Mastery Add Coins Reflection Log

Credit Name: CSE 2110 Procedural Programming 1
Assignment Name: Mastery Add Coins

How has your program changed from planning to coding to now? Please explain?

From planning to coding I took the IPO chart that I made and started to flush out each line into code. Each part became more complex as I made a line of code for each prompt and stored their answer in the respective coins variable. I also created the second method getDollarAmount to total the user's coin amount and return it back to the main method to print out the user's total.

From coding to now I did not change anything really, all I did was create and edit the error log during my time coding and a little bit after finishing. I also changed the pennies conversion rate which was wrong. Something else I changed was the return type from double to string and the getDollarAmount method from double to string, this allowed me to format the totalamount variable to two decimal places.

Steps

(The package this file is in is Mastery)
I started off by importing java.util.scanner which allows me to get different data types from inputs. The public class is declared as addcoins (public makes it accessible from anywhere).

```java
package Mastery;

import java.util.Scanner;

public class addcoins {
```

Below it shows the public method "main" is static (you can access it without creating an object), void (method doesn't return any value), main (method name), and String[ ] args (String represents the data type [ ] indicates that it will be an array, and args (arguments) is the name of the array).

```java
public static void main(String[] args) {
```

The scanner object input is created below to take in inputs from the user.

```java
Scanner scanner = new Scanner(System.in);
```

Within the main method I first created a print statement to tell the user what this program will do.

```java
System.out.println("This program will cacluate the total amount of money your pennies, nickels, dimes, and quarters are worth. ");
```

I then created a print statement that prompts the user for the number of pennies they have (this will be added to their overall total amount of money in coins). I save their answer as an integer variable called pennies.

```
System.out.print("Enter the number of pennies: ");
int pennies = scanner.nextInt();
```

Next I made a print statement that prompts the user for the number of nickels they have (this will be added to their overall total amount of money in coins). I save their answer as a variable called nickels.

```
System.out.print("Enter the number of nickels: ");
int nickels = scanner.nextInt();
```

After this I created a print statement that prompts the user for the number of dimes they have (this will be added to their overall total amount of money in coins). I save their answer as a variable called dimes.

```
System.out.print("Enter the number of dimes: ");
int dimes = scanner.nextInt();
```

The last coin I counted was quarters, I asked the user for the number of quarters they have (this will be added to their overall total amount of money in coins). I save their answer as a variable called quarters.

```
System.out.print("Enter the number of quarters: ");
int quarters = scanner.nextInt();
```

After This I called a string method called getDollarAmount with the parameter (pennies, nickels, dimes, quarters) (this will make more sense later in my reflection log) The next line prints the total dollar amount that the main method gets from the getDollarAmount method so that the user can see their coins total value.

```
String totalAmount = getDollarAmount(pennies, nickels, dimes, quarters);
System.out.println("Total dollar amount: " + totalAmount);
```

I then end this method with a brace.

```
}
```

The Next public static string method I created was called getDollarAmount. The parameters passed to this method were the integer variables pennies, nickels, dimes, and quarters which we got from the user in the main method.

```
public static String getDollarAmount(int pennies, int nickels, int dimes, int quarters) {
```

After this I made a double variable called total amount, which multiplied each variable by their respective conversion rate (the conversion rate to get the number of the coin entered into the cent amount it is worth Ex. 2 quarters = 0.50). These cent amounts will then be added together to create the total amount all of the coins are worth.

```
double totalamount = (pennies * 0.01) + (nickels * 0.05) + (dimes * 0.1) + (quarters * 0.25);
```

Next I return the variable total amount back to the main method formatted to 2 decimal places (this is simply for clean visibility, it ensures all numbers are always two decimal places Ex. if I didn't have this you could get an answer like 23.5 instead of 23.50). This variable is the variable that the main method will then print out to show the user their total amount of coins in dollars/cents.

```
return String.format("$%.2f", totalamount);
```

Then I add a brace that closes the calculations within the getDollarAmount method.

```
}
```

And lastly, added a brace to close the public class addcoins.

```
}
```

Together they look like this.

```
    }
}
```