

# Unicon Development Team Design Review Fall 2014

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University of Idaho, Fall 2014, CS 480

# What is Unicon?

Unicon  
Development  
Team  
Design Review  
Fall 2014

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## What is Unicon?

Project  
Overview

Problem  
Definition

Constraints

Schedule /  
Roadmap

Risks

- Unicon, the University of Idaho's signature programming language (<http://unicon.org>), is a "modern dialect" descending from the Icon programming language. Unicon incorporates numerous new features and extensions to make the Icon language more suitable for a broad range of real-world applications.

# Project Overview

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- The Unicon Enhancement Project is developing a set of enhancements for the Unicon programming language.
- The intended end result of this project will be open-source code that becomes part of Unicon's public distribution.

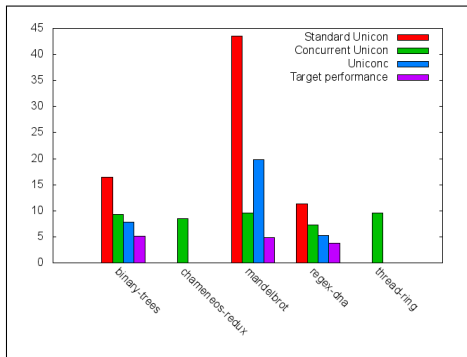
- The goals of this project include:
  - Enhancement of the Unicon IDE
  - Enhancing Unicon's C-based optimizing compiler

# Problem Definition

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- Concurrent Iconc: thread-safe native C code generated



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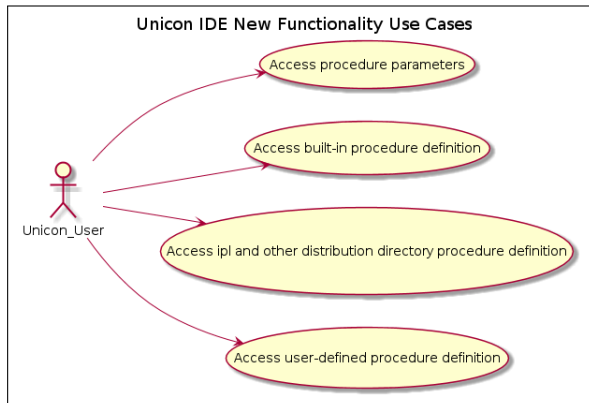
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- Unicon IDE: Hyperlink to documentation / source code



# Constraints

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- Iconc is tested and maintained for many Linux distributions but it's functionality is limited or non-existent on other operating systems.

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November 2014	(Team) <b>Source familiarity</b>
November 2014	(IDE) <b>Report if cursor is on a procedure</b>
November 2014	(ICONC) <b>Compile with concurrency without error</b>
December 2014	(IDE) Generate table for builtin lookup
January 2015	(IDE) Merge Builtin table with user procedures table
February 2015	(ICONC) Compiles & links threaded Unicon program
February 2015	(IDE) <b>Bring up documents on builtins</b>
March 2015	(ICONC) Executes threaded Unicon programs
March 2015	(ICONC) <b>Executes entire Unicon Benchmark Suite</b>
March 2015	(IDE) <b>Jump to user defined procedures</b>
April 2015	(ICONC) New Unicon technical report written documenting concurrent Iconc
April 2015	(IDE) Right-click functionality
May 2015	(Team) <b>Design Expo</b>



# Risks

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- New functionality must not:
  - Impose *significant* performance penalties.
  - Break backward compatibility.
- Mitigation
  - No new / cross dependencies introduced