PROJECT 1

MONEY CONVERSION
SIMPLE DRAWING

CSCI 145
JAVA LANGUAGE

MAI PHAM

DEVELOPMENT ENVIRONMENT
ECLIPSE

TABLE OF CONTENTS

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PROJECT NOTE

OBJECTIVE:

- Part A: Write an application that ask the user for an amount between 0 to 100 and display it in currency denominations.
- Part B: Write a JavaFX application that draw 3 random size circles and 3 random sizes rectangles at random location.

SUMMARY:

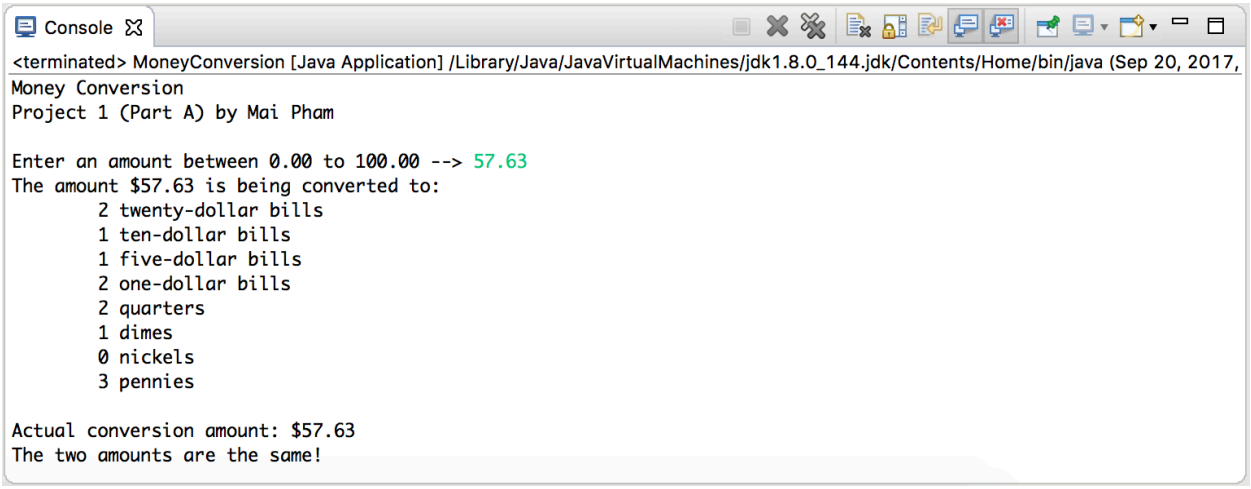
- I didn't encounter any problem with Part A until I ran some test cases. For certain amounts, the currency denominations total is short one penny. It is because when I mod the remainder and does the narrowing conversion, the remainder in the end got cut off. Therefore, I went back and edited the calculation in integer instead of double.
- As for Part B, I didn't have any issues with it and able to do the extra credit also.

CONCLUSION:

- Overall, my project is completed and successfully run both parts of the project and the extra credit.

OUTPUT FILE

MONEY CONVERSION

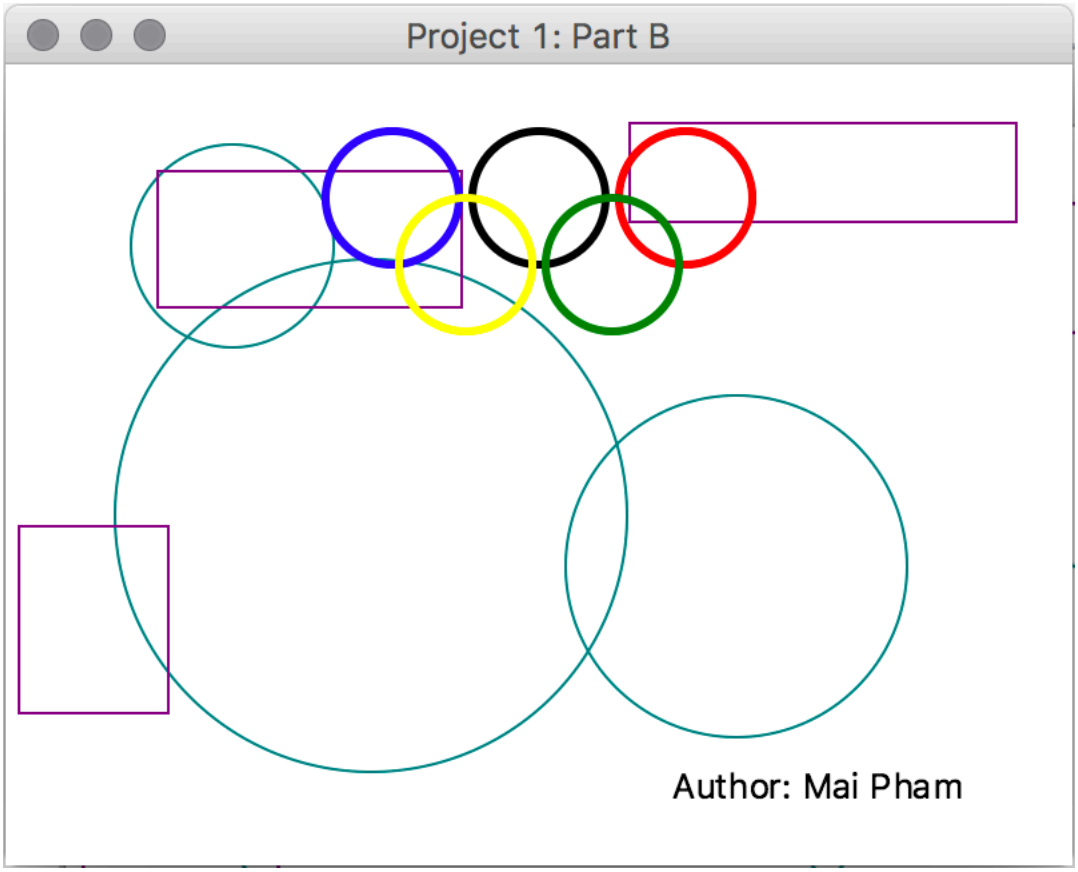


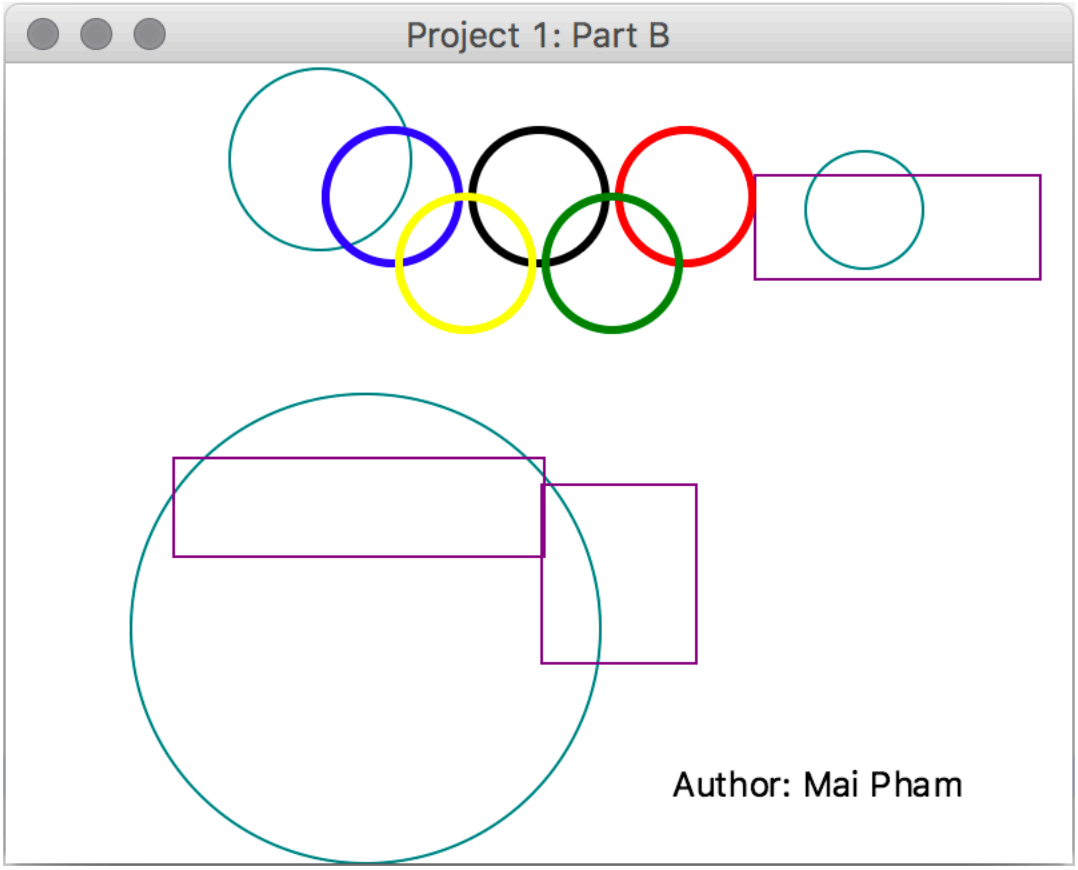
```
Console
<terminated> MoneyConversion [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/bin/java (Sep 20, 2017,
Money Conversion
Project 1 (Part A) by Mai Pham

Enter an amount between 0.00 to 100.00 --> 98.97
The amount $98.97 is being converted to:
        4 twenty-dollar bills
        1 ten-dollar bills
        1 five-dollar bills
        3 one-dollar bills
        3 quarters
        2 dimes
        0 nickels
        2 pennies

Actual conversion amount: $98.97
The two amounts are the same!
```

SIMPLE DRAWING





SOURCE CODE

MONEY CONVERSION

```
/*  Program:                Eclipse
    Author:                 Mai Pham
    Class:                  CSCI 145
    Date:                   09/21/2017
    Description:            Project 1 - Part A: Money Conversion
    I certify that the code below is my own work.
   Exception(s): N/A
*/
import java.util.*;
import java.text.NumberFormat;

public class MoneyConversion
{
    public static void main(String[] args)
    {
        double amount, total;
        int remainder;
        int twenty, ten, five, one, quarter, dime, nickel, penny;

        Scanner scan = new Scanner(System.in);
        NumberFormat fmt = NumberFormat.getCurrencyInstance();
```

```
        System.out.println("Money Conversion");
        System.out.println("Project 1 (Part A) by Mai Pham\n");

        System.out.print("Enter an amount between 0.00 to 100.00 --> ");
        amount = scan.nextDouble();

        System.out.println("The amount $" + amount + " is being converted to:");

        remainder = (int)(amount*100);

        twenty = remainder/2000;
        remainder = remainder % 2000;
        ten = remainder/1000;
        remainder = remainder % 1000;
        five = remainder/500;
        remainder = remainder % 500;
        one = remainder/100;
        remainder = remainder % 100;

        quarter = remainder/25;
        remainder = remainder % 25;
        dime = remainder/10;
        remainder = remainder % 10;
        nickel = remainder/5;
        remainder = remainder % 5;
        penny = remainder/1;
        remainder = remainder % 1;

        System.out.println("\t" + twenty + " twenty-dollar bills\n\t"
                           + ten + " ten-dollar bills\n\t"
                           + five + " five-dollar bills\n\t"
                           + one + " one-dollar bills\n\t"
                           + quarter + " quarters\n\t"
                           + dime + " dimes\n\t" + nickel + " nickels\n\t"
                           + penny + " pennies\n");

        total = (twenty*2000)+(ten*1000)+(five*500)+(one*100)
               +(quarter*25)+(dime*10)+(nickel*5)+(penny*1);
        total/=100;

        System.out.println("Actual conversion amount: " + fmt.format(total));

        if (amount == total)
               System.out.println("The two amounts are the same!");
        else
               System.out.println("The two amounts are not the same!");

        scan.close();
    }
}
```

SIMPLE DRAWING

```
/*  Program:                Eclipse
    Author:                 Mai Pham
    Class:                  CSCI 145
    Date:                   09/21/2017
```

```
    Description:            Project 1 - Part B: Simple Drawing
    I certify that the code below is my own work.
   Exception(s): N/A
*/
import javafx.application.Application;
import javafx.scene.Group;
import javafx.scene.Scene;
import javafx.scene.paint.Color;
import javafx.scene.shape.*;
import javafx.scene.text.Text;
import javafx.stage.Stage;

import java.util.*;

public class Drawing extends Application
{
    public void start(Stage primaryStage)
    {
       Random rand = new Random();
       int x, y, radius, width, height;

       Group g = new Group();

       for (int i = 0; i < 3; i++)
       {
           x = rand.nextInt(401);
           y = rand.nextInt(301);
           radius = rand.nextInt(81)+20;

           while (x + radius > 400 || y + radius > 300 || x - radius < 0 || y - radius < 0)
           {
               x = rand.nextInt(401);
               y = rand.nextInt(301);
               radius = rand.nextInt(81)+20;
           }
           Circle c = new Circle(x, y, radius);
           c.setFill(null);
           c.setStroke(Color.TEAL);
           g.getChildren().add(c);
       }

       for (int i = 0; i < 3; i++)
       {
           x = rand.nextInt(401);
           y = rand.nextInt(301);
           width = rand.nextInt(101)+50;
           height = rand.nextInt(61)+30;

           while (x + width > 400 || y + height > 300)
           {
               x = rand.nextInt(401);
               y = rand.nextInt(301);
               width = rand.nextInt(101)+50;
               height = rand.nextInt(61)+30;
           }
           Rectangle rect = new Rectangle(x, y, width, height);
           rect.setFill(null);
```

```
            rect.setStroke(Color.PURPLE);
            g.getChildren().add(rect);
        }

        Text quote = new Text(250, 275, "Author: Mai Pham");
        g.getChildren().add(quote);

        //EXTRA CREDIT
        Circle c1 = new Circle(145, 50, 25);
        c1.setFill(null);
        c1.setStroke(Color.BLUE);
        c1.setStrokeWidth(3);
        Circle c2 = new Circle(200, 50, 25);
        c2.setFill(null);
        c2.setStroke(Color.BLACK);
        c2.setStrokeWidth(3);
        Circle c3 = new Circle(255, 50, 25);
        c3.setFill(null);
        c3.setStroke(Color.RED);
        c3.setStrokeWidth(3);
        Circle c4 = new Circle(172.5, 75, 25);
        c4.setFill(null);
        c4.setStroke(Color.YELLOW);
        c4.setStrokeWidth(3);
        Circle c5 = new Circle(227.5, 75, 25);
        c5.setFill(null);
        c5.setStroke(Color.GREEN);
        c5.setStrokeWidth(3);

        Group root = new Group(g, c1,c2,c3,c4,c5);
        Scene scene = new Scene(root, 400, 300);

        primaryStage.setTitle("Project 1: Part B");
        primaryStage.setScene(scene);
        primaryStage.show();
    }

    public static void main(String[] args)
    {
        launch(args);
    }
}
```