8. What are differences between constructors and methods?

A constructor must be called at the initiation of an object, and cannot return anything, therefore having no return type. On the other hand, methos are used to create functionality for an object, and may return a value.

9. Use examples to explain passing-by-value and passing-by-reference. Explain when you should use passing-by-value and passing-by-reference.

Passing-by-reference means when arguments are passed into functions, the parameters used in the function refer the same variable that was passed in when the function was called. For example, in this function:

public void AddOne(int x){

x++;

}

When it is called:

int var = 0;

AddOne(var);

The variable var would increase by one. On the other hand, passing-by-value means the variable inside the function is a separate copy of the parameter, and in the example, x would increase but var wouldn’t;

Coding Questions

24. Use constructor and method overloading, static data, and static methods to code a complete class that can covert seconds, minutes, and hours (or a combination thereof) to days. If the number of days exceeds 6, the result will be converted to the number of integral weeks and any remaining portion expressed as days. Write a driver code to test your class using a variety of data to create corresponding objects based upon the entries and display the results of the conversions. Save all of your files.

25. Improve your answer to Question 24. Instead of using hard-coded data, ask the user to enter a variety of data, then create the corresponding objects converting these data to days (or weeks), and display the result. Your driver code will continue to run until the user enters 'n' to stop.