



Object Oriented Paradigm

Lab 03

Topic(s): Class Skeleton, Member Variables & Functions, Object Initialization, Default & Parameterized Constructors, Setters & Getters

Question No. 01

Create a class Rectangle. The class has attributes length and width, each of which defaults to 1. It has member functions that calculate the perimeter and the area of the rectangle. It has set and get functions for both length and width. The set functions should verify that length and width are each floating-point numbers larger than 0.0 and less than 20.0.

Question No. 02

Write the definition of a class, swimmingPool, to implement the properties of a swimming pool. Your class should have the instance variables to store the length (in feet), width (in feet), depth (in feet), the rate (in gallons per minute) at which the water is filling the pool, and the rate (in gallons per minute) at which the water is draining from the pool. Add the setters and getters for each of the class properties. Also add member functions to do the following: determine the amount of water needed to fill an empty or partially filled pool; determine the time needed to completely or partially fill or empty the pool; add or drain water for a specific amount of time.

Question No. 03

Design and implement a class `dayType` that implements the day of the week in a program. The class `dayType` should store the day in a character array. The program should be able to perform the following operations on an object of type `dayType`:

- Set the day.
- Print the day.
- Return the day.
- Return the next day.
- Return the previous day.
- Calculate and return the day by adding certain days to the current day. For example, if the current day is Monday and we add 4 days, the day to be returned is Friday. Similarly, if today is Tuesday and we add 13 days, the day to be returned is Monday.