CS 46A Fall 2022

Homework 02

Remember to follow our Programming Style Requirements!

Problem 2A

Start a new BlueJ project called hw2a in the cs46a/homework/hw02 folder.

Create a class Day and copy the code from Codecheck. Do not change the class in any way.

Create another class **DayProg** and do the following in the main() method:

1. Create a Day object for today
2. Display today's date using the object
3. Create another Day object for the Columbus Day on October 10, 2022
4. Display the date for the Columbus Day using the object
5. Call a method on the object for the Columbus Day to find out the number of days to the Columbus Day from today and store it in a variable
6. Display the number of days using the variable
7. Call a method on the object for today to change it to the date 23 days ago
8. Call methods on the object for today to display the year, month, and day of the date 23 days ago

The following is the output when the program is run on 2022-08-26.

```
Today is 2022-08-26.
The Columbus Day is 2022-10-10.
There are 45 days until the Columbus Day.
The date of 23 days ago is:
   Year : 2022
   Month: 8
   Day  : 3
```

Note that the program will display different dates when the program is run on different days, and you will get the dates on the server where Codecheck is running, which may be one day later than the date in San Jose if you run the program late at night.

[Codecheck link for 2A](#)

Problem 2B

Create a Java project with one class **ColumbusDay** and copy the start code from Codecheck. Complete the program by generating the following output:

```
The given string: Columbus Day
The length: 12
The character at index 0: C
The size 5 substring starting at index 0: Colum
ALL UPPER CASE: COLUMBUS DAY
all lower case: columbus day
all lower case with space removed: columbusday
The original word with ' ' replaced by '_': Columbus_Day
```

Three variables with initial values are given to you, and you should use the variables in your code when displaying the messages, since Codecheck will use different values to test your program.

Use method charAt() to get the character at the specified index position.
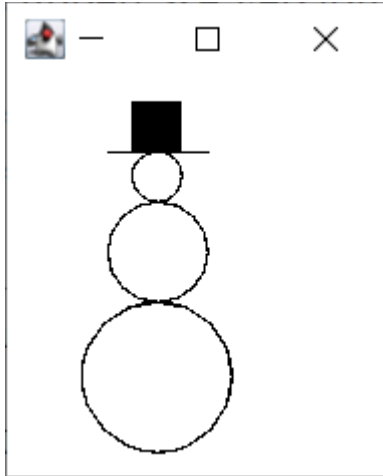
Remember that all the String methods are accessors, meaning they do not change the original String object.

You could declare additional local variables to store some values to make it easier for you.

[Codecheck link for 2B](#)

Problem 2C

Create a Java project and import the graphics package. Create a class SnowmanViewer and complete its main() method to draw a snowman like the following:

Follow the following pseudocode to draw the picture. All positions are the upper-left corner of the objects (rectangle, line, and circle).

1. Draw a rectangle of size 20 x 20 as the hat at position (50, 10).
2. Fill the hat with the default black color.
3. Draw a line for the hat brim at the bottom of the hat extending 10 pixels further each side. You need to figure out the position of the line.
4. Draw a circle of diameter 20 at position (50, 30).
5. Draw a circle of diameter 40 at position (40, 50).
6. Draw a circle of diameter 60. You need to figure out the position of the circle.

Codecheck link for 2C