



High-Quality Code: Course Introduction

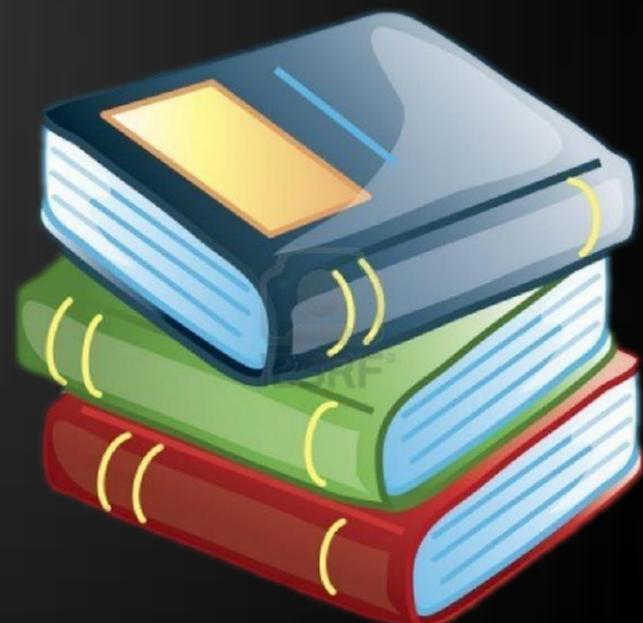
Course Program, Evaluation, Exams, Resources

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



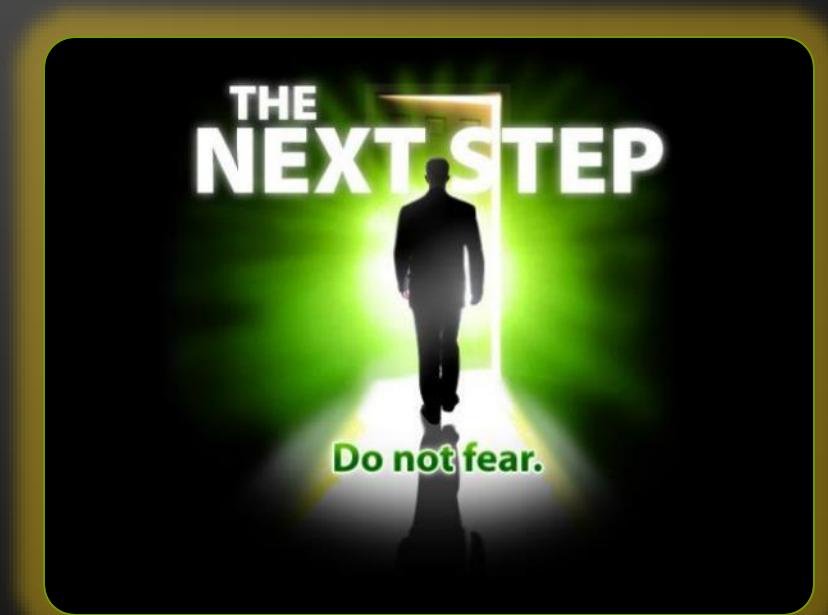
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High-Quality Code

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>



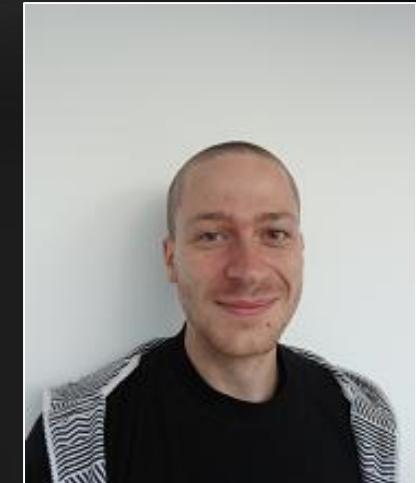
- ◆ Doncho Minkov

- ◆ Senior Technical Trainer
@ Telerik Software Academy
- ◆ Student in Sofia University
 - ◆ Software Engineering
- ◆ Contestant in the Informatics competitions
- ◆ Graduate from the first season of
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- ◆ Email: [@telerik.com](mailto:doncho.minkov)
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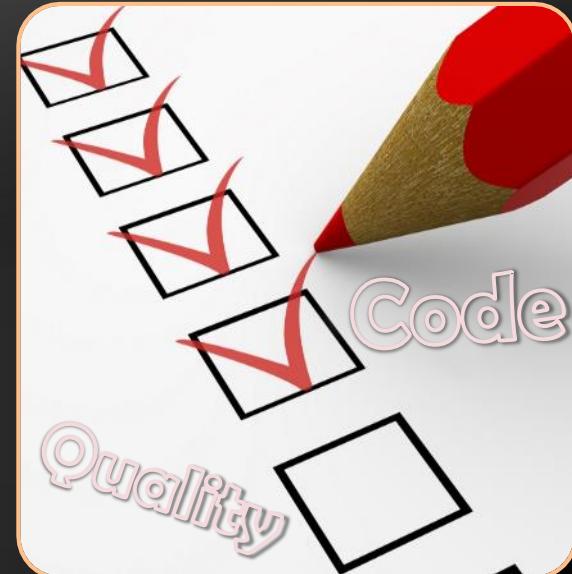
◆ Ivaylo Kenov

- ◆ 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%



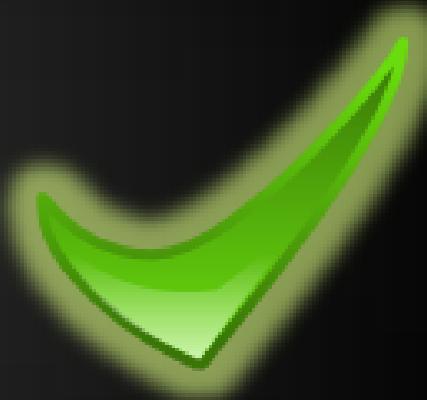
Pass / Excellence / Fail Criteria

- ◆ 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

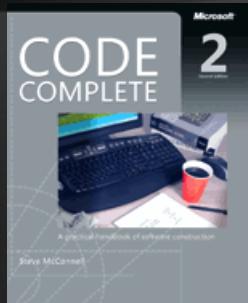


The official textbook for the course

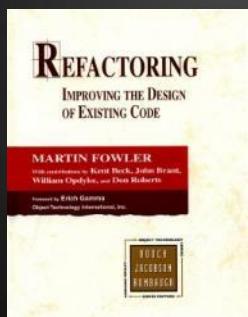
- ◆ “Introduction to Programming with C#”, Nakov S. and his team, 2010
- ◆ Freely downloadable from:
www.introprogramming.info

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

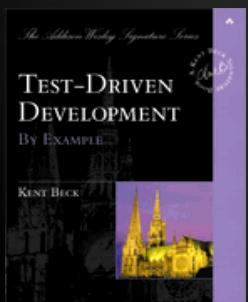
Recommended Books



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/>

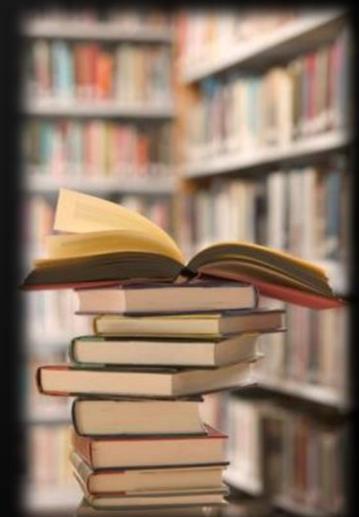
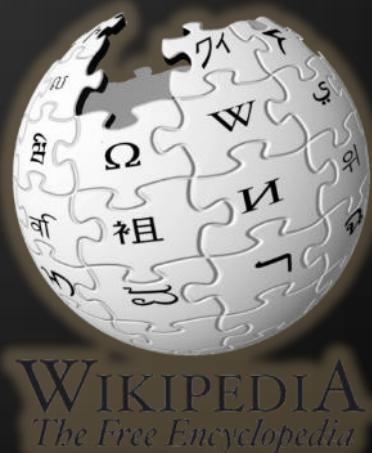
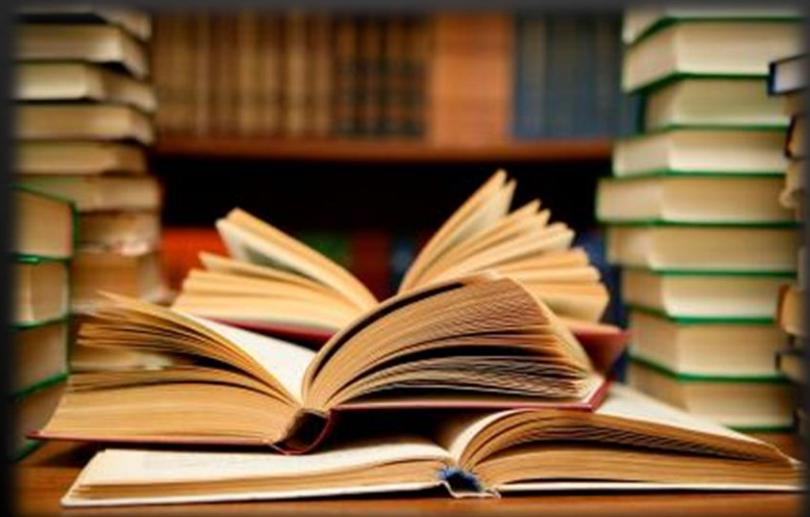


Test Driven Development: By Example, Kent Beck, ISBN 0321146530



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

The screenshot shows a web-based learning platform. At the top, there's a navigation bar with links like 'Начало', 'Софтуерни технологии', 'Учебници', 'Архив', 'Онлайн практики', 'Помощ', 'Админ', and 'Logout'. Below the navigation, a banner for 'Курс "C# програмиране - част II"' is displayed. The main content area contains course details such as 'Стартов датум: 08/02/2013', 'Лекции за изпирение: 2', and 'Продължителност на упражнения: 23:59 часа на 27/02/2013'. A sidebar on the right lists various course materials and sections, including 'Материали' (Materials), 'Материали за курса' (Materials for the course), and 'Материали за външни семинари' (Materials for external seminars). The sidebar also includes a 'Материална база' (Material base) section with links to external resources.

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



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Questions?



Free Trainings @ Telerik Academy

- ◆ C# Programming @ Telerik Academy

- ◆ csharpfundamentals.telerik.com



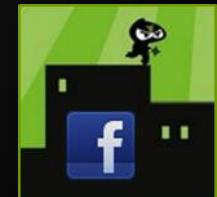
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