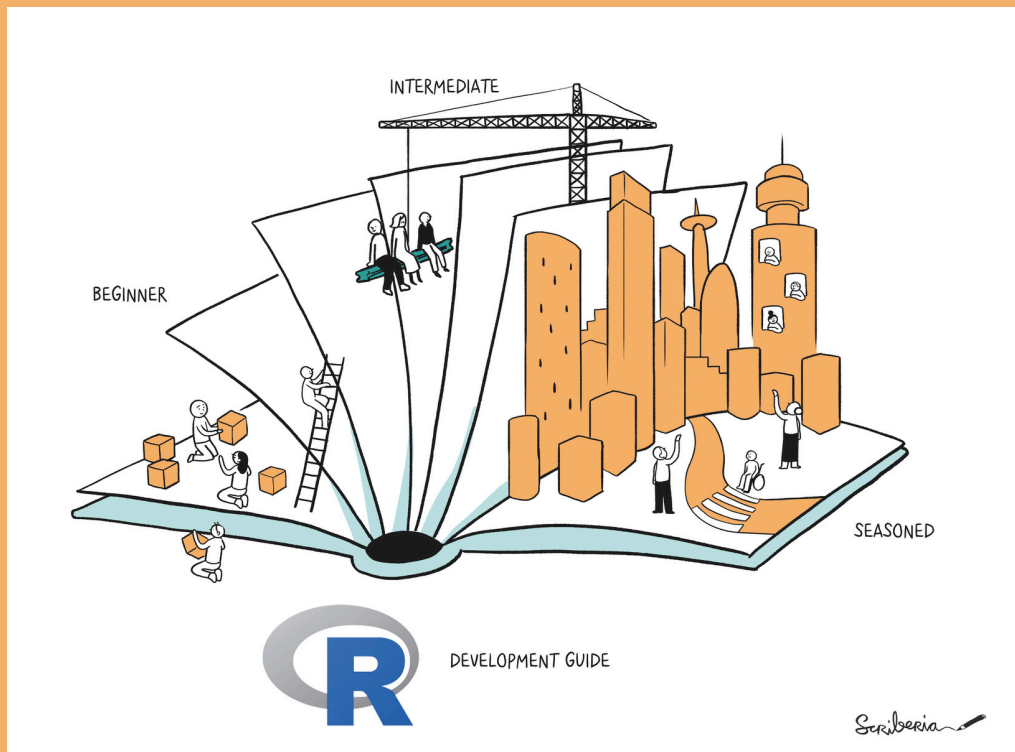# R Development Guide

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R Contribution Working Group

Building a Quarto Microsite Structure

Designing an Quarto-based Course

Create the Base Quarto Website

- Create a blank folder on your computer.
- Make sure that this folder is not on a cloud sharing service if you plan to use it wit Github.
- Open the folder in `VS Code` or `Antigravity` IDE.
- open terminal on IDE either by selecting `Terminal -> New Terminal` or by using keyboard shortcut `Ctrl +`
- You can create a Quarto website by running the following command:

```
quarto create project website .
```

This automatically ask users::

```
? Title (website) » example project
```

and will generate the following structure:

```
name/
    _quarto.yml
    index.qmd
    styles.css    (depending on template)
```

Now open the folder in VS Code, RStudio, or any preferred editor.

Replace the Default Pages With Your Course Pages

In the root of the project, create the standard site pages:

```
index.qmd
syllabus.qmd
deliverables.qmd
schedule.qmd
todo.qmd          # Instructor-only checklist
```

Purpose of Each Page

- **index.qmd** → Course homepage
- **syllabus.qmd** → Course policies
- **deliverables.qmd** → Assignments & grading
- **schedule.qmd** → Module or weekly timeline
- **todo.qmd** → Instructor checklists

---

3. Create Module Folders (M0–M8)

In your project folder, add:

```
M0/
M1/
M2/
M3/
M4/
M5/
M6/
M7/
M8/
```

Nine modules total.

---

4. Inside Each Module Folder, Add the Standard File Structure

For example, inside **M1/** create:

```
M1_LN1.qmd        # Lecture Note 1
M1_LN2.qmd        # Lecture Note 2
M1_P1.qmd         # Presentation 1
M1_P2.qmd         # Presentation 2
M1_T1.qmd         # Tutorial 1
M1_T2.qmd         # Tutorial 2
M1_Lab1.qmd       # Lab 1
```

```
M1_Lab2.qmd        # Lab 2
M1_A.qmd           # Assignment
M1_Proj.qmd        # Project step
M1_highlights.qmd  # Summary landing page
M1L1_figures/
M1L2_figures/
```

Copy this structure for **every module** from 0–8, adjusting the naming prefix.

---

5. Update `_quarto.yml` to Configure the Microsite

Replace the default file created by Quarto CLI with a course-oriented version:

```yaml
project:
  type: website

website:
  title: "Course Name"
  navbar:
    left:
      - href: index.qmd
        text: Home
      - href: syllabus.qmd
        text: Syllabus
      - href: deliverables.qmd
        text: Deliverables
      - href: schedule.qmd
        text: Schedule
      - text: Modules
        menu:
          - text: Module 0
            href: M0/M0_highlights.qmd
          - text: Module 1
            href: M1/M1_highlights.qmd
          - text: Module 2
            href: M2/M2_highlights.qmd
          - text: Module 3
            href: M3/M3_highlights.qmd
          - text: Module 4
```

```
          href: M4/M4_highlights.qmd
        - text: Module 5
          href: M5/M5_highlights.qmd
        - text: Module 6
          href: M6/M6_highlights.qmd
        - text: Module 7
          href: M7/M7_highlights.qmd
        - text: Module 8
          href: M8/M8_highlights.qmd

format:
  html:
    theme: cosmo
    toc: true
```

This creates a clean navigation system, anchored around module highlights pages.

---

6. Recommended Templates for Educators

Educators can copy/paste these into any file.

Lecture Notes Template

```
---
title: "Module X - Lecture Y"
format: html
---

# Learning Objectives

# Content

# Examples

# Summary
```

Presentation Template (Reveal.js)

```
---
title: "Module X - Presentation Y"
format: revealjs
---

# Slide 1

---

# Slide 2
```

Tutorial Template

```
---
title: "Module X - Tutorial Y"
format: html
---

# Steps

# Exercises
```

Lab Template

```
---
title: "Module X - Lab Y"
format: html
---

# Lab Instructions

# Tasks

# Submission Notes
```

Assignment Template

```
---
title: "Module X - Assignment"
format: html
---

# Overview

# Requirements

# Rubric
```

Project Step Template

```
---
title: "Module X - Project Step"
format: html
---

# Goal of This Step

# Required Deliverables

# Integration With Final Project
```

---

7. Build an Instructor TODO Website

Create `todo.qmd`:

```
---
title: "Instructor TODO Checklist"
format: html
---

# Course-Level Tasks
```

```
- [ ] Update syllabus
- [ ] Customize schedule
- [ ] Adjust grading/deliverables

# Module Tasks (Repeat for Each Module)
## Module 1
- [ ] Lecture Note 1
- [ ] Lecture Note 2
- [ ] Presentation 1
- [ ] Presentation 2
- [ ] Tutorial 1
- [ ] Tutorial 2
- [ ] Lab 1
- [ ] Lab 2
- [ ] Assignment
- [ ] Project Step
- [ ] Highlights Page
```

Educators can check tasks off during development.

---

8. Render the Website

Once content is ready, educators run:

```
quarto render
```

Or click **Render Website** if using RStudio.