Problem Set 10 - Ruby
Part VI

Write the following Ruby programs in separate files such that the name of each file is in the format

`mainX`*n*`.rb`

where *n* is the number of the program in the list below. Each program must use blocks.

Programs:

1. Write a program that creates a class named *Rectangle* that constants
   - A float field named *length*.
   - A float field named *width*.
   - A public constructor that initializes both fields to 1.
   - A public getter method for *length* named `length()`.
   - A public getter method for *width* named `width()`.
   - A public setter method for *length* named `length=()` that takes a float parameter and assigns the parameter to *length* only if the parameter is positive and at least the value of *width*.
   - A public setter method for *width* named `width=()` that takes a float parameter and assigns the parameter to *width* only if the parameter is positive and at most the value of *length*.
   - A public double `area()` that returns the product of *length* and *width*.
   - A public double `perimeter()` that returns twice the sum of *length* and *width*.
   - A public overridden `to_s()` that returns a rectangular string of asterisks with a length and width equal to *length* and *width*, respectively.
2. Write a program that
   - Creates two *Rectangle* objects,
   - Manipulates the *Rectangle* objects to represent an 8 by 6 rectangle and a 6 by 5 rectangle, respectively,
   - Displays the objects.
3. Write a program that creates a class named *Editor* that contains
   - An integer class field named *count* initialized to 0.
   - A string field named *content*.
   - A public constructor that initializes *content* to the string `"content"` and increments *count* by 1.
   - A public constructor that takes a string parameter, initializes *content* to the parameter, and increments *count* by 1.
   - A public getter method for *content* named `content()`.
   - A public class getter method for *count* named `count()`.
   - A public setter method for *content* named `content=()` that takes a string parameter and assigns the parameter to *content*.
   - A public method named `uppercases()` that takes no parameters and removes all characters from *content* that are not an uppercase letter.
   - A public method named `lowercases()` that takes no parameters and removes all characters from *content* that are not a lowercase letter.
   - A public method named `digits()` that takes no parameters and removes all characters from *content* that are not digits.
   - A public method named `to_upper()` that takes no parameters and makes all letters of *content* into uppercase letters.
   - A public method named `to_lower()` that takes no parameters and makes all letters of *content* into lowercase letters.
   - A public overridden `to_s()` that returns a rectangular string of asterisks with a length and width equal to *length* and *width*, respectively.
4. Write a program that
   - Creates five *Editor* objects,
   - Assigns each object the same value that contains a mixture of letters, digits, and other characters.
   - For each object, invokes a different method from the list of methods `uppercase()`, `lowercase()`, `digits()`, `to_upper()`, and `to_lower()`.
   - Displays the number of objects and the objects.