

COMPUTER PROGRAMMING



PROGRAMMING SKILLS

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FOREWARD

The process of preparing programs for a digital computer is especially attractive, not only because it can be economically and scientifically rewarding, but also because it can be an aesthetic experience much like composing poetry or music. This book is the first volume of a multi-volume set of books that has been designed to train the reader in various skills that go into a programmer's craft.

1 INTRODUCTION

1.1 REACT

Computer programming is the craft of writing useful, maintainable, and extensible source code which can be interpreted or compiled by a computing system to perform a meaningful task.

1.1.1 FEATURES

- JSX is JavaScript syntax extension. It isn't necessary to use JSX in React development, but it is recommended.
- React is licensed under the Facebook Inc. Documentation is licensed under CC BY 4.0.
- React is all about components. You need to think of everything as a component. This will help you to maintain the code when working on larger scale projects.

1.1.2 ADVANTAGES

- React uses virtual DOM which is JavaScript object. This will improve apps performance since JavaScript virtual DOM is faster than the regular DOM.
- Component and Data patterns improve readability which helps to maintain larger apps.
- React can be used with other frameworks.

2 HTML

It stands for **H**yper **T**ext **M**arkup **L**anguage, which is the most widely used language on Web to develop web pages. **Hypertext** refers to the way in which Web pages (HTML documents) are linked together. Thus the link available on a webpage are called Hypertext.

2.1 ELEMENTS

An **HTML element** is defined by a starting tag. If the element contains other content, it ends with a closing tag, where the element name is preceded by a forward slash. HTML documents consist of a tree of these elements and they specify how HTML documents should be built, and what kind of content should be placed in what part of an HTML document.

2.2 ATTRIBUTES

An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts: a **name** and a **value**: The **name** is the property you want to set. The **value** is what you want the value of the property to be set and always put within quotations.

2.3 URL ENCODING

URL encoding is the practice of translating unprintable characters or characters with special meaning within URLs to a representation that is unambiguous and universally accepted by web browsers and servers. The encoding notation replaces the desired character with three characters: a percent sign and two hexadecimal digits that correspond to the position of the character in the ASCII character set.

3 JAVASCRIPT

JavaScript is a lightweight, interpreted programming language. It is designed for creating network-centric applications. It is complementary to and integrated with Java. JavaScript is very easy to implement because it is integrated with HTML. It is open and cross-platform.

3.1 ADVANTAGES

- **Richer interfaces** – You can use JavaScript to include such items as drag-and-drop components and sliders to give a Rich Interface to your site visitors.
- **Increased interactivity** – You can create interfaces that react when the user hovers over them with a mouse or activates them via the keyboard.
- **Less server interaction** – You can validate user input before sending the page off to the server. This saves server traffic, which means less load on your server.

3.2 LIMITATIONS

- Client-side JavaScript does not allow the reading or writing of files. This has been kept for security reasons.
- JavaScript cannot be used for networking applications because there is no such support available.
- JavaScript doesn't have any multithreading or multiprocessor capabilities.

3.3 DEVELOPMENT TOOLS

- One of major strengths of JavaScript is that it does not require expensive development tools. You can start with a simple text editor such as Notepad. Since it is an interpreted language inside the context of a web browser, you don't even need to buy a compiler.
- To make our life simpler, various vendors have come up with very nice JavaScript editing tools.

THE END...