Fundamentals of C# Programming Course

Introduction
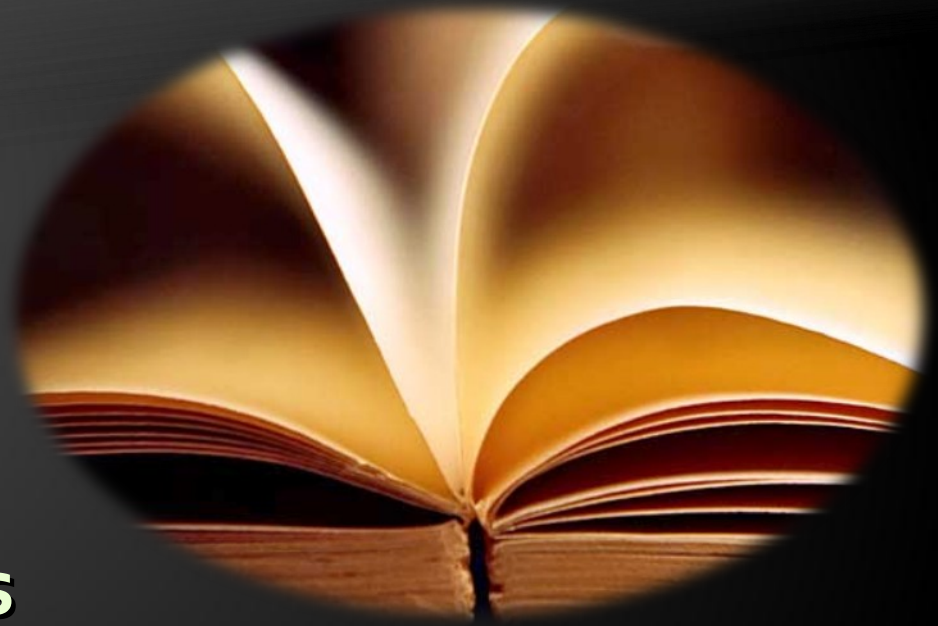
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- **What Telerik does?**

  - **Leading vendor of ASP.NET AJAX, Silverlight, WPF and Windows Forms components, ORM, Reporting, and CMS solutions and VS Plugins**

- **Headquartered in Bulgaria**

  - **With offices in Boston and Munich**

  - **250 employees – mostly developers**

- **Employer #1 in Bulgaria for 2010**

- **Microsoft Gold Certified Partner**

Why Telerik is Successful?

- **Hard Work**
  - **Essential to the success of any company**

- **Constant Improvement**
  - **Adaptive to changes**

- **Open Communication**
  - **Everyday we get feedback and improve our products and work processes**

- **Good People**
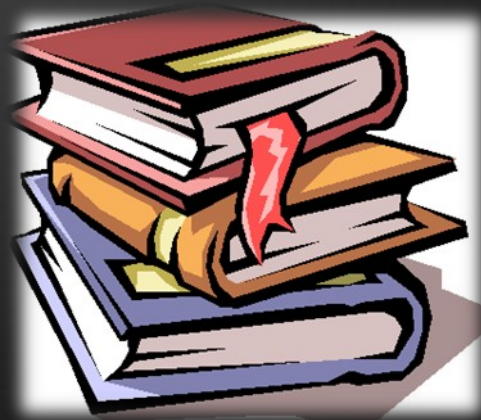 - **The greatest capital of the company**

- **Telerik is constantly investing in people**
  - **Everyday improvement of the employee's skills**
  - **Mentoring / coaching programs**
  - **Microsoft certification programs**
- **Telerik strongly supports the community**
  - **Sponsors conferences for software engineers (PDC, DevDays, TechEd, DevReach, …)**
  - **Sponsors books, contests and other events**
  - **Supports few University courses**
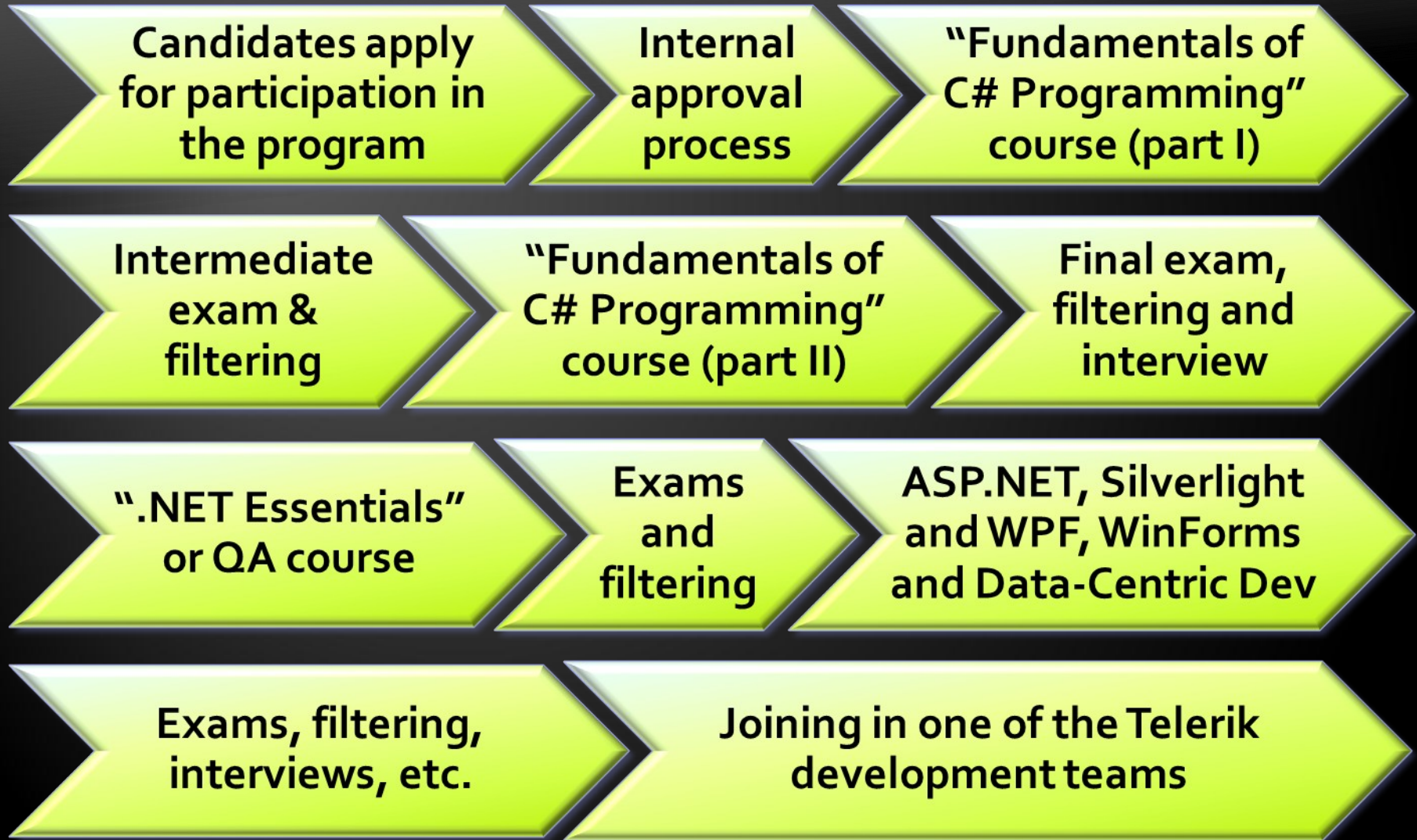
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Telerik Academy Training Program Objectives

- **Train young people in software engineering with the .NET technologies**
  - Practical training with lots of practice
  - Cutting edge technologies from Microsoft
  - Software engineering skills
- **Supplement the University education**
- **Hire the best students in the Telerik development teams**
- **Support the IT industry development**

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Candidates apply for participation in the program

Internal approval process

"Fundamentals of C# Programming" course (part I)

Intermediate exam & filtering

"Fundamentals of C# Programming" course (part II)

Final exam, filtering and interview

".NET Essentials" or QA course

Exams and filtering

ASP.NET, Silverlight and WPF, WinForms and Data-Centric Dev

Exams, filtering, interviews, etc.

Joining in one of the Telerik development teams

✦ **"Fundamentals of C# Programming" course:**

- ◆ **Give the trainees the fundamental computer programming knowledge and skills**

- ◆ **Establish the logical and algorithmic thinking**

  - ◆ **Development of problems solving skills**

- ◆ **Learn basic data structures, algorithms and object-oriented programming (OOP) concepts**

- ◆ **Prepare for learning the technologies**

  - ◆ **Web, databases, SQL, ASP.NET, AJAX, WPF, etc.**

Course Topics – First Month

1. **Introduction to Programming**
2. **Primitive Data Types and Variables**
3. **Operators, Expressions and Statements**
4. **Console Input / Output**
5. **Conditional Statements**
6. **Loops**
7. **Arrays**
8. **Numeral Systems**
9. **Methods**

Course Topics – Second Month

1. Intermediate Exam
2. Recursion and Recursive Algorithms
3. Creating and Using Objects
4. Exceptions Handling
5. Strings and Text Processing
6. Defining Classes
7. Text Files
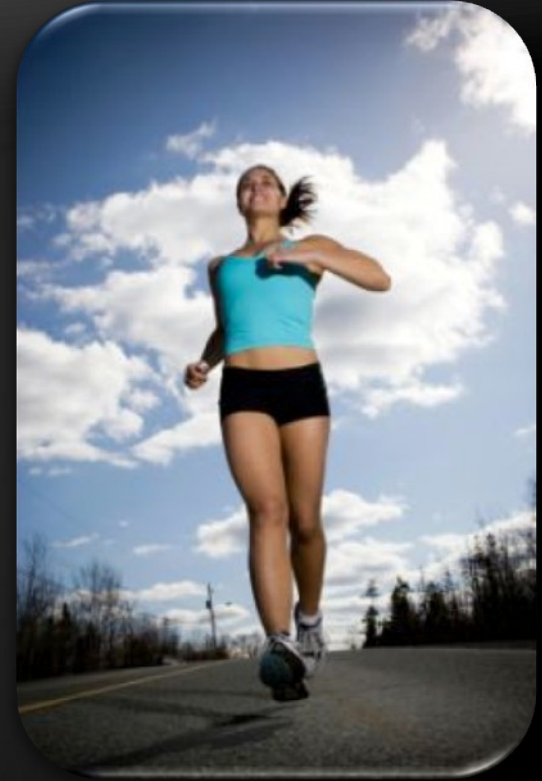8. Linear Data Structures
9. Trees and Graphs

Course Topics – Third Month

1. **Dictionaries, Hash Tables and Sets**
2. **Algorithms Complexity and Data Structures**
3. **Object-Oriented Programming Fundamentals**
4. **High-Quality Programming Code**
5. **Methodology of Problems Solving**
6. **Problems Solving Practice #1**
7. **Problems Solving Practice #2**
8. **Problems Solving Practice #3**
9. **Final Exam**

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- **Lectures**
  - **37 hours (12 + 25)**
- **Practical exercises**
  - **55 hours (16 + 39)**
- **Homework**
  - **~ 108 hours (34 + 74)**
- **Exam: 2 x 6 hours**
- **Allocation**
  - **Part I: 1 month @ 2 times weekly, 4 hours**
  - **Part II: 2 months @ 2 times weekly, 4 hours**

Why C# and .NET Framework?

- **Microsoft is one of the industry leaders**

  - **.NET Framework and C# are the primary development technologies in the MS ecosystem**

- **The C# language**

  - **Contemporary object-oriented language**

  - **Widespread and very popular**

  - **Easy to learn**

- **All Telerik products target the .NET platform**

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- ◆ **Why the slides are in English?**

  - ✦ **English is the native language of the software engineers**

  - ✦ **Forget about not to learning it!**

  - ✦ **Specific terminology is better not to be translated**

Exams

Intermediate and Final Exam

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- **Exams measure individual performance**
  - Serve as filter for skillful people
  - Half of the students pass forward
  - Exams are not the only filter!
- **Intermediate exam**
  - 3-5 practical problems for 6 hours
  - Covers all learned topics to the moment
  - Solutions are evaluated for correctness only
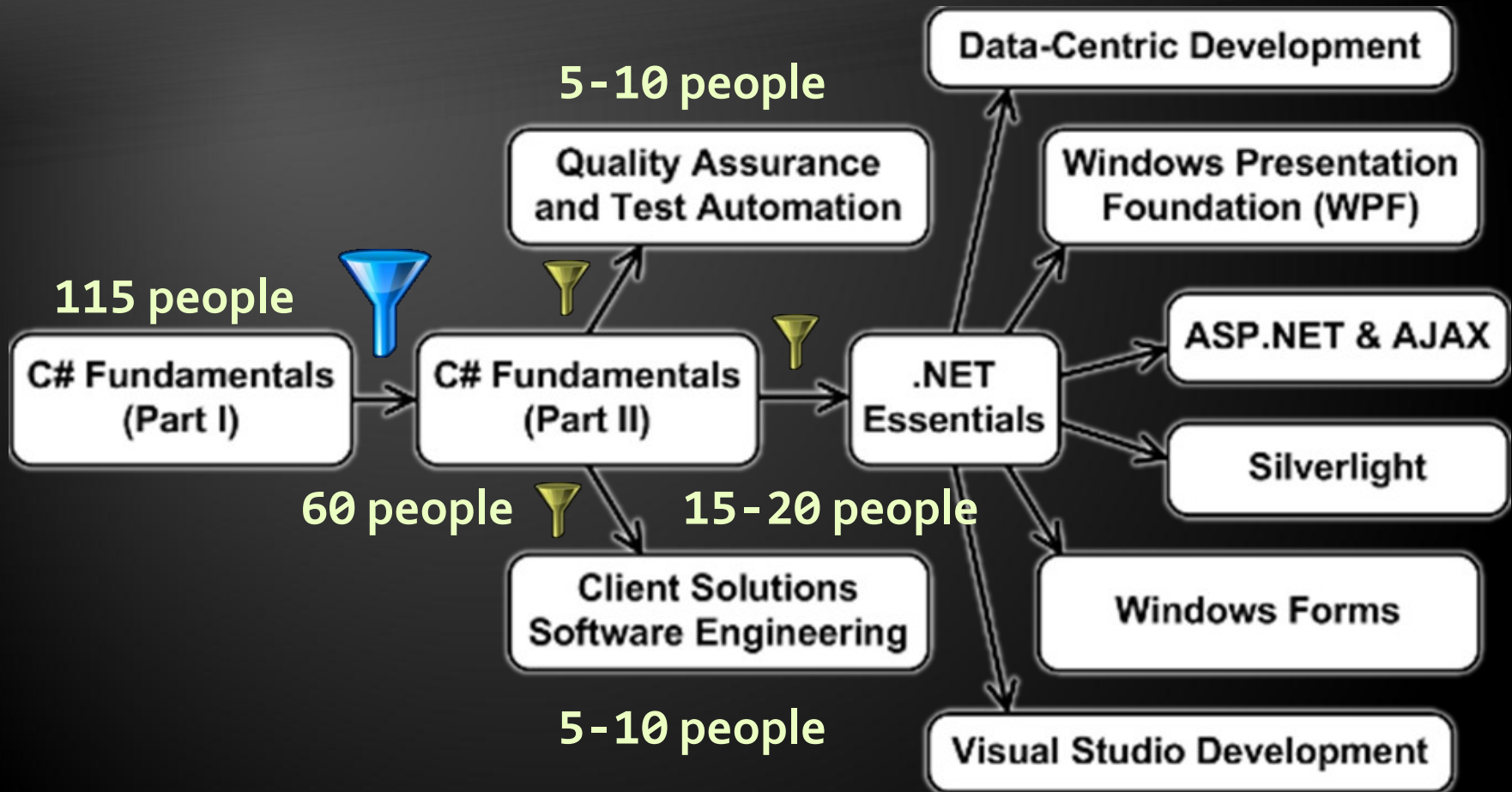 - Best students continue in Part II of the course

- **The final exam is the ultimate filter**

  - **4-5 practical problems for 6 hours**

  - **Covers the entire course contents**

  - **More complex problems**

    - **Need of more skills and logical thinking**

- **Evaluation of the solutions:**

  - **Correctness – are the solutions well tested?**

  - **Efficiency – are data structures used efficiently?**

  - **Quality of code – does it follow best practices?**

The Next Level Trainings

What Happens after the Course?

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The official textbook for this course

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

- The entire course strictly follows the book contents
- The book is still under development
  - http://tiny.cc/intro-cs-nov-2010

Our Discussion Group

- Please subscribe to "Telerik Academy" discussion group in Google Groups:

  - http://groups.google.com/group/telerikacademy

  - Download the lecture materials and the demonstration examples

  - Discuss the course exercises with your colleagues

  - Share source code and ideas

Google groups

✦ **Software needed for this course:**

- ✦ **Microsoft Windows**

- ✦ **Microsoft Visual Studio 2010 or Visual C# 2010 Express Edition (free version of VS 2010)**

- ✦ **.NET Framework 4.0**

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- ◆ **The principal trainer**
  - ◆ **Svetlin Nakov**
    - ◆ **Manager Technical Training, Telerik Corporation**
    - ◆ **15 years experience as software engineer, consultant and trainer**
    - ◆ **Author of 6 books about computer programming**
    - ◆ **Winner in tens of programming Olympiads and contests**
    - ◆ **PhD in Computer Science**

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- **Assistant trainer**
  - **Doncho Minkov**
    - **Junior Technical Trainer at Telerik**
    - **Graduated the Telerik Academy**
    - **Student in Sofia University**
    - **Formal contestant in the National Olympiads in Informatics**

Requirements for All Trainees

The Training Program Requires 100% Commitment!

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- ◆ **Basic computer skills**
  - ◆ **We don't teach computer literacy**

- ◆ **English**
  - ◆ **Ability to read technical documentation in English is enough**

- ◆ **Long-term commitment**
  - ◆ **8 hours / day (average)**

- **Key factors for succeeding in the Telerik Academy Training Program**
  - **Solid motivation**
    - **"Wise guys" are not welcome**
  - **Serious attitude**
    - **Willingness for really hard work**
  - **All your time**
    - **50% in class (for the lectures and exercises)**
    - **50% at home (for the homework)**

- Invest in yourself!

- Invest in your training!

- Invest in your skills development!

… Unless you consider yourself a bad investment. Do you?

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Questions?