

JavaScript Programming Basics: A Laboratory Series for Beginning Programmers

ALYCE BRADY, R.C. MCDOWELL, AND KELLY SCHULTZ
KALAMAZOO COLLEGE

The JavaScript Programming Basics lab series presents elementary programming concepts using the JavaScript language. In particular, it introduces variables, functions, and event handlers, conditions, loops, arrays, decision trees, sequential search, and selection sort. Students build three different web pages or programs: a guestbook, an "expert advice system" or decision tree, and a CD order form. These labs would be appropriate in courses on web page development, broad overview ("CS 0") courses, or elementary programming courses.

Altogether, the module consists of 3 programming labs and 5 shorter "minilabs" contained in 14 files, totaling less than 600KB.

There are two categories of labs in the series.

- *Minilabs* are short, directed exercises that concentrate on a single concept, such as variables or conditions. A minilab should immediately follow the instructor's introduction of the associated topic (noted as the "prerequisites" to the lab).
- *Programming labs* are longer, and ask students to pull together several concepts in a more complex exercise.

Since the purpose of the minilabs is immediate practice of new concepts immediately after they have been introduced, the instructions in the minilabs are more detailed and explicit than those in the full-length labs. The module also includes two supplemental programming projects that extend the decision tree lab and the CD order form labs.

The JavaScript Programming Basics labs are meant to supplement instructor presentations, allowing students to apply new concepts through guided exercises. This page describes the pedagogical goals and prerequisites for each programming lab and minilab.

Categories and Subject Descriptors: K.3.2 [**Computers and Education**]: Computer and Information Science Education—*Computer science education; Curriculum*

General Terms: Design, Experimentation, Languages

Additional Key Words and Phrases: JavaScript Programming Basics labs, JavaScript language, pedagogy, expert systems, elementary programming

Authors' address: Department of Mathematics and Computer Science, Kalamazoo College, Kalamazoo, MI 49071.

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