

Programming Resources

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- [The Number One Skill You Need to Have to Become a Software Developer](#)
- [Four Stages of Becoming a Programmer](#)
- [Steve Jobs gives the Best Definition of Object-Oriented Programming](#)

Instructor GitHub Repositories

- <https://github.com/itinstructor/WNCCComputerScience>
- <https://github.com/itinstructor/JupyterNotebooks>

OER (Open Educational Resources) Class Texts

Some of the instructional materials used in many courses were adapted and remixed under Creative Commons license. These are called OER (Open Educational Resources.)

Learn Coding Interactively

These websites teach coding interactively like DuoLingo.

- [Exercism](#)
- [SoloLearn](#)

Python Tutorials

- [30 Days of Python](#) (teclado Blog)
- [A Beginner's Python Tutorial](#)
- [AskPython.com](#) (Python reference and examples.)
- [ehmatthes.github.io/pcc_2e/cheat_sheets/cheat_sheets/](#) (Python Cheat Sheets)
- [developers.google.com/edu/python](#)
- [Hands-on Python Tutorial](#)
- [How to Write Beautiful Code with PEP 8](#) (Python coding conventions tutorial for readable code.)
- [How To Think Like a Computer Scientist - Interactive Version](#)
- [How to Think Like a Computer Scientist](#)

- [Hitchhiker's Guide to Python](#)
- [Invent with Python](#) (*Free online Python books by Al Sweigart*)
- [ITSE 1359 Introduction to Scripting Languages: Python](#) (Excellent online book to learn Python written by a community college instructor)
- [ITSE 1359 Python Scripting](#) (Updated online course written by the same instructor.)
- [learnpython.org](#)
- [Non-Programmer's Tutorial for Python 3](#)
- [Python Basics](#) (A very intensive and free video course)
- [The Python Tutorial](#)
- [The Python Tutorial -- 6. Modules](#)
- [Python3 Tutorial](#)
- [PythonTutorial.net](#)
- [Program Arcade Games With Python and Pygame](#)
- [tutorialspoint -- Python Tutorial](#)
- [RealPython](#) (Lots of great free tutorials.)
- [The Python Language Reference](#)
- [Python Scientific Lecture Notes](#)
- [The Python Standard Library](#)
- [Python Tutor](#) (Online visualization of Python and Java code execution)
- [StackOverflow.com](#) (Programming questions asked and answered.)

Python Tkinter Tutorials

- [Custom Tkinter](#) (A modern take on Tkinter)
- [TkDocs](#) (Extensive tkinter ttk tutorial)
- [Tkinter.com](#) (Hundreds of video tutorials by John Elder of Codemy.com)
- [Ttk Widgets](#)
- [ttkthemes](#) (A library of ttk themes – pip install ttkthemes)

Python OER Books

Some of the instructional materials used were adapted and remixed under Creative Commons license <https://creativecommons.org/licenses/by-nc-sa/3.0/us> from the following books.

- [The Coder's Apprentice](#), Creative Commons, Pieter Spronck
- [Python for Everybody](#), Creative Commons, Dr Charles Severance
- [A Practical Introduction to Python Programming](#), Creative Commons, Brian Heinold
- [ISTE 1359 Introduction to Scripting Languages: Python](#), Creative Commons, Richard Baldwin

Java Tutorials

- [How To Think Like a Computer Scientist](#)
- [java-made-easy.com](#)
- [tutorialspoint -- Java Tutorial](#)
- [w3schools.com/java](#)

Java OER Books

- [Intermediate Programming](#)
- [Programming Fundamentals](#)
- [Think Java, Second Edition](#)

C++ Tutorials

- [C++ Programming Course - Beginner to Advanced](#) (31 Hour Youtube Course)
- [Bucky's C++ Programming Tutorials Playlist](#)
- [classes.mst.edu/compsci1570/](#)
- [cpluplus.com](#)
- [guru99.com/cpp-programming-tutorial.html](#)
- [How to Learn the C++ Programming Language](#)

- [Object Oriented Programming \(OOP\) in C++ Course](#) (Youtube video)
- programiz.com/cpp-programming
- tutorialspoint.com/cplusplus
- w3schools.com/cpp

C++ OER Books

- [Rook's Guide to C++](#)
- [Think C++](#)

SQL Tutorials

- [Khan Academy - SQL](#)
- [Mimo - SQL](#)
- [Sololearn - SQL](#)

MATLAB Tutorials

- [MATLAB Online Tutorial](#) (Multiple videos, easy steps)

C# Tutorials

- [C# Corner](#)
- [Free Code Camp](#)
- [Microsoft Learn C#](#)
- [tutorialspoint – C# Tutorial](#)

Video Tutorials

YouTube has lots of tutorials on almost any programming language. Each of these is a collection of tutorials for various languages.

- [30 Days of Python](#)
- [Corey Schafer](#)
- [Freecodecamp](#)

- <https://www.freecodecamp.org/news/how-to-learn-the-c-programming-language>
- [NeuralNine](#)
- [Programming with Mosh](#)
- [Teclado](#) (Excellent Python Tutorials)
- [Udemy](#) (Lots of great classes for low cost. They have sales all the time.)

Free Online Coding Classes

- <https://www.freecodecamp.org/news/free-online-programming-cs-courses/>

Clean Coding

- <https://dev.to/alexomeyer/10-must-know-patterns-for-writing-clean-code-with-python-56bf>

Beginning Coding Projects

- [100 Python Projects for Practice](#)
- <https://github.com/karan/Projects>
- [70+ Simple And Advanced Python Projects With Source Code](#)
- [70+ Python Projects for Beginners](#)
- [The Big Book of Small Python Projects](#)

Coding IDE's (Integrated Development Environments)

- [Eclipse](#) (Open source cross platform IDE for Python, Java, C++, etc.)
- [Geany](#) (Open source cross platform IDE for Python, Java, C++, etc.)
- [PyCharm Community Edition](#) (Open source free community edition for Python)
 - [JetBrains](#) (Free Educational Licenses for all their professional development tools, including Pycharm.)
- [IntelliJ IDEA](#) (Open source free community edition for Java)
 - [JetBrains](#) (Free educational Licenses for all their professional development tools, including IntelliJ.)

- [JGrasp](#) (Simple Java, C++ IDE)
- [Visual Studio Code](#) (Open source cross platform IDE for Python, Java, C++, etc. sponsored by Microsoft)
 - [Visual Studio Code Tutorials](#) (Python)
- [Visual Studio Community Edition](#) (Open source cross platform IDE for Python, Java, C++, C#, etc. sponsored by Microsoft)

Online IDE's

- [CodeSkulptor3](#) (Collaborative Online Python editor)
- [CodePen](#) (Online HTML, CSS, Javascript editor)
- [Compiler Explorer](#) (C++ compiler)
- [C++ shell](#) (C++ compiler)
- [IdeOne](#) (Multiple languages)
- [JDoodle](#) (76+ languages with multiple versions)
- [Online GDB](#) (Online IDE for almost any language)
- [Repl.it](#) (Online IDE for almost any language)
- [Skulpt](#) (Online Python interpreter)
- [TIO](#) (Try It Online)
- [Trinket.io](#) (Online Python IDE)
- [wandbox.org](#) (C++ compiler)

JSON to Java and C# POJO Converters

- codebeautify.org/json-to-java-converter
- json2csharp.com/json-to-pojo

Robotics & Microcontrollers

- [Adafruit](#) (Microcontroller parts and lots of good tutorials)
- [Aliexpress](#) (Chinese supplier of microcontroller components)

- [Arduino](#) (The Arduino IDE)
- [Banggood](#) (Chinese supplier of microcontroller components)
- [Gearbest](#) (Chinese supplier of microcontroller components)
- [A Gentle Introduction to Robotics](#): Volume 1: mBlock and the mBot, Charles McKnight
- [Hackster](#) (Microcontroller tutorials and projects)
- [Instructables](#) (Microcontroller tutorials and projects)
- <http://learn.makeblock.com/en/makeblock-app> (Control and program your mBot with bluetooth from a portable device.)
- <http://learn.makeblock.com> Learning resources for the mbot.
- <http://forum.makeblock.com> MakeBlock user forums.
- [mBlock](#) software for programming an mBot from a computer
- [Makeblock](#) (Home of the mighty mBot)
- [MagPi Magazine](#) (Free magazine about the Raspberry Pi)
- [Sparkfun](#) (Microcontroller components and lots of good tutorials)

Create Game Music and Effects

- <https://www.beepbox.co> (Create 8 bit songs.)
- <https://sfxr.me/> (Create sound effects.)
- <https://elevenlabs.io/sound-effects>
- <https://www.leshylabs.com/apps/sfMaker>

Icons and Fonts

- [IconArchive](#) (Free ico files for your GUI programs)
- [FontSpace](#) (Free fonts for Pygame and other game programming)
- [Pixabay.com](#) (Free images for programs)

ASCII Art

- [ASCII Art](#) (Decorate your console programs)
- [GetEmoji.com](#) (Put some emojis in your code.)
- [Unicode Tables](#) (Add some 🗨️ 😊 🚂 🏏 to your code.)

Free Public Web API's

- <https://any-api.com>
- <https://apilist.fun>
- <https://github.com/public-apis/public-apis>
- <https://mixedanalytics.com/blog/list-actually-free-open-no-auth-needed-apis>
- <https://public-apis.io>
- jsonplaceholder.typicode.com/ (Test API with fake JSON data)

GitHub

- <https://dev.to/eludadev/take-your-github-repository-to-the-next-level-17ge>