
Using Timetabling solution approaches to assist in computer programming pedagogy

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Abstract The subject of teaching computer programming has grown substantially in recent years. The advent of e-books, online sites such as Codecademy, and the vast library of open source code editors have dramatically changed the landscape of computer programming pedagogy. While these advances have been helpful teaching programming mechanics, they have not addressed some core issues related to problem solving. Students, especially those with poor math backgrounds, find it difficult to master the logic and sequencing, involved in translating a stated problem into a software solution.

In this talk I will describe how the introduction of timetabling problems and their common solution approaches are starting to help students bridge the gap from word problem to actual computer code. For example, most programming textbooks are language driven and start out with printing out or displaying “Hello World”, without explaining the analytical steps of programming. Using timetabling problems is an excellent way to teach beginning programmers what a process or algorithm can be. These types of problems are good illustrations of how computers solve problems, as individual scheduling problems can easily be broken down into loops, conditionals, assignments and methods. Students seem to find timetabling problems more interesting than the standard interest calculation problem.

The talk will be concluded by presenting challenges and future research opportunities in the pedagogy of computer programming utilizing timetabling problem examples and techniques.

Keywords algorithm design · algorithm configuration · performance tuning

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