MALMÖ HÖGSKOLA
School of Technology

Programming Using .NET, Basic Courses
For both C# and VB

Quality Standards and Guidelines

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Quality Standards and Guidelines

The guidelines here apply to all assignments and the project work. These will be highly considered in grading of the assignments. If you have any suggestion for improvements or opinion on any of the terms, please share it with us through the forums on the platform ITS.

It is very essential to apply a good design and code with maintainability, extensibility and readability in mind. The achieve these goals, we will use as much of the OOP aspects as possible so that further development can be carried out easily.

1. **Requirements**:

1.1 The console applications in the first part of the course, i.e. Modules 1 and 2, must consist of at least two classes for C# projects, and at least one class and a maximum of one module for VB projects. The start-up class (Module in VB) containing the method Main should contain as little code as possible. Follow the assignment instructions and model.

1.2 In most part of the course, starting from Module 3, we will be working only with applications containing a graphical user interface (GUI) for interaction with the user. The GUI class should only include code that has to do with the user interactions. All other tasks should be done by other classes. The GUI class should use the services of other classes. It should not do any manipulation of data if and when it can be done by other classes. Remember that when working GUI applications in VS, you do not need to do any programming in the start-up file and its Main method. VS will take care of that while you begin your with the start-up form (Form1) and/or your own classes.

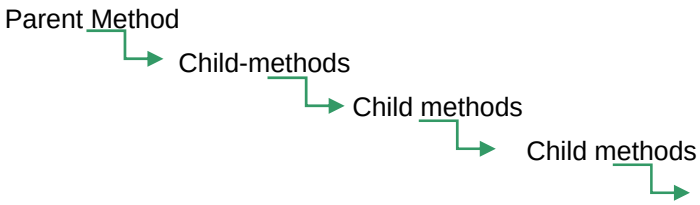
1.3 The GUI components should only be used for presentation of data. .All data must be saved in the related class (animal data should be saved in Animal objects, and so on). A couple of advices from your course leader on design of GUI:

1.3.1 Keep your GUI simple; have the “dumb” user in mind.
1.3.2 Follow the standards (File-View…Help when designing menus)

1.4 Give all default name that VS gives to components such as Textbox1, Button1, etc more meaningful names, **txtFirstName**, **btnCalculate**, etc.

1.5 Do not forget to document your source code by writing comments above or in front of statements.

1.6 Avoid long methods. Break down a long method into one main method that calls smaller ones. Exchange of data can be done through method parameters or instance variables. Every method should be responsible for a single task. Use the following pattern:



Rules of thumb:

1.6.1 One method for one operation only,

1.6.2 No method should be longer than an A-4 page, preferably even shorter. When a method begins to grow in size, move blocks of code inside if-else and case statements (in switch) and other separable blocks and create smaller methods.

1.7 All identifiers (class names, variable names and method names) should be chosen carefully so that they express their purpose. The suggested solutions to the exercises can be taken as a guide. Short names that are not expressive (ex a, fnc, etc.) and should be strictly avoided. An exception is counter variables in loops. Begin variable names with a small letter and method names with a capital letter

1.8 The application must have been compiled, tested and run satisfactorily before it is submitted. It is very important to maintain a good style and code structure and a normally functioning program, rather than presenting a well functioning program, but with a poor code quality. Higher grades are given to projects containing well-structured and reasonably documented code, and a satisfactorily working program.

1.9 All types of foreseeable errors must be taken care of in your programming. Your program should absolutely not crash for wrong input or common errors such division by zero, file not found and so on. Write your name and the date on every file (as comments).

Visual Basic Course only:

1.10 If you have worked VB's earlier version, be aware that no VB6 (or older) function (e.g CDbl, CInt, Val, etc) are allowed. Use objects provided in the .NET Framework. You will always find an object in the Framework that has the features from the old VB version. Even the VB constants are substituted by structures and enums in .NET. As an example Environment.NewLine replaces the VB constant vbCrLf.

1.11 Option Explicit and Option Strict must be set to "on" in all files.

```
1  'Mandatory:  All vb files must begin
2  'with the following two lines!
3   Option Explicit On
4   Option Strict On
5
6  Module Module1
```

These options can be set to **On** in Visual Studio through the **Tools** (**Options**) menu as default for all projects, but it, unfortunately, seems that this feature does not work. Therefore, you have to copy the above statements manually into all code files.

2. Recommendations

2.1 . Although It is no longer modern to use prefix or Hungarian notations with variables, it is recommended to use a three (or more) letter prefix for GUI components, as recommended in the table below:

Textbox	txt	txtFirstName
Label	lbl	lblTotalSum
Button	btn	btnOK
RadioButton	rbtn	rbtnMonthly
CheckBox	chk	chkCaseSensitive
GroupBox	grp	grpInput
ListBox	lst	lstResult
ListView	lvw	lvwResult
Menu	mnu	mnuFileSave
Etc..		

The components that you will not be using in your code may keep their default values.

2.2 Make your own assumptions whenever you find instructions unclear. Document your assumptions directly in the code or as an extra note to your instructor.

2.3 You may practice improvements, optimizations and enhancements to the coding structure and the user interface if you are not a beginner. However, certain instructions may be marked as mandatory in which case you are expected to follow the instructions. Save all files often. By saving only the project file results only in saving **cproj** (or **vbproj**) file. You need to save all files. When taking back-ups, use a file manger like Windows Explorer.

2.4 When working with Windows program and using Visual Studio, you do not have anything to do with the class Program.cs, (or Module1, VB) or its Main method. Visual Studio takes care of that and provides code for start of your application. Your work begins directly with the starting form which by default gets the Form1 name. Change the default name to something more meaningful, e.g **MainFrame**.

3. Assessment:

3.1 The assignment is graded according to the Swedish system, Failed (U), Passed (G), or Passed with Distinction (VG). Foreign students will also receive a letter grade A-F according to ECT system.

2.2 Projects that do not meet the minimum criteria for a passing grade will be returned for complementary work. The final result for all assignments will be determined as a weighted average of all assignments plus the instructor's judgment of the progress you make throughout the course.

4. Submission

Before you make a submission, go through the following checklist:

- All the requirements specified so far in this document are implemented
- The project has no compilation or run time error.
- The application is tested and runs satisfactorily

When you are satisfied with the above, take a back-up of your project and then go ahead with the submission process.

4.1 The files are to be packed into a ZIP or RAR file and submitted in It's Learning (ITS). A trial version of WinRar can be downloaded from the Internet from www.winrar.com .

4.2 Make sure to include all the files that are part of your project. If you are using Visual Studio, don't forget to include all files and subfolders in your zip or rar file. Sending only the **sln** or **cproj** (**vbproj**) file is not enough. Include even the folder **Properties** with C# and **My Project** with VB projects and all the files saved in these folders on your computer.

4.3 **Assignments cannot be sent by email**. The grades cannot be set until you make a submission in the ITS. The instructors do not have the possibility of sett any grade before you have performed a submission action (with or without attachments) in ITS. The record of your grades will always be maintained by ITS.

4.4 Although it is allowed to discuss solutions and ideas with other classmates, the assignments are done and submitted individually (the Project Work is exempted). You must apply your own solution and you are not allowed to copy and submit same code as any other. It is expected that you have gone through all the recommended readings, done exercises and quizzes before starting with an assignment. If you understand and can follow the optional

exercises, and the code examples available for this module, you shouldn't face any problem with this assignment.

Remember to save your work often and take always a back up on a moveable or en extern disk.

Good Luck!

Programming is fun. Never give up. Ask for help!

Farid Naisan,,

Instructor and Course Responsible