

VS Code Development Environment Installation Plan

Norway Analytics

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1 VS Code Development Environment Installation Plan

This comprehensive guide covers the installation of VS Code and all essential development tools for a complete development environment.

1.1 Phase 1: Core Software Installation

1.1.1 1. Visual Studio Code

Latest Version:

Download: <https://code.visualstudio.com/>

Installation Steps: 1. Download the Windows installer (64-bit) from the official website 2. Run the installer as administrator 3. Accept the license agreement 4. Choose installation location (default recommended) 5. Select additional tasks: - Add “Open with Code” action to Windows Explorer file context menu - Add “Open with Code” action to Windows Explorer directory context menu - Register Code as an editor for supported file types - Add to PATH (available from command line) 6. Install and launch

1.1.2 2. R Programming Language

Latest Version:

Download: <https://cran.r-project.org/bin/windows/base/>

Installation Steps: 1. Go to CRAN website 2. Click “Download R for Windows” 3. Click “base” for the base distribution 4. Download the latest R installer (R-4.4.2-win.exe) 5. Run installer as administrator 6. Accept default settings 7. Verify installation: Open Command Prompt and type `R --version`

Optional: Install RStudio for enhanced R development - Download from: <https://posit.co/download/rstudio-desktop/>

1.1.3 3. Python

Latest Stable Version:

Download: <https://www.python.org/downloads/windows/>

Installation Steps: 1. Download Python 3.13.2 Windows installer (64-bit) 2. Run installer as administrator 3. **IMPORTANT:** Check “Add Python to PATH” before installing 4. Click “Install Now” for recommended settings 5. Verify installation: Open Command Prompt and type `python --version` 6. Update pip: `python -m pip install --upgrade pip`

1.1.4 4. Node.js

Latest Version:

Download: <https://nodejs.org/>

Installation Steps: 1. Download the Windows Installer (.msi) 2. Run installer as administrator 3. Accept license and default settings 4. Ensure npm is included in the installation

1.1.5 5. MiKTeX (LaTeX Distribution)

Latest Version: Download: <https://miktex.org/download>

Installation Steps: 1. Download Basic MiKTeX Installer for Windows 2. Run installer as administrator 3. Choose “Install MiKTeX for all users” (recommended) 4. Accept default installation directory 5. Select “Yes” for install packages on-the-fly 6. Complete installation 7. Verify: Open Command Prompt and type `latex --version`

1.1.6 6. Quarto CLI

Latest Version: Quarto 1.4+ (2025)

Download: <https://quarto.org/docs/get-started/>

Installation Steps: 1. Go to Quarto website 2. Click “Download” for Windows 3. Download the Windows installer (.msi) 4. Run installer as administrator 5. Accept default settings 6. Verify installation: Open Command Prompt and type `quarto --version`

Features: - Render documents to HTML, PDF, Word, and more - Support for Python, R, Julia, and Observable - Scientific publishing capabilities - Interactive documents and presentations

1.1.7 7. .NET 8 and .NET 9

Latest Versions: .NET 8.0.19 and .NET 9.0.8 (August 2025)

Download: <https://dotnet.microsoft.com/download>

Installation Steps:

For .NET 8: 1. Go to .NET download page 2. Click on “.NET 8.0” section 3. Download “.NET 8.0 SDK” (includes runtime) 4. Run installer as administrator 5. Accept default settings

For .NET 9: 1. From the same page, click on “.NET 9.0” section 2. Download “.NET 9.0 SDK” (includes runtime) 3. Run installer as administrator 4. Accept default settings

Verification:

```
dotnet --list-sdks
dotnet --list-runtimes
```

1.2 Phase 2: VS Code Extensions

1.2.1 Essential Extensions

1.2.1.1 1. SQL Server (MSSQL)

Publisher: Microsoft **Extension ID:** ms-mssql.mssql

Installation: 1. Open VS Code 2. Go to Extensions (Ctrl+Shift+X) 3. Search for “SQL Server (mssql)” 4. Click Install on Microsoft’s extension

Features: - T-SQL IntelliSense - SQL Server connection management - Query execution and results viewing - Database schema browsing

1.2.1.2 2. Polyglot Notebooks

Publisher: Microsoft **Extension ID:** ms-dotnettools.dotnet-interactive-vscode

Installation: 1. Search for “Polyglot Notebooks” in Extensions 2. Install Microsoft’s extension

Features: - Multi-language notebook support (C#, F#, PowerShell, JavaScript, HTML, SQL) - Interactive coding experience - Rich output display - Jupyter-compatible

1.2.1.3 3. Jupyter

Publisher: Microsoft **Extension ID:** ms-toolsai.jupyter

Installation: 1. Search for “Jupyter” in Extensions 2. Install Microsoft’s Jupyter extension

Features: - Jupyter notebook support (.ipynb files) - Python, R, Julia kernel support - Interactive plots and rich outputs - Variable explorer - Debugging support

1.2.1.4 4. Quarto

Publisher: Quarto **Extension ID:** quarto.quarto

Installation: 1. Search for “Quarto” in Extensions 2. Install the official Quarto extension

Features: - Quarto document (.qmd) support - Render command with preview - Syntax highlighting for markdown and embedded languages - Code completion for Python, R, Julia - Live preview for diagrams

1.3 Phase 3: MCP Servers

1.3.1 Model Context Protocol (MCP) Servers

1.3.1.1 1. Playwright MCP Server (Microsoft)

Purpose: Browser automation and web testing capabilities

Installation: 1. Open VS Code 2. Go to Extensions panel 3. Click on “MCP Servers” tab 4. Search for “Playwright” 5. Click “Install Playwright” - OR use the direct install link: <vscode:mcp/install?%7B%22name%22%3A%22playwright%22%2C%22gallery%22%3Atrue%2C%22command%22%3A%22%22%7D>

Features: - Browser automation (Chrome, Firefox, Safari) - Web scraping capabilities - End-to-end testing support - Page interaction (clicks, forms, navigation)

1.3.2 Additional VS Code Extensions to Consider:

1. **Python** (ms-python.python) - Enhanced Python support
2. **R** (REditorSupport.r) - R language support

1.4 Installation Order Recommendation

For optimal setup, install in this order:

1. **VS Code** (core editor)
2. **Git for Windows** (version control)
3. **Node.js** (JavaScript runtime + npm)
4. **Python** (programming language)
5. **R** (statistical computing)
6. **.NET 8 & 9** (Microsoft development platform)
7. **MiKTeX** (LaTeX distribution)
8. **Quarto CLI** (document publishing system)
9. **VS Code Extensions** (development tools)
10. **MCP Servers** (AI-powered capabilities)

1.5 Post-Installation Verification

After completing all installations, verify everything works:

```
# Check versions
code --version
git --version
node --version
npm --version
python --version
R --version
quarto --version
dotnet --list-sdks
latex --version

# Test VS Code with extensions
code . # Opens current directory in VS Code
```

1.6 Notes

- All installations should be run as Administrator for proper system integration
- Restart your computer after installing all core software
- Some extensions may require additional dependencies that will be automatically prompted
- MCP servers require Node.js to be installed first
- Quarto extension works best when both Python and R are properly configured
- **Quarto CLI is essential** - it's required for rendering documents and must be installed before using the VS Code Quarto extension effectively
- Need help? contact Norway Analytics

This setup provides a comprehensive development environment supporting multiple programming languages, document creation, database management, and AI-powered development assistance.