

Title: Introduction to Computer Programming

Lecturer: Prof. Dr. Iztok Fajfar

Aim of the course:

To master basic computer programming skills

Required (pre)knowledge:

Basic computer skills (Windows or similar OS)

Contents:

Students learn basic elements of a typical high-level programming language using JavaScript as a concrete example. As JavaScript typically relies on a certain environment to provide the ability to include or import scripts, we first learn some HTML in which JavaScript scripts will run.

Then we move to basic computer program elements such as variables, expressions, statements, control structures and functions. In order to help understand the logic behind algorithm development we support our first steps using flow chart representations of few solutions to simple real-world problems.

JavaScript Object Oriented Features provide user with some simple yet effective tools to develop dynamic web pages. This is not the focus of our course, nevertheless we cover some of the features in order to make learning more realistic and thus appealing.

In order to be able to interact with user input or to use timers we learn about events and event handling, which leads us to the basic multitasking concepts.

As we move along, we soon find ourselves frustrated with some hard-to-detect syntax or run-time errors (bugs) in our programs. Basic debugging tools and techniques are therefore discussed and used throughout the course.

Selected references:

- o W3 Schools Web Page (www.w3schools.com)
- o John Pollock: JavaScript: A Beginner's Guide, Osborne McGraw-Hill, 2003
- o James Jaworski: Mastering JavaScript, SYBEX, 2001
- o T.H. Cormen: Introduction to Algorithms, MIT, 2001
- o Steve S. Skiena: The Algorithm Design Manual, Springer-Verlag, 1998