

## Lesson 1: Introduction to Programming Languages and Tools of the Trade

- Programming (aka coding) is the process of writing instructions for a device such as a computer or mobile device
- A program can be anything that is written with code: websites, games, and phone apps
- A program that is running or executing code is carrying out instructions
- JavaScript is primarily used for web applications
- Bash is primarily used for operating systems
- Low level languages typically require fewer steps than high level languages for a device to interpret instructions
- High level languages are popular due to their readability and support
- JavaScript is considered a high level language

### Elements of a Program

- A single instruction in a program is called a statement and will usually have a character or line spacing that marks where the instruction ends, or terminates (varies on language used)

### Programs are Data Driven

- Statements within a program may rely on data provided by a user or elsewhere to carry out instructions
- Variables are statements that instruct a device to save data in its memory

### Flow Control

- A development environment is a unique set of tools and features that a developer uses often when writing software

### Editors

- Debugging helps uncover bugs and errors by stepping through the code line by line
- Syntax highlighting adds colors and text formatting to code, making it easier to read
- Extensions and integrations are specialized tools for developers, by developers
- Customization enables developers to create a unique development environment to suit their needs

### Popular Editors and Web Development Extensions

- Visual Studio Code
  - Code Spell Checker
  - Live Share
  - Prettier - Code formatter
- Atom
  - Spell-check
  - Teletype
  - Atom-beautify

### Browsers

- Web developers rely on the browser to see how their code runs on the web

- It's also used to display the visual elements of a web page that are written in the editor, like HTML

#### Popular Browsers and DevTools

- Edge
- Chrome
- Firefox

#### Command Line Tools

- Some developers prefer a less graphical view for their daily tasks

#### Popular Command Line Options

- Windows
  - Powershell
  - Command line
  - Windows terminal
  - Mintty
- macOS
  - Terminal
  - iTerm
  - Powershell
- Linux
  - Bash
  - KDE Konsole
  - Powershell
- Git
- NPM
- Yarn

#### Documentation

- When a developer wants to learn something new
- Helps guide them through how to use tools and languages properly

#### Popular Documentation on Web Development

- Mozilla Developer Network
- Frontend Masters
- Web.dev
- Microsoft's own developer docs