

Metric conversion:

I liked using the switch statement for this assignment and I also liked accounting for every scenario by printing 'invalid input' and ending the program.

Code:

```
import java.util.Scanner;

public class MetricConversion {

    public static void main(String[] args) {
        System.out.print("Enter a number: ");
        Scanner input = new Scanner(System.in);
        int num1 = input.nextInt();

        System.out.println(" ");
        System.out.println("Convert: ");
        System.out.println("1. Inches to Centimeters    5. Centimeters to Inches");
        System.out.println("2. Feet to Centimeters        6. Centimeters to Feet");
        System.out.println("3. Yards to Meters          7. Meters to Yards");
        System.out.println("4. Miles to Kilometers      8. Kilometers to Miles");
        System.out.println(" ");

        System.out.print("Enter your choice: ");
        int measurment = input.nextInt();
        System.out.println(" ");

        double conversion = 0;
        String measure1 = "";
        String measure2 = "";

        switch(measurment) {
            case 1:
                conversion = num1 * 2.54;
                measure1 = "inches";
                measure2 = "centimeters";
                break;
            case 2:
                conversion = num1 * 30;
                measure1 = "feet";
                measure2 = "centimeters";
                break;
            case 3:
                conversion = num1 * 0.91;
                measure1 = "yards";
                measure2 = "meters";
                break;
            case 4:
                conversion = num1 * 1.6;
                measure1 = "miles";
                measure2 = "kiloimeters";
                break;
            case 5:
                conversion = num1 / 2.54;
                measure2 = "inches";
                measure1 = "centimeters";
                break;
        }
```

```

        case 6:
            conversion = num1 / 30;
            measure2 = "feet";
            measure1 = "centimeters";
            break;
        case 7:
            conversion = num1 / 0.91;
            measure2 = "yards";
            measure1 = "meters";
            break;
        case 8:
            conversion = num1 / 1.6;
            measure2 = "miles";
            measure1 = "kiloimeters";
            break;
        default:
            System.out.println("invalid input");
            System.exit(0);
    }
    conversion = Math.round(conversion * 100);
    conversion = conversion/100;
    System.out.println(num1 + " " + measure1 + " equals " + conversion + " " + measure2 + ".");
}

```

Output:

Enter a number: 7

Convert:

- | | |
|--------------------------|--------------------------|
| 1. Inches to Centimeters | 5. Centimeters to Inches |
| 2. Feet to Centimeters | 6. Centimeters to Feet |
| 3. Yards to Meters | 7. Meters to Yards |
| 4. Miles to Kilometers | 8. Kilometers to Miles |

Enter your choice: 7

7 meters equals 7.69 yards.

Prime Number:

With this one I learned that I could declare new methods above and use them to simplify complex equations.

Code:

```

2
3 import java.util.Scanner;
4
5 public class PrimeNumber {
6
7     static boolean isPrime(int num)
8     {
9         if (num <= 1)
10             return false;
11
12         for (int inc = 2; inc <= Math.sqrt(num); inc++)
13             if (num % inc == 0)
14                 return false;
15
16         return true;
17     }
18     public static void main(String[] args) {
19         Scanner input = new Scanner(System.in);
20
21         System.out.print("Enter a number: ");
22         int prime = input.nextInt();
23
24         if (isPrime(prime)) {
25             System.out.println(prime + " is a prime number");
26         }
27
28         else {
29             System.out.println(prime + " is not a prime number");
30         }
31
32     }
33
34 }
35

```

Output:

```

Enter a number: 7
7 is a prime number

```

Add Coins:

At first I didn't create a new method but after some trials and tribulations I was able to create a function that converts the total dollar amount.

Code:

```

package Mastery;

import java.util.Scanner;

public class AddCoins {

    static String getDollarAmount(double quarters, double dimes, double nickels, double pennies) {
        String total = "$" + (quarters * 0.25 + dimes * 0.10 + nickels * 0.05 + pennies * 0.01);
        return total;
    }

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter your total coins:");
        System.out.println(" ");

        System.out.print("Quarters: ");
        double quarters = input.nextInt();

        System.out.print("Dimes: ");
        double dimes = input.nextInt();

        System.out.print("Nickels: ");
        double nickels = input.nextInt();

        System.out.print("Pennies: ");
        double pennies = input.nextInt();

        System.out.println(" ");

        System.out.println("Total: " + getDollarAmount(quarters, dimes, nickels, pennies));
    }
}

```

Output:

Enter your total coins:

Quarters: 56

Dimes: 34

Nickels: 345

Pennies: 2

Total: \$34.67