CSE 1321L: Programming and Problem Solving I Lab

Lab 8

Methods

Exercise #1: Design and implement a program (name it `MinMaxAvg`) that defines three methods as follows:

Method **max (int x, int y, int z)** returns the maximum value of three integer values.
Method **min (int X, int y, int z)** returns the minimum value of three integer values.
Method **average (int x, int y, int z)** returns the average of three integer values.

In the main method, test all three methods with different input value read from the user. Document your code and properly label the input prompts and the outputs as shown below.

Sample run 1:

```
You entered:    20, 8, 12
Max value:      20
Min value:      8
Average value:  13
```

Sample run 2:

```
You entered:    1, 2, 3
Max value:      3
Min value:      1
Average value:  2
```

Sample run 3:

```
You entered:    10, 5, 25
Max value:      25
Min value:      5
Average value:  13
```

Exercise #2: Design and implement a program (name it `ComputeAreas`) that defines four methods as follows:

Method **squareArea (double side)** returns the area of a square.
Method **rectangleArea (double width, double length)** returns the area of a rectangle.
Method **circleArea (double radius)** returns the area of a circle.
Method **triangleArea (double base, double height)** returns the area of a triangle.

In the main method, test all methods with different input value read from the user. Document your code and properly label the input prompts and the outputs as shown below.

Sample run:

```
Square side:    5.1
Square area:    26.01
```

```
Rectangle width:      4.0
Rectangle length:     5.5
Rectangle area:       22.0

Circle radius:        2.5
Circle area:          19.625

Triangle base:        6.4
Triangle height:      3.6
Triangle area:        11.52
```

Exercise #3: Design and implement a program (name it `PalindromeInteger`), to check if an integer value is a palindrome or not, using 2 methods (`reverse` and `isPalindrome`) specified as follows:

> Method **reverse(int number)** takes integer number and returns number in reverse order. The method mathematically reverses the number.
>
> Method **isPalindrome(int number)** takes integer number and returns true if the number is palindrome; false otherwise.

Use method reverse() to implement method isPalindrome(). Notice that an integer value is palindrome if the value and its reverse are equal.

In the main method, prompt the user to enter an integer value and the program should display proper judgment whether the input value is palindrome or not. Document your code and properly label the input prompts and the outputs as shown below.

```
Sample run 1:

Entered value:   1234
Judgment:        Not palindrome

Sample run 2:

Entered value:   123321
Judgment:        Palindrome

Sample run 3:

Entered value:   1001
Judgment:        Palindrome
```

Instructions:

1. Programs must be working correctly.
2. Programs must be completed and checked before working the assignment.
3. Programs must be checked by the end of the designated lab session.