



High-Quality Code: Course Introduction

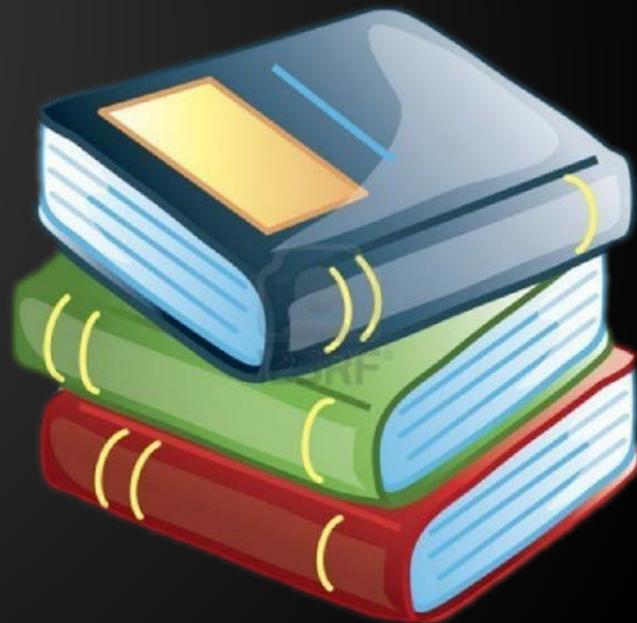
Course Program, Evaluation, Exams, Resources

Telerik Software Academy
Learning & Development
<http://academy.telerik.com>



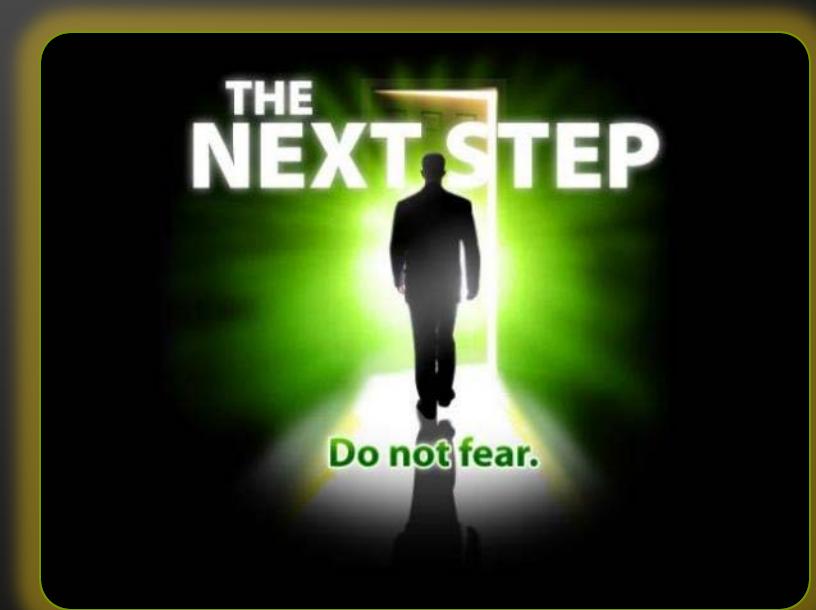
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High-Quality Code

The Next Module in the Software Academy
(Programming Track)



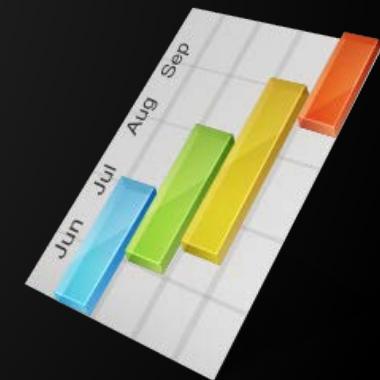
Next Step in Telerik Software

- ◆ High-Quality Code
 - ◆ Continuation of OOP course
 - ◆ Quality coding, unit testing, refactoring, software engineering, design patterns
 - ◆ Lectures once a week
- ◆ The course exam?
 - ◆ Team work project
 - ◆ Practical exam



High-Quality Code Course Program

What Will Be Cover in the Course?



The Course Program

1. **Course Overview.**
Introduction to High-Quality Programming Code.
Code Formatting
2. **Correctly Naming Identifiers in the Code (Classes, Properties, Methods, Parameters, Variables, etc.)**
Code Documentation and Comments
3. **Using Variables, Data, Expressions and Constants.**
Using Control Structures, Conditional Statements and Loops
4. **High-Quality Methods. Cohesion and Coupling.**
High-Quality Classes and Class Hierarchies

The Course Program (2)

5. **Defensive Programming and Exceptions.**
Performance Tuning and Code Optimization
6. **Unit Testing. Mocking. Test-Driven Development**
7. **Code Refactoring. Refactoring Patterns.**
Effective Debugging: Tools and Techniques
8. **Development Tools. IDEs. Change Management Systems.** **Code Analysis Tools. Automated Testing Tools.** **Automated Build Tools. Continuous Integration Tools.** **Team Collaboration Tools**
9. **Design Patterns: the Classical GoF Patterns**

The Course Program (3)

- 10. Fundamentals of Software Engineering (Idea, Architecture, Design, Implementation, Testing, Deployment, Support). Development Methodologies. Scrum. Project Management
- 11. Exam Preparation
- 12. Teamwork Projects
- 13. Teamwork Public Defense
- 14. Practical Exam



The Trainers Team



◆ Nikolay Kostov

- ◆ Team Lead, Senior Developer and Trainer @ Telerik Corp.
- ◆ Student at Sofia University
 - ◆ Computer Science
- ◆ IT and Informatics competitions contestant
- ◆ Graduate from the second season of Telerik Software Academy
- ◆ Email: [nikolay.kostov \[at\] telerik.com](mailto:nikolay.kostov@telerik.com)
- ◆ Blog: <http://nikolay.it>



◆ Doncho Minkov

- ◆ Senior Technical Trainer
@ Telerik Software Academy
- ◆ Student in Sofia University
 - ◆ Software Engineering
- ◆ Contestant in the Informatics competitions
- ◆ Graduate from the first season of
Telerik Software Academy
- ◆ Email: [doncho.minkov \[at\] telerik.com](mailto:doncho.minkov@[at]telerik.com)
- ◆ Blog: <http://minkov.it>



Trainers Team (3)

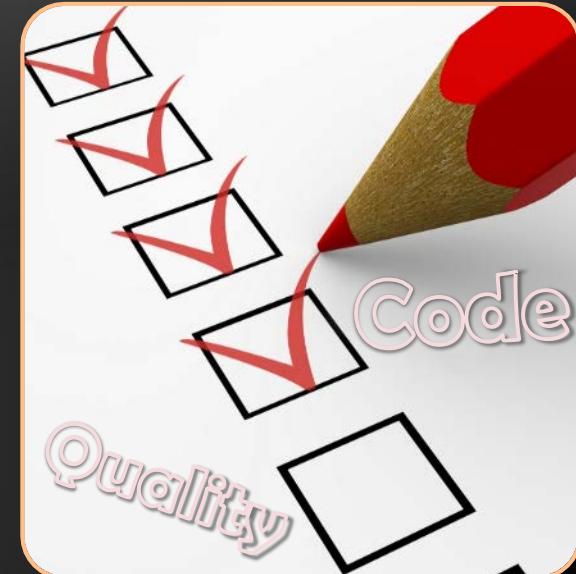
◆ Ivaylo Kenov

- ◆ Junior Technical Trainer @ Telerik Software Academy
- ◆ Graduate from the fourth season of Telerik Software Academy
- ◆ Mathematical competitions contestant
- ◆ E-mail: ivaylo.kenov [at] telerik.com
- ◆ Champion in OOP and DSA



Evaluation

Thank God There Are Bonuses!



High-Quality Code – Evaluation

- ◆ **Evaluation components**
 - ◆ Practical exam – 60%
 - ◆ Team work – 15%
 - ◆ Homework – 10%
 - ◆ Homework evaluation – 5%
 - ◆ Attendance in class – 10%
- ◆ **Bonuses**
 - ◆ Forums activity – bonus up to 5%



Pass / Excellence / Fail Criteria

- ◆ Criteria for pass / pass with excellence / fail

- ◆ Pass with excellence

- ◆ Very high exam results

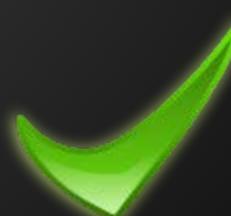
- or



- ◆ High total results

- ◆ Pass

- ◆ Average total results



- ◆ Fail

- ◆ Low total results or 0 at the exam



Homework Peer Reviews

- ◆ Everyone will get feedback for their homework
- ◆ Everyone will give feedback for few random homework submissions
 - ◆ Students submit homework anonymously
 - ◆ Please exclude your name from the submissions!
 - ◆ For each homework submitted
 - ◆ Students evaluate 3 random homeworks
 - ◆ From the same topic, after the deadline
 - ◆ Give written feedback, at least 200 characters
 - ◆ Low-quality feedback → report for punishment

Teamwork Project

- ◆ Teamwork project requirements
 - ◆ Teams of 3-5 students (balanced random)
 - ◆ Given a low-quality C# project
 - ◆ Refactor the code
 - ◆ Improve its quality and make it testable
 - ◆ Write unit tests (with high coverage) + docs
 - ◆ Use source control system
 - ◆ Each team member should have commits during the whole assignment
 - ◆ Public project defense

- ◆ You will be given a C# interface
 - ◆ You need to implement it (write the code)
 - ◆ According to the documentation
 - ◆ Write unit tests
 - ◆ High code coverage
 - ◆ Catch all possible defects
 - ◆ Assessment
 - ◆ Unit tests will be automatically checked
 - ◆ Additional manual check



Use the Same Email!

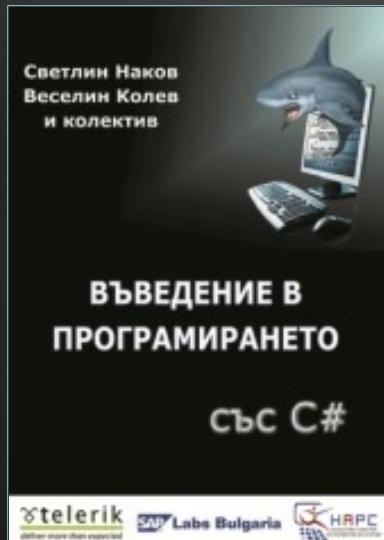
- ◆ Please use the same email address in:
 - <http://telerikacademy.com>
 - <http://bgcoder.com>
 - <http://forums.academy.telerik.com>
- ◆ Otherwise your score could be incorrectly calculated!





Recommended Books

The C# Textbook

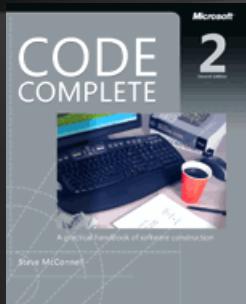


The official textbook for the course

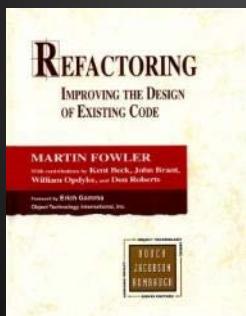
- ◆ “Introduction to Programming with C#”, Nakov S. and his team, 2010
- ◆ Freely downloadable from:
www.introprogramming.info

- ◆ The C# programming tracks follows the book
- ◆ High-quality code → chapter 21

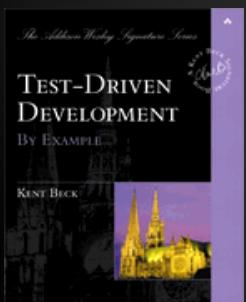
Recommended Books



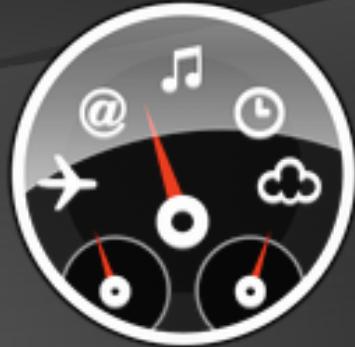
Code Complete, 2nd Edition, Steve McConnell, ISBN 0735619670,
<http://www.cc2e.com>



Refactoring: Improving the Design of Existing Code, Martin Fowler, Kent Beck, John Brant, William Opdyke, Don Roberts, ISBN 0201485672,
<http://martinfowler.com/>

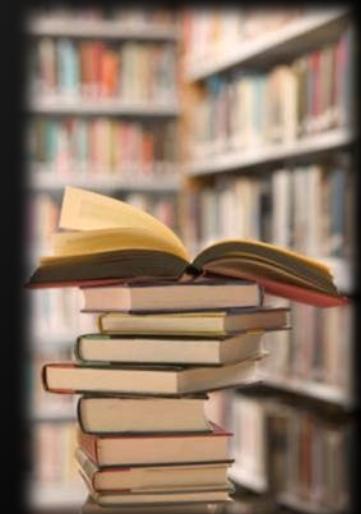
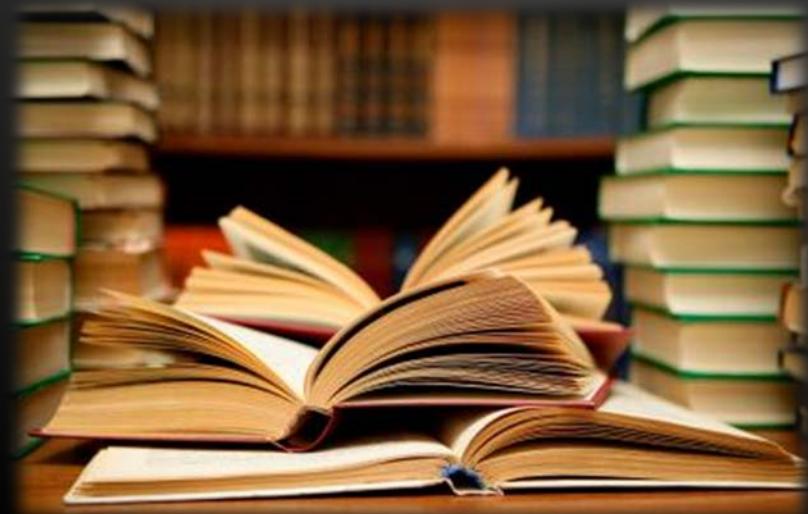


Test Driven Development: By Example, Kent Beck, ISBN 0321146530



Resources

What We Need in Addition to this Course Content?



Course Web Site & Forums

- ◆ Register for the "Telerik Academy Forums":

forums.academy.telerik.com/high-quality-code

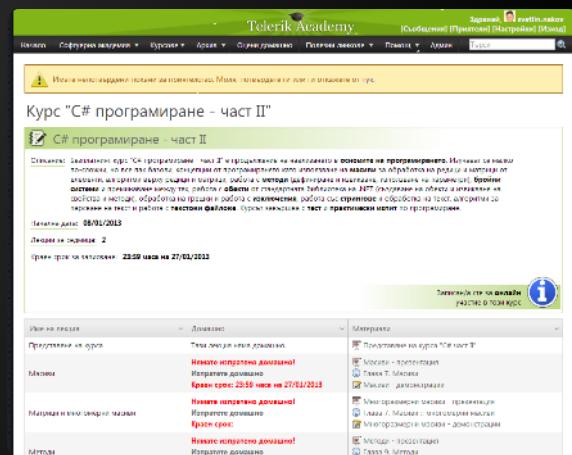
- ◆ Discuss the course exercises with your colleagues
 - ◆ Find solutions for the exercises
 - ◆ Share source code / discuss ideas
- ◆ The High-Quality Code official web site:



<http://academy.telerik.com/student-courses/programming/high-quality-code/>

Telerik Integrated Learning System (TILS)

- The Telerik Integrated Learning System (TILS)
 - www.telerikacademy.com
 - Important resource for all students
 - Homework submissions
 - Homework peer reviews
 - Presence cards with barcode
 - Reports about your results



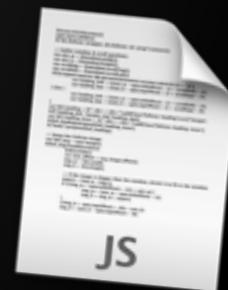
telerikacademy.com/Courses/Courses/Details/174

Required Software

- ◆ Software needed for this course:
 - ◆ Microsoft Windows (XP / Win7 / Win8)
 - ◆ Microsoft Visual Studio 2012/2013 or Visual Studio Express 2012/2013 (free version of VS)
 - ◆ .NET Framework 4.5 (included in Visual Studio)
 - ◆ Visual Studio 2005, 2008 or 2010 is also OK



High-Quality Code: Course Introduction



Free Trainings @ Telerik Academy

- ◆ C# Programming @ Telerik Academy

- ◆ csharpfundamentals.telerik.com



- ◆ Telerik Software Academy

- ◆ academy.telerik.com



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