Units for MathWebSearch[*]

Guided Research Proposal

Tom Wiesing
Supervisor: Michael Kohlhase
Jacobs University, Bremen, Germany

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Abstract

In this proposal we describe an approach to introduce Units to MathWebSearch [2]

1 Introduction

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MathWebSearch (MWS for short[4]) is a system to search (latex) documents for mathematical formulae. Additionally it can also search for text in the documents[5]. However it not only searches for formulae in a simple-minded string way but also includes simple transformation rules, such as $a + b = b + a$. Additionally, is is possible to search with wildcards such as $x + \sqrt{x}$. In this example MWS delivers results of the given form where x is substituted with any sub-formular[6].

MWS has been shown to be very useful for mathematicians[7]. The transformation system it uses can currently be used only for mathematical formulae which limits its applications. In this paper we propose an extension for physical units[8]. Instead of transforming mathematical formulae, the search

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engine should transfer physical units. The end-user will search, for example, $100\,°C$ and also get results which show $212°F$ or $373.15K$.

This proposal is organised as follows[9]: In section 2 we describe the existing MathWebSearch system and then proceed in section 3 to discuss the proposed extension. Finally in section 4 we discuss possible problems with this approach and related work.

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2 The existing MathWebSearch system

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3 The proposed extension

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4 Problems and related Work

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