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A novel approach for using programming exercises in electromagnetism coursework CHRIS ORBAN, NASH BRECHT, Ohio State Univ - Columbus — While there exists a significant number of web interactives for introductory physics, students are almost never shown the computer code that generates these interactives even when the physics parts of these programs are relatively simple. Building off of a set of carefully-designed classical mechanics programming exercises that were constructed with this goal in mind, we present a series of electromagnetism programming exercises in a browser-based framework called p5.js. Importantly, this framework can be used to highlight the physics aspects of an interactive simulation code while obscuring other details. This approach allows absolute beginner programmers to gain experience in modifying and running the program without becoming overwhelmed. We plan to probe the impact on student conceptual learning using the Brief Electricity and Magnetism Assessment and other questions. We invite collaborators and teachers to adopt this framework in their high school or early undergraduate classes.

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