## Problem:

Solve 3 scenarios:

1. Take coin counts and convert to cash value
2. Take cash value and convert to coin counts
3. Convert a date from US format to EU format

## Analysis:

Scenario 1:

Take in coin counts for quarters, dimes, nickels, and pennies from user to output a dollar cash value. For every coin, increase cash count by the value of one coin multiplied by amount of coins.

Scenario 2:

Take in dollar cash value from user and output the smallest number of coins possible in quarters, dimes, nickels, and pennies of equivalent value. Using separate loops for each coin type, decrease cash value and increase coin quantity until coin value is larger than remaining cash value until cash value has reached zero.

Scenario 3:

Take in a user entered date in the form (mm/dd/yy) and output that date in the form (dd/mm/yy). To do this, split the string at each forward-slash(/) into a separate array of strings. Then print out the separate array of strings with index 1 first, then index 0, and finally index 2.

## Source Code:

**package** lab\_1;

**import** java.util.Scanner;

**public** **class** Lab {

**public** **static** **void** main(String[] args)

{

**int** problem=0; //this value is used to determine which problem the program will solve in this instance

**int** quarters=0,dimes=0,nickels=0,pennies=0; //these values will be used for problems 1 and 2 as the coin quantities

**double** value=0; //this value will be used for problems 1 and 2 as the cash value

String date;

String trash;

String[] temp;

System.***out***.println("Please select a desired function:\n\n1. Input quantity and type of coins and return cash value");

System.***out***.println("\n2. Input cash value and return quantity and type of coins");

System.***out***.println("\n3. Input a date in US format and return EU format");

Scanner keyboard=**new** Scanner(System.***in***);

problem=keyboard.nextInt();

**switch**(problem)

{

**case** 1:

System.***out***.println("Enter number of quarters: ");

quarters=keyboard.nextInt();

System.***out***.println("Enter number of dimes: ");

dimes=keyboard.nextInt();

System.***out***.println("Enter number of nickels: ");

nickels=keyboard.nextInt();

System.***out***.println("Enter number of pennies: ");

pennies=keyboard.nextInt();

value=(.25\*(**int**)quarters)+(.1\*(**int**)dimes)+(.05\*(**int**)nickels)+(.01\*(**int**)pennies); //calculates cash value of the entered quantities of coins

System.***out***.println("The cash value of these coins is: $"+value);

**break**;

**case** 2:

System.***out***.println("Enter cash value: ");

value=keyboard.nextDouble();

value=(**double**)value\*100; //this was implemented to counteract a strange rounding error that was happening with decimals, so no there are no decimals with any cash value but the computation will still be accurate

**while**(value>24) //increases quantity of quarters in the solution and adjusts the cash value for further computation.

{

quarters=quarters+1;

value=(**double**)value-25;

}

**while**(value>9) //increases quantity of dimes in the solution and adjusts the cash value for further computation

{

dimes=dimes+1;

value=(**double**)value-10;

}

**while**(value>4) //increases quantity of nickels in the solution and adjusts the cash value for further computation

{

nickels=nickels+1;

value=(**double**)value-5;

}

**while**(value>0) //increases quantity of pennies in the solution and adjusts the cash value for further computation

{

pennies=pennies+1;

value=(**double**)value-1;

}

System.***out***.println("The least number of coins needed to fill this cash value is:");

System.***out***.println("\tQuarters: "+quarters+" Dimes: "+dimes+" Nickels: "+nickels+" Pennies: "+pennies);

**break**;

**case** 3:

System.***out***.println("Enter US formatted date(MM/DD/YY): ");

trash=keyboard.nextLine(); //takes in the extra garbage before data is collected

date=keyboard.nextLine();

temp=date.split("/"); //splits the original date by the forward slash into indexes in array of strings temp

System.***out***.println("Here is the EU formatted date: ");

System.***out***.println(temp[1]+"/"+temp[0]+"/"+temp[2]); //creates a EU formatted date

**break**;

}

keyboard.close(); //closes out keyboard input for safety measures

}

}

## Sample Runs:





