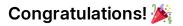# STEM League and Beyond

Congratulations! 🎉

You're nearing the end of the STEM League program, but this is only the beginning of your coding experience 💻. The internet 🌐 is a powerful resource to help teach you things to start a new skill, advance your current skills, and to seek help.

If you're interested in strengthening or learning more about programming (e.g. web, data, ect.), you should check out these project ideas, advanced topics, other coding languages, and the resources associated with them!

📒 Project Ideas

≡ Type	Aa Idea	≡ Summary
Data Programming / Web Programming	To Do List	Create a to do list which let's you add or remove things you need to do
Web Programming	Portfolio	Create a portfolio displaying all the work you've done in STEM League
Web Programming	Recreate a social media website	Search up any website (e.g. Instagram, Youtube) and try to recreate it with your spin on it! (ex. Pokemon Facebook)
Web Programming	Recipe Generator	Create a web application that uses this recipe API where you input ingredients you have and it spits out recipes you can make
Data Programming / Web Programming	Games	Recreate a game from scratch (ex. snake, a 3 x 3 shuffle puzzle, pokemon game)
Data Programming / Web Programming	Secret Santa Generator	Assign a group of people their secret santa randomly
Web Programming	Blog site	Create a blog site where you can add/remove/edit posts
Data Programming	Dice Rolling Simulator	Imitate rolling of a dice
Data Programming / Web Programming	Magic 8 Ball	Tell someone's fortune with the magic 8 ball simulator

See more ideas:

- https://www.reddit.com/r/learnprogramming/comments/2a9ygh/1000_beginner_programming_projects_xpost/

🧠 Advanced Topics

React

React is a JS library allowing web developers to change their development workflow to code and view things in components (i.e. pieces)

- https://info340.github.io/react.html

Firebase: Realtime Database

In web development, let's say you create a list web application where users can add, remove, or edit the tasks they need to do. Whenever you refresh the page the entire list is gone. Firebase is a database (i.e. a center to store information) that allows for data to persist on your webpage. So if you want the changes of your list to stay there even after you refresh it, check out firebase!

- https://firebase.google.com/docs/web/setup

NodeJS

In web development, all of your code is run through a browser but is it possible to run your code without a browser? With NodeJS, it is! It's a library that allows developers to run code in their terminal.

- https://nodejs.dev/learn

Custom Discord Bot

Prerequisite: Need to know Node JS or Python

Learn how to create a custom Discord bot. If you plan to have a future discord server, coding a custom bot would be a great idea since you might not find a bot that fulfills your own needs.

- https://www.writebots.com/how-to-make-a-discord-bot/
- https://medium.com/@mason.spr/hosting-a-discord-js-bot-for-free-using-heroku-564c3da2d23f (Hosting)

Chrome Extension

If you're main browser is Google Chrome, you should check this out!

- https://medium.com/javascript-in-plain-english/creating-your-first-chrome-extension-78666e4a93db (Create a Tasty Chrome Extension)
- https://medium.com/swlh/how-to-build-a-google-chrome-extension-b35449edd6ce (Chrome Extension Basics)

🏕️ Code Editors / Tools

Repl.it is a great coding editor that allows you to have your code editor, browser preview, and console in one location. Though if you want to up your coding game and move away from the crashes of the Repl.it, you can also try these tools and editors:

Aa Name	☰ Type	↻ URL
Atom	Code Editor	https://atom.io/
Visual Studio Code (recommended)	Code Editor	https://code.visualstudio.com/
Sublime Text	Code Editor	https://www.sublimetext.com/
Terminal (Mac)	Terminal	already installed on mac
Powershell (PC)	Terminal	https://docs.microsoft.com/en-us/powershell/scripting/install/installing-powershell?view=powershell-7
Git	Tool	https://github.com/

😲 New Languages

Kotlin/Java: Android Mobile Development

- https://developer.android.com/

Swift: iOS Mobile Development

- https://www.hackingwithswift.com/?fbclid=IwAR3V7nTx-Rj6MimmmnLF09IgUSuvXXfHFlrSdsigdqBRSin7pSdpbLgDQWY

R script

- https://info201.github.io/

TypeScript

- https://www.typescriptlang.org/docs