NPRG035: Programming in C# Language

http://d3s.mff.cuni.cz

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CHARLES UNIVERSITY
faculty of mathematics and physics
C#/.NET courses we teach

- **NPRG035 (2/2 Zk/Z)** — Programming in C# Language (Winter)
- **NPRG038 (2/2 Zk/Z)** — Advanced C# Programming (Summer)
- **NPRG057 (2/0 Zk)** — Advanced .NET Programming II (Summer)
- **NPRG064 (0/2 Z)** — Programming user interfaces in .NET (Summer)
Requirements for the Credit

• Final Project
• Practical Test
• Homeworks
• Theoretical exam
Final Project

• Specification: TBA. 7. 2022
• 1. deadline: TBA. 8. 2022
• 2. deadline: TBA. 9. 2022

Source lines of code requirements for NPRG035 and NPRG064:
• Presented until the 1. deadline: 30kB SLOC
• Presented after the 1. deadline: 45kB SLOC
• Presented after the 2. deadline: 60kB SLOC

Source lines of code requirements for NPRG038, resp. NPRG057:
• Presented until the 1. deadline: 45kB SLOC
• Presented after the 1. deadline: 60kB SLOC
• Presented after the 2. deadline: 90kB SLOC

For passing the NPRG038, resp. NPRG057 course, the application has to use some techniques learned in NPRG038 (Threading, Networking, LINQ, Reflection, ...), resp. NPRG057 (Unsafe code, C++/CLI, Web Services, ...) course.

For passing the NPRG064 course, the application has to have advanced GUI as taught in NPRG064 course.
Practical Test

- Complete one coding task within 3 hours
- During examination period
- Online documentation allowed

Example: Write a program that converts a logical formula on input into CNF — conjunction of clauses (i.e. conjunction of disjunction of literals). Input formula is fully parenthesized and individual terms are separated by space. Variable may be any string of alfa-numeric characters of length at least 1, & conjunction, | disjunction, ! negation, -> implication, <-> equivalence, using the following transcription rules, where a, b and c are any formulas:

<table>
<thead>
<tr>
<th>Expression</th>
<th>CNF Formulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>!!a</td>
<td>a</td>
</tr>
<tr>
<td>a -&gt; b</td>
<td>!(a</td>
</tr>
<tr>
<td>a &lt;-&gt; b</td>
<td>(a -&gt; b) &amp; (b -&gt; a)</td>
</tr>
<tr>
<td>! (a &amp; b)</td>
<td>!(a &amp; b)</td>
</tr>
<tr>
<td>! (a</td>
<td>b)</td>
</tr>
<tr>
<td>(a &amp; b)</td>
<td>c</td>
</tr>
</tbody>
</table>
Homeworks

- [https://recodex.mff.cuni.cz/](https://recodex.mff.cuni.cz/)
- Homeworks in ReCodEx system, assigned every week, with a deadline in the following week
- At least **80p** required for passing the course
- Extra points can be converted into points for theoretical exam (more info on the course website)
- Extra homeworks (more difficult) at the end of semester for extra points