete, send the setRegular message to the SlotMachine to resume normal play.
NOTE:
The highlighted classes, methods and attributes will be added or revised for this lab assignment

Sample Output:

```
>java Launcher
How much money would you like to insert? 100
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Mango-Watermelon-Mango
Won 50 cents
You have a $ 100.25 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Plum-Watermelon-Mango
No prize
You have a $ 100.00 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Watermelon-Apple-Pear
No prize
You have a $ 99.75 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Banana-Banana-Banana
Won $1
You have a $ 100.50 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Pear-Apple-Pear
Won 50 cents
Bonus 5X...
Adjusted payout  2.50
You have a $ 102.75 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Watermelon-Banana-Pear
No prize
```

5th Spin

```
You have a $ 102.50 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Banana-Watermelon-Watermelon
Won 50 cents
You have a $ 102.75 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Apple-Pear-Plum
No prize
You have a $ 102.50 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Mango-Watermelon-Watermelon
Won 50 cents
You have a $ 102.75 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Watermelon-Apple-Apple
Won 50 cents
Bonus 3X...
Adjusted payout  1.50
You have a $ 104.00 balance
Spin/Quit (S/Q) : s
Paid  0.25 to spin....
Spun Apple-Banana-Plum
No prize
You have a $ 103.75 balance
Spin/Quit (S/Q) : q
Dispensed $ 103.75
```

10th Spin

Output file voucher.txt
Should contain this value