TargetReady

assignment for day#1

Assignment #1

Calendar for given month and year

Implement the Java function listed below:

The function should accept month and year and print the calendar for the same. If inputs are invalid, appropriate error message/s should be printed.

Sample output for the inputs (8, 2018):

```
    Su
    Mo
    Tu
    We
    Th
    Fr
    Sa

    1
    2
    3
    4

    5
    6
    7
    8
    9
    10
    11

    12
    13
    14
    15
    16
    17
    18

    19
    20
    21
    22
    23
    24
    25

    26
    27
    28
    29
    30
    31
```

PS:

- Do not use any builtin Java classes like Date or Calendar
- Divide the function into small reusable functions, if possible.

Assignment #2

Number to words

Write a function called "inWords" that takes a number between 1 and 99,99,99,999 and returns a String representing the input number in words.

```
// should return "one crore two lakh three thousand forty"
inWords(101);
// should return "one hundred one"
```

Call the function in main, multiple times by supplying multiple values and verify the same.

Assignment #3

Classes, inheritance and polymorphism

Create the classes Shape, Circle, Rectangle, and Square as shown in the *UML* diagram below:

```
Shape
                -color:String = "red"
                -filled:boolean = true
                +Shape()
                +Shape(color:String, filled:boolean)
                +getColor():String
                +setColor(color:String):void
                +isFilled():boolean
                +setFilled(filled:boolean):void
                +toString():String
             Circle
                                                   Rectangle
                                       -width:double = 1.0
-radius:double = 1.0
                                       -length:double = 1.0
+Circle()
+Circle(radius:double)
                                       +Rectangle()
+Circle(radius:double,
                                       +Rectangle(width:double,
   color:String,filled:boolean)
                                          length:double)
+getRadius():double
                                       +Rectangle(width:double,
+setRadius(radius:double):void
                                          length:double,
                                          color:String,filled:boolean)
+getArea():double
+getPerimeter():double
                                       +getWidth():double
+toString():String
                                       +setWidth(width:double):void
                                       +getLength():double
                                       +setLength(legnth:double):void
                                       +getArea():double
                                       +getPerimeter():double
                                       +toString():String
                                                    Square
                                       +Square()
                                       +Square(side:double)
                                       +Square(side:double,
                                          color:String,filled:boolean)
                                       +getSide():double
                                       +setSide(side:double):void
                                       +setWidth(side:double):void
                                       +setLength(side:double):void
                                       +toString():String
```

The toString function of the above classes should return text as given below:

|Classname|Sample return value from toString()| |---|---| |Shape|A Shape with color of xxx and filled/Not filled| |Circle|A Circle with radius=xxx, which is a subclass of yyy

(where yyy is the output of the toString() method from the superclass)| |Rectangle|A Rectangle with width=xxx and length=zzz, which is a subclass of yyy (where yyy is the output of the toString() method from the superclass)| |Square|A Square with side=xxx, which is a subclass of yyy (where yyy is the output of the toString() method from the superclass)|

In the main() method of a Program class, create an array of 10 Shape references containing a mixture of Circle, Rectangle and Square objects of different dimensions. Using a loop, print the perimeter and area for all of them.

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