

Advanced Input Types

20 minutes

Introduction to Web Frontend

Outcome 1.15

Outcome 1.16

Outcome 1.22

Outcome 2.16

Outcome 3.1

Outcome 3.3

WHAT THIS LESSON DOES

Delve into the world of advanced HTML input types in this step-by-step lesson. Learn to create number, date, and colour input fields, enhancing user experience. Then, put your knowledge into practice by enhancing a form with these advanced input types.

CURRICULUM OUTCOMES

Outcome	What the specification asks for
1.15	consider the quality of the user experience when interacting with computers and list the principles of universal design, including the role of a user interface and the factors that contribute to its usability
1.16	compare two different user interfaces and identify different design decisions that shape the user experience
1.22	read, write, test, and modify computer programs
2.16	use data types that are common to procedural high-level languages
3.1	understand and list user needs/requirements before defining a solution
3.3	use appropriate programming languages to develop an interactive website that can display information from a database that meets a set of users' needs

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand the purpose and functionality of advanced input types in HTML forms.
- Implement number input types for numeric data entry.
- Apply date input types for calendar-based selections.
- Utilise colour input types for selecting colours via a picker.
- Enhance web forms by integrating multiple advanced input types effectively.

BEFORE THE LESSON

- Confirm the in-lesson code editor runs and displays the rendered form for each snippet, so students see the numeric spinners, calendar picker and colour picker appear as expected.
- Note that the date and colour pickers render differently across browsers. Test in whatever browser the room uses so you are not surprised by its appearance.

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HOW THE LESSON RUNS

- Introduction to Advanced Input Types
- Number Input Type
- Date Input Type
- Color Input Type
- Enhancing a Form with Advanced Input Types

TEACHING MOVES

- 2. Number Input Type. Run the snippet and point out the up and down arrows and numeric keypad. Ask why `type='number'` is better than `type='text'` for age. Steer them toward validation and the correct on-screen keyboard on mobile.
- 3. Date Input Type. Click the field so the calendar picker opens live. Stress that the value the browser stores is always YYYY-MM-DD regardless of how the picker displays it, which matters when data is later processed.
- 4. Color Input Type. Open the picker and select a colour. Show that the stored value is a hex code like `#ff0000`, not the word red. Link this to CSS colour values they may already recognise.
- 5. Enhancing a Form with Advanced Input Types. Have them add all three inputs to the starter form. Insist every input has a matching label with a `for` attribute pointing at the id. Circulate and check ids are unique.

WHAT TO WATCH FOR

- Students think `type='number'` will physically stop a user typing letters. Some browsers still allow non-numeric characters and the field can submit empty or invalid. Try typing letters into the rendered field together. Introduce `min`, `max` and the idea that server-side or JavaScript checks are still needed for real validation.
- Students assume the colour or date value is stored as they see it on screen, the word or the displayed format. Show the actual submitted value: a hex code for colour, YYYY-MM-DD for date. What the picker shows and what the form sends are two different things.
- Inputs added without a matching label, or with a `for` attribute that does not match any id. Walk through one correct pair on the board. Have students read `for` and `id` aloud as a check that they are identical.

DIFFERENTIATION

- Emerging: Give the exact number input as a template and have them copy the pattern for date and colour, changing only the type and the names.
- Developing: Ask them to explain out loud what each input renders before running it, then confirm by running the code.