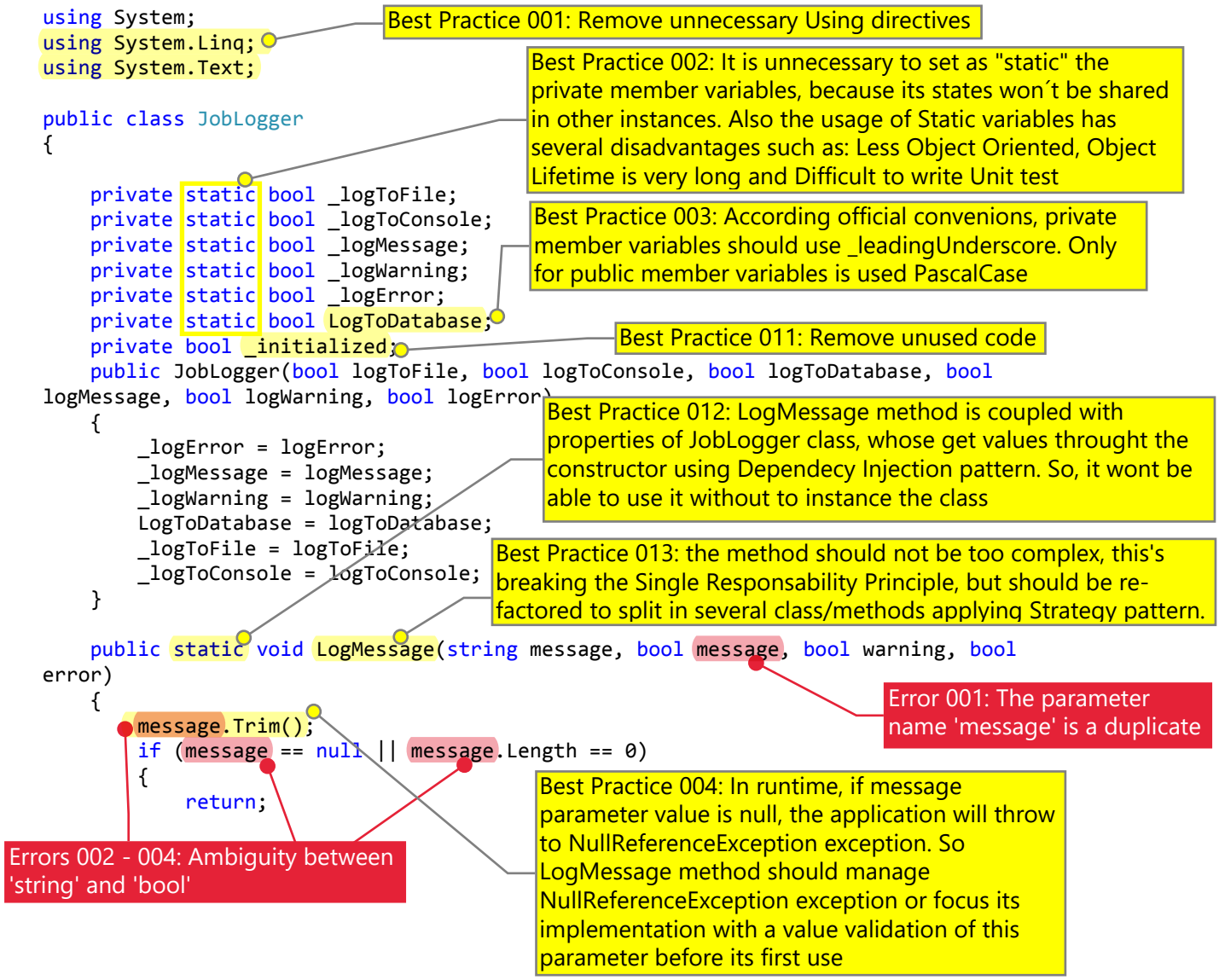
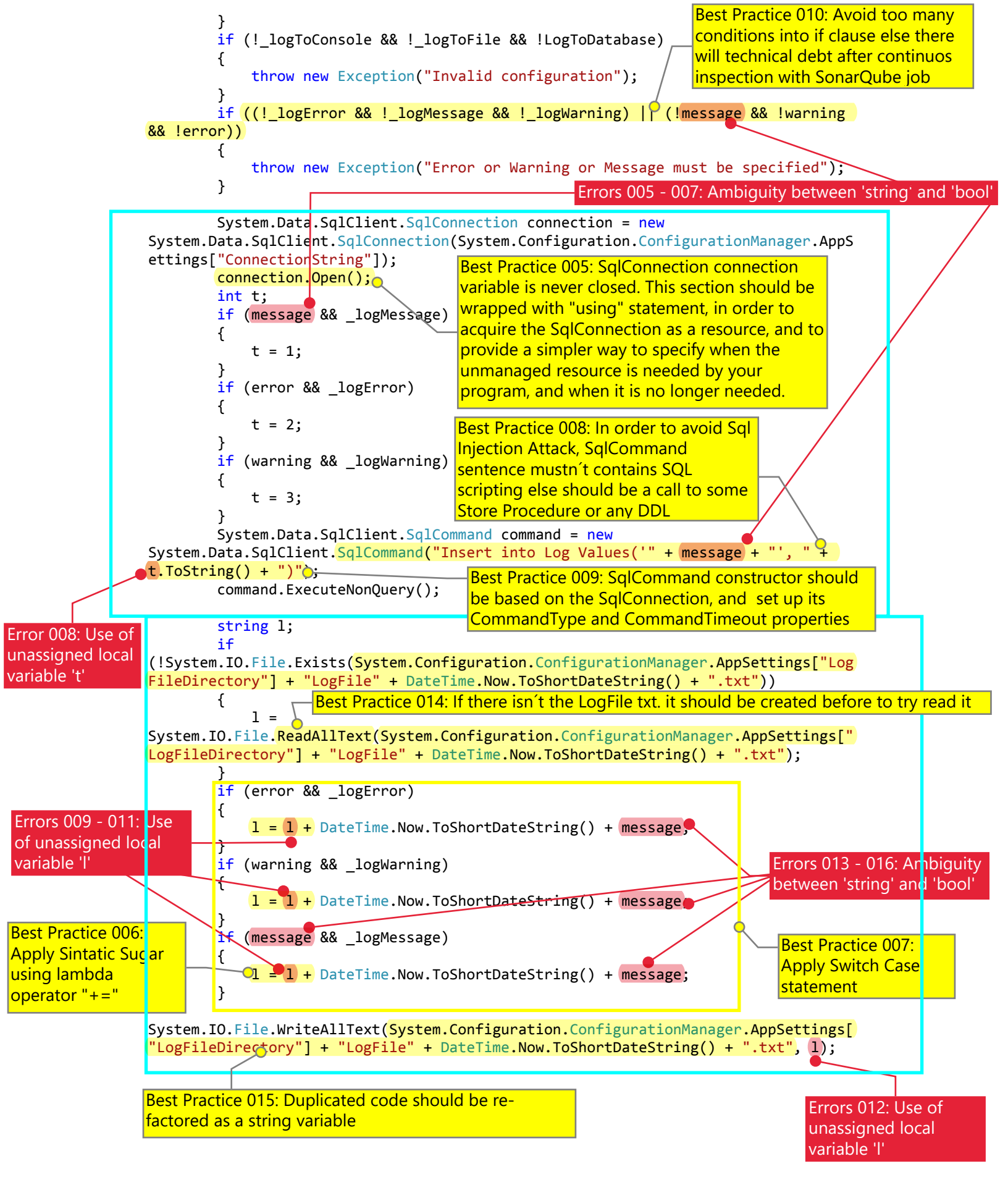
Code Review

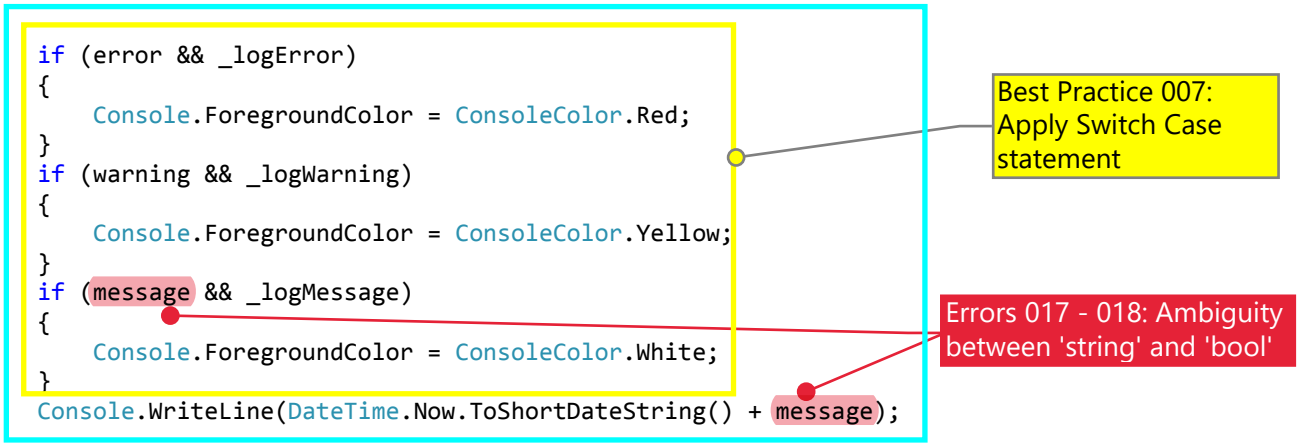
Please review the following code snippet. Assume that all referenced assemblies have been properly included.

The code is used to log different messages throughout an application. We want the ability to be able to log to a text file, the console and/or the database. Messages can be marked as message, warning or error. We also want the ability to selectively be able to choose what gets logged, such as to be able to log only errors or only errors and warnings.

1) If you were to review the following code, what feedback would you give? Please be specific and indicate any errors that would occur as well as other best practices and code refactoring that should be done.
2) Rewrite the code based on the feedback you provided in question 1. Please include unit tests on your code.




}
if (!_logToConsole && !_logToFile && !LogToDatabase)
{
throw new Exception("Invalid configuration");
}
if ((!_logError && !_logMessage && !_logWarning) || (!message && !warning && !error))
{
throw new Exception("Error or Warning or Message must be specified");
}
System.Data.SqlClient.SqlConnection connection = new System.Data.SqlClient.SqlConnection(System.Configuration.ConfigurationManager.AppSettings["ConnectionString"]);
connection.Open();
int t;
if (message && _logMessage)
{
t = 1;
}
if (error && _logError)
{
t = 2;
}
if (warning && _logWarning)
{
t = 3;
}
System.Data.SqlClient.SqlCommand command = new System.Data.SqlClient.SqlCommand("Insert into Log Values('" + message + "', " + t.ToString() + ")");
command.ExecuteNonQuery();
string l;
if (!System.IO.File.Exists(System.Configuration.ConfigurationManager.AppSettings["LogFileDirectory"] + "LogFile" + DateTime.Now.ToShortDateString() + ".txt"))
{
l =
System.IO.File.ReadAllText(System.Configuration.ConfigurationManager.AppSettings["LogFileDirectory"] + "LogFile" + DateTime.Now.ToShortDateString() + ".txt");
}
if (error && _logError)
{
l = l + DateTime.Now.ToShortDateString() + message;
}
if (warning && _logWarning)
{
l = l + DateTime.Now.ToShortDateString() + message;
}
if (message && _logMessage)
{
l = l + DateTime.Now.ToShortDateString() + message;
}
System.IO.File.WriteAllText(System.Configuration.ConfigurationManager.AppSettings["LogFileDirectory"] + "LogFile" + DateTime.Now.ToShortDateString() + ".txt", l);
Best Practice 010: Avoid too many conditions into if clause else there will technical debt after continuos inspection with SonarQube job
Errors 005 - 007: Ambiguity between 'string' and 'bool'
Best Practice 005: SqlConnection connection variable is never closed. This section should be wrapped with "using" statement, in order to acquire the SqlConnection as a resource, and to provide a simpler way to specify when the unmanaged resource is needed by your program, and when it is no longer needed.
Best Practice 008: In order to avoid Sql Injection Attack, SqlCommand sentence mustn´t contains SQL scripting else should be a call to some Store Procedure or any DDL
Best Practice 009: SqlCommand constructor should be based on the SqlConnection, and set up its CommandType and CommandTimeout properties
Error 008: Use of unassigned local variable 't'
Best Practice 014: If there isn´t the LogFile txt. it should be created before to try read it
Errors 009 - 011: Use of unassigned local variable 'l'
Errors 013 - 016: Ambiguity between 'string' and 'bool'
Best Practice 006: Apply Sintatic Sugar using lambda operator "+="
Best Practice 007: Apply Switch Case statement
Best Practice 015: Duplicated code should be re-factored as a string variable
Errors 012: Use of unassigned local variable 'l'




```
    }
}
```

For each skyblue box:
1. There isn't any conditional or switch structure which its respective section be wraped according the context to log messages
2. It should be re-factored in other class/methods using Strategy pattern according its respective context to log messages
3. Other missing best practice is set a comment about each method and/or code block