

Target UpCurve PE 2024

assignment on Java basics

Assignment #1

Calendar for given month and year

Implement the Java function listed below:

```
public static void printCalendar(int month, int year) {  
    /// do stuff here  
}
```

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.

```
public String inWords(int num) {  
    // do stuff here  
    return null;  
}
```

For example,

```
inWords(12345);  
// should return "twelve thousand three hundred forty five"  
inWords(10203040);
```

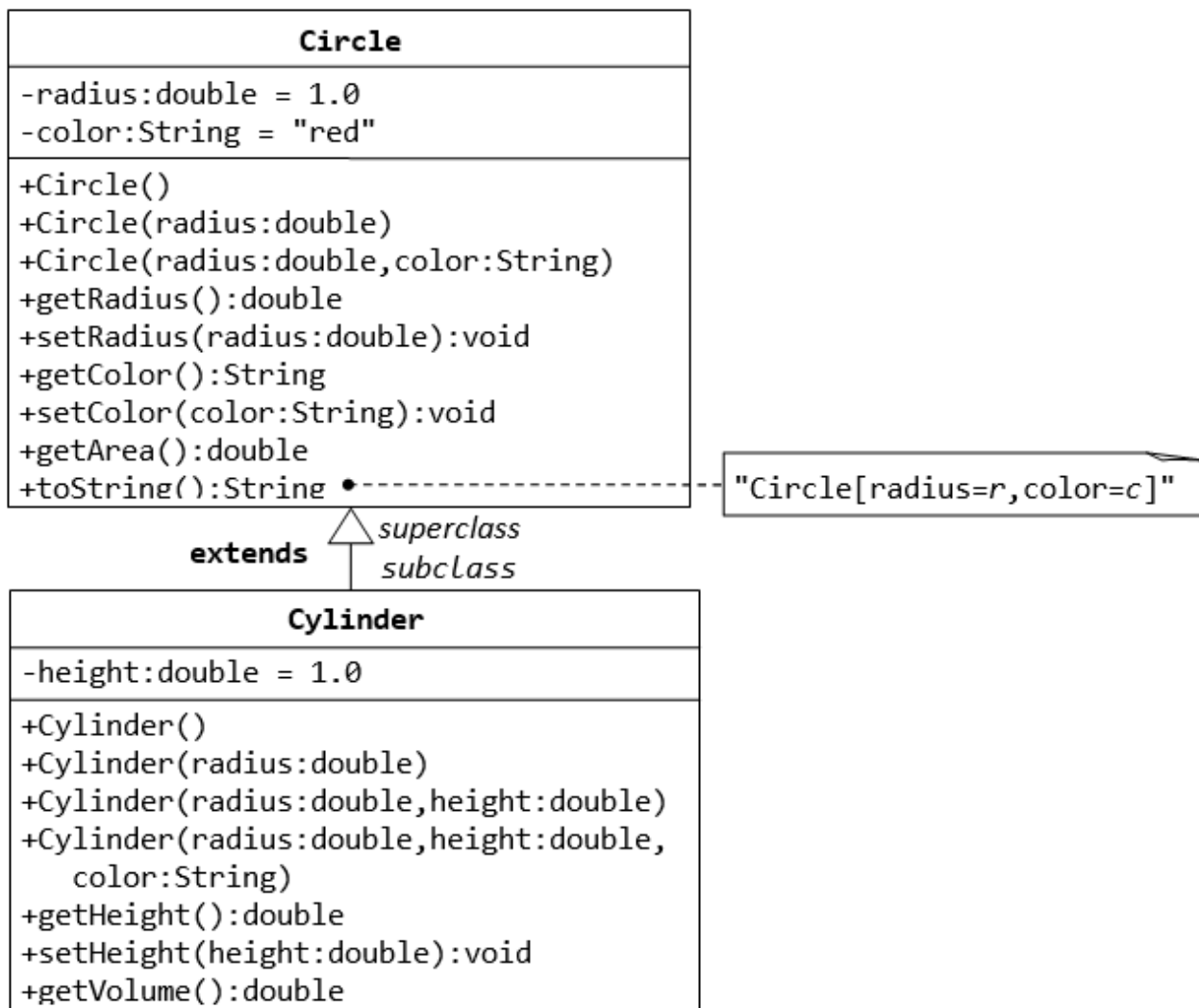
```
// should return "one crore two lakh three thousand forty"
inWords(101);
// should return "one hundred one"
```

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

Assignment #3

Inheritance and polymorphism

Create classes **Circle** and **Cylinder** as shown in the *UML* diagram below:



In the `main()` function of a Program class, create an array of **Circle** references with the initialization shown below:

```
Circle[] circles = {
    new Cylinder(12.34),
    new Cylinder(12.34, 10.0),
    new Cylinder(12.34, 10.0, "blue")
};
```

Print the area of the circular region of each cylinder along with the volume of the same.

Assignment #4

Reverse a sentence by words

Write a function called "reverseByWords", that takes a sentence (string) as an input, and returns another string. The return value must be a sentence in which the words in the original sentence appear in reverse order.

```
public String reverseByWords(String sentence) {  
    // do stuff here  
    return null;  
}
```

For example,

```
String out = reverseByWords("my name is vinod and i live in bangalore");  
// the variable "out" should be equal to "bangalore in live i and vinod is name"
```

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