QuickStart_Reference_Guide

QuickStart Guides — Full Reference (Merged Outlines & Summaries)

> This document merges, condenses, and standardizes outlines from four ClydeBank Media QuickStart Guides (Python, HTML & CSS, JavaScript, SQL). It's formatted for print and cross-referenced to the four-semester plan.

Overview

- **Audience**: Beginners to early-intermediate builders aiming to ship real web apps.
- **Approach**: Hands-on projects, clear examples, practical tooling.
- **How to use**: Read each book section that aligns with your current semester's tasks, then immediately build/commit/tests.

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1) Python QuickStart Guide — Robert Oliver

Summary

Practical Python from absolute basics to OOP, files, testing, web, and database integration. Uses a recurring project to reinforce concepts and touches real tooling (Git, SQLite, web frameworks).

Core Outcomes

- Write clean, readable Python with functions/classes
- Handle errors, files, dates, and external APIs
- Organize code into modules/packages
- Test and optimize hot paths; use Git confidently

Outline (standardized)

Part I — Getting Started - **Setup & First Program**: Installing Python, `Hello, World!`, running scripts, REPL - **Data & Types**: Numbers, strings, booleans; conversions; f-strings - **Data Structures**: Lists, tuples, sets, dicts; choosing the right structure - **Control Flow**: Conditionals, loops, comprehensions; small games/exercises

Part II — Building Abstractions - **Functions**: Parameters (positional/keyword/default/variadic), scope, generators - **Errors & Debugging**: Exceptions, `try/except/finally`, logging, VS Code debugging - **OOP**: Classes, instances, methods, properties, inheritance (single/multiple), dataclasses - **Modules & Packages**: Imports, namespaces, stdlib highlights, packaging basics

Part III — Python in Action - **Strings+**: Regex, formatting, compression basics - **Math+Time**: `math`, `statistics`, `datetime`, time zones - **I/O & Serialization**: Files, CSV/JSON, pickling; paths and OS ops - **Networking**: Fetching/saving web pages, emailing, HTTP APIs

Part IV — Web, Data, & Quality - **Web Frameworks**: micro (Flask/FastAPI) to full-stack (Django) overview; REST basics - **SQLite & SQL**: Connecting, queries, CRUD from Python; migrations idea - **Testing**: Unit tests (pytest), coverage; TDD intro - **Git**: Branches, PRs, logs, diffs; collaborating

Part V — Performance & Next Steps - Profiling, caching, early-exit patterns, lazy loading, upgrading Python - Further learning paths; ecosystem orientation

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2) HTML & CSS QuickStart Guide — David DuByne

Summary

From semantic HTML to modern CSS (Flexbox/Grid), responsive design, forms/media, and Bootstrap. Includes practical workflow and version control.

Core Outcomes

- Structure pages with semantic HTML and forms
- Style with modern CSS; build responsive layouts

- Use a framework (Bootstrap) judiciously
- Prepare production-ready, accessible pages

Outline

Part I — Foundations - **Web Basics**: Role of HTML vs CSS; browser/devtools overview - **HTML Structure**: Elements, nesting, attributes, head/meta/OG tags

Part II — Authoring HTML - **Content Elements**: Headings, paragraphs, lists, links, images, tables, media - **Forms**: Inputs, labels, selects, validation patterns, accessibility

Part III — CSS Fundamentals - **Selectors & Cascade**: Specificity, inheritance, custom properties - **Box Model & Spacing**: Padding, border, margin, box-sizing - **Typography & Color**: Web fonts, line-height, contrast, variables - **Layout Systems**: Flexbox, Grid; responsive patterns and media queries - **Effects**: Transitions, transforms, keyframe animations; sprites

Part IV — Frameworks & Workflow - **Bootstrap**: Grid, components, utilities; when to use/avoid - **Process**: Wireframes, assets, image optimization, testing, debugging - **Version Control**: Git basics for web projects; hosting options

Appendices - Hosting/FTP basics; units (px/em/rem/vh/vw); accessibility quick-ref

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3) JavaScript QuickStart Guide — Robert Oliver

Summary

Teaches core JS (syntax, data, control), DOM & events, async programming, patterns, animation, and introduces Node.js and React for full-stack capability.

Core Outcomes

- Manipulate the DOM; handle events and user input
- Fetch data asynchronously; work with JSON
- Structure code with modules, classes, and patterns
- Understand foundations for Node/React ecosystems

Outline

Part I — JS Essentials - **Setup & First Code**: Console, alerts, basic I/O, `let` vs `const` - **Data & Flow**: Strings, numbers, arrays/objects; conditionals, loops - **Functions & Scope**: Parameters, defaults, closures; pure vs impure

Part II — The Browser - **DOM**: Query/update nodes; templates; forms - **Events**: Bubbling/capture, debouncing/throttling - **Async**: Promises, `async/await`, error handling; `fetch`

Part III — Advanced JS - **Patterns**: Module, observer, factory; composition vs inheritance - **Animation**: requestAnimationFrame, CSS/JS animations - **Libraries**:

jQuery legacy touch; when to use modern APIs

Part IV — Full-Stack On-Ramp - **Node & npm**: Scripts, packages, simple server - **React (Intro)**: Components, props/state, hooks at a glance - **Tooling**: Linters/formatters, bundlers, tests

Appendices - HTML/CSS refresher; http-server; popular third-party libs

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4) SQL QuickStart Guide — Walter Shields

Summary

Practical SQL for relational databases: data retrieval, joins, aggregations, data changes, and schema design—geared toward analysts and app developers.

Core Outcomes

- Query/filter/sort/tabulate data across multiple tables
- Use aggregations/grouping effectively
- Modify data safely (INSERT/UPDATE/DELETE)
- Design schemas and choose appropriate data types

Outline

Part I — SQL Basics - **Intro to RDBMS/SQL**: Terminology, schemas, tables, keys - **SELECT Fundamentals**: FROM, WHERE, ORDER BY, DISTINCT, LIMIT

Part II — Combining & Summarizing - **Joins**: INNER/LEFT/RIGHT/FULL; set operations; NULL handling - **Aggregations**: COUNT/SUM/AVG/MIN/MAX; GROUP BY; HAVING

Part III — Changing Data - **DML**: INSERT, UPDATE, DELETE; transactions; constraints - **DDL**: CREATE/ALTER/DROP; indexes; types (text/numeric/date/time)

Part IV — Practical Patterns - Views, subqueries, common table expressions - Intro to performance: indexing/selectivity, query plans

Appendix - SQL style guide; migration basics; sample datasets

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Cross-Reference to Semesters

- **S1**: Python Parts I–III; HTML/CSS Parts I–III; SQL Parts I–II (basics)
- **S2**: JavaScript Parts I–III; React/Node intros; GraphQL (extra); SQL aggregations/joins
- **S3**: Python web & testing; LangChain; Docker; security; SQL performance
- **S4**: Analytics queries for funnels/segments; experiment tracking; reporting

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Sources blended from book descriptions, TOCs, and common beginner curricula. Use this as a study map alongside your hardcopies.