# Coding with JS

01

Input and Output

Alerts and **prompts** are ways to communicate with users by displaying messages or requesting input through dialog boxes. These dialog boxes are managed by the browser and are easy to use in your code.

Output with Alerts

An alert is a simple way to display information as **output** to users in a dialog box. To create an alert, you use the `alert()` function, passing the message you want to display as a **string**. A string is the name in coding for text.
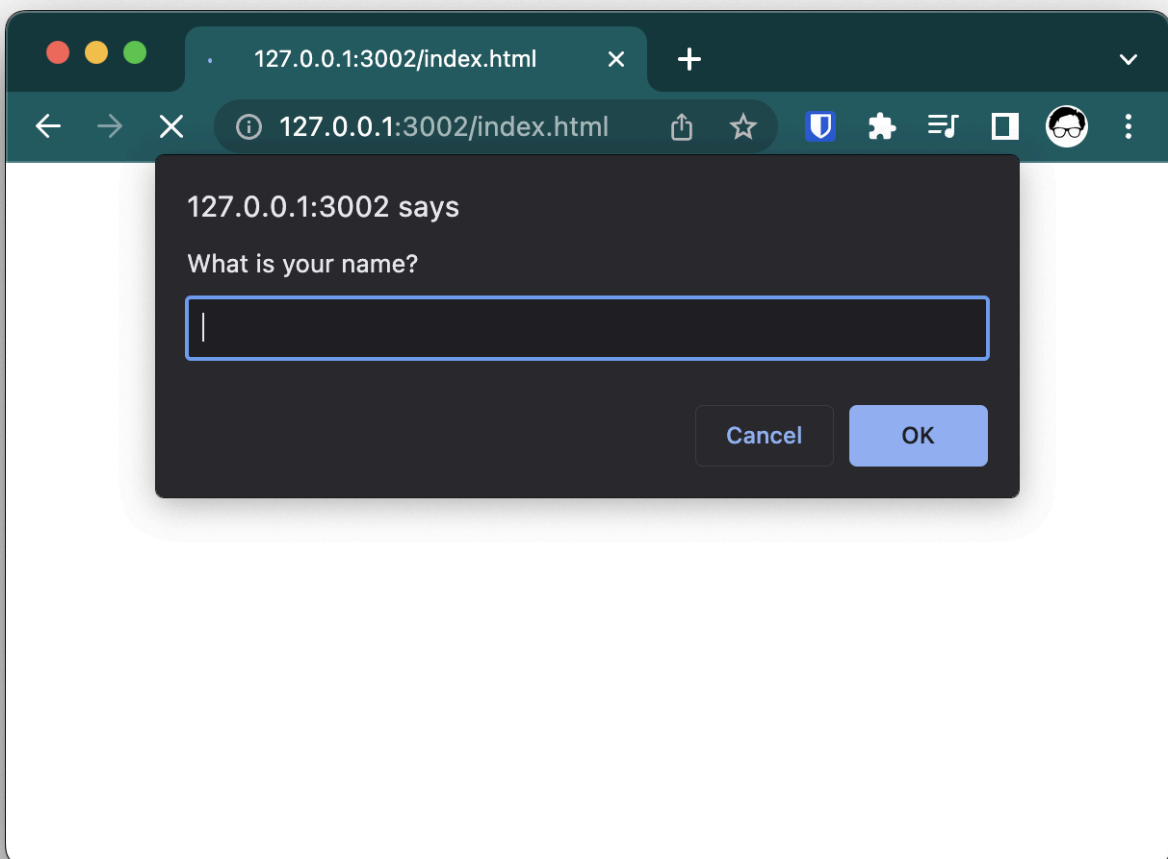
```
alert("Hello world!")
```
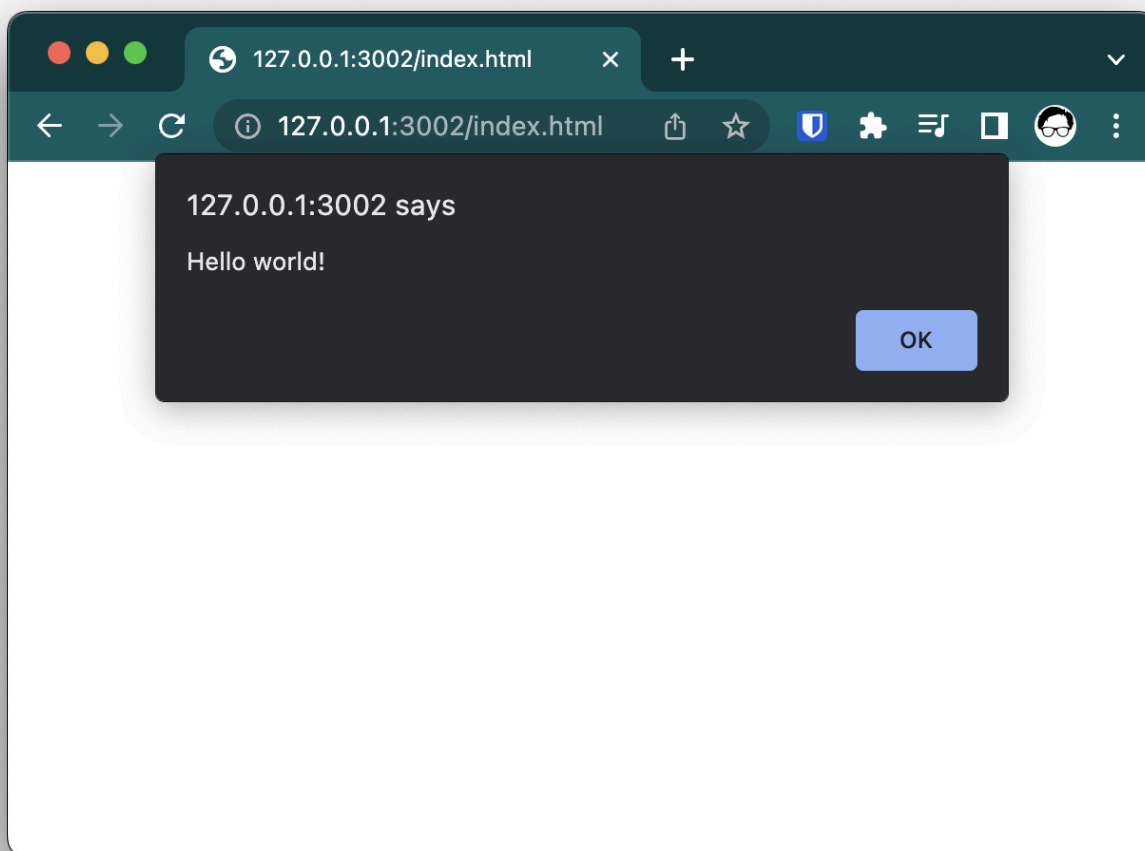

This code will display a dialog box with the message "Hello, World!" and an OK button. The user can click the OK button to dismiss the alert.

Input with Prompts

A prompt is a dialog box that asks the user for **input**. To create a prompt, you use the `prompt()` function, passing in a message as a **string** to display.

```
let userInput = prompt("What is your name?")
```

This code will display a dialog box with the message "What is your name?" and OK and Cancel buttons. The user can enter a value and click OK to submit their input, or click Cancel to dismiss the prompt. The input value will be stored in the `userInput` variable.

By using alerts and prompts, you can easily gather information from users and provide them with feedback, creating a more interactive experience on your web pages.

```
let username = prompt("What's your name?")

alert('Hello ' + username)
```

Predict

Read the code carefully. When you're ready, write what you predict it will do.

What do you think the code will do?

Run

Run the code, and say whether your prediction was right or not, and note any differences.

Did it do what you predicted?

✅   ❌

Differences

Investigate

1. Which key word in the code is the **output** function?

2. Which key word in the code is the **input** function?

3. Which part of the code is the **string**?

4. Why does the first line use double quotes, but the second line uses single quotes?

5. What would happen if you ran this code: `alert('I love schol')`

6. What would happen if you ran this code: `Alert("I love school")`

7. What would happen if you ran this code: `alert("I love school"`

8. What is the name of the **variable** in this code: `let height = prompt('How tall is you?')`

9. What is the name of the **variable** in this code: `let colour = prompt('Password:')`

Modify

Adapt the code to ask your own question and output your own message, and add comments to show what it does.

A comment is a piece of code that's ignored by the computer. It's there to leave notes to yourself and other coders about what the code does. Comment lines start will two slashes //

```
// This code takes the user's name and greets them.
let username = prompt("What's your name?")

alert('Hello ' + username)
```

Make

In the **make** sections you use the skills you've learned to create a program from scratch.

> Write a program that outputs a joke. The joke and the punchline should be output separately.

Help! My Code Doesn't Work!

Check these:
- `print` does not have any capital letters
- Strings have speech marks `'  '`
- `+` and variable names do **not** have speech marks
- In `alert` and `prompt`, strings (including speech marks) have brackets `( )`
- Variable names are **exactly** the same every time
- Assignments have a single `=`
- Assignemnts have a variable name on the **left**
- The `+` symbol concatenates (joins) strings and variables

Word Find

```
j  o  t  g  g  c  v  a  r  i  a  b  l  e  i
k  a  z  e  n  k  w  w  r  g  z  j  c  m  n
o  a  v  s  l  i  n  k  e  t  p  s  s  y  p
i  u  j  a  v  h  m  o  p  e  s  l  q  m  u
l  g  k  i  s  l  q  m  g  n  i  r  t  s  t
r  l  x  c  l  c  o  f  a  q  m  s  s  p  y
d  p  v  e  z  r  r  j  u  r  t  l  d  j  f
e  d  o  c  p  e  u  i  e  n  g  b  b  o  s
v  f  x  v  j  m  s  a  p  l  c  o  u  m  e
c  p  i  h  j  s  g  t  d  t  p  t  r  l  z
q  l  s  t  e  t  c  r  t  c  p  p  i  p  j
p  m  s  m  s  t  k  e  l  u  l  c  x  o  a
u  y  n  l  d  x  p  l  t  b  m  r  p  y  n
d  d  e  v  o  v  q  a  t  i  a  f  m  w  a
o  f  m  f  z  w  s  n  e  k  d  c  b  g  t
```

alert	code	css	function	html
input	javascript	let	output	programming
prompt	string	variable		

```
let name = 'Mary'
alert('We want to know if you like programming!')

alert('Do you like programming ' + name + '?')
let answer = prompt()

alert('Great, you said ' + answer + '!')
alert("Let's learn some code today.")
```

Predict

Read the code carefully. When you're ready, write what you predict it will do.

What do you think the code will do?

Run

Run the code, and say whether your prediction was right or not, and note any differences.

Did it do what you predicted?

✅   ❌

Differences

Investigate

1. How many **output** statements are used in the code?

2. How many **variables** can you find in this code and what values do they hold?

3. `alert()` is a function that you can use to display a message on the screen.
   What other **function** is in this code and what does it do?

4. What happens when you use `alert()` with **nothing** inside the brackets?

5. What is **concatenation** and what symbol is used for it?

6. What is **assignment** and what symbol is used for it?

7. Copy out the lines that use **assignment**.

variable name   variable value

let age = 15

variable
keyword

assignment

15

age

miro
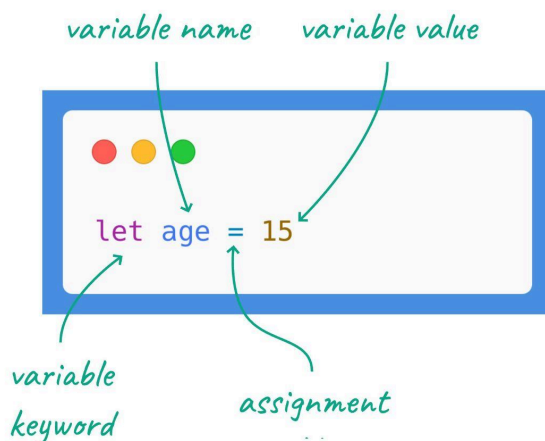
Modify

1. Change the program so that it uses **your name** instead of Mary.

2. Change the program so that it lets you type in your answer on the **same line** as the question.

3. Change the program so that it asks the user what **their name** is at the beginning of the program.

Make

Ask the user three questions, and each time give a suitable response:
1. What **their name** is.
2. What they had for **breakfast.**
3. What their **favourite colour** is.

Ask another person to test your program.

Extension

Ask the user how old they are and then tell them how old they will be on their next birthday.

Tip: You will need to change the user's answer into a number. You can do this by using this code:

```
variableName = Number(variableName)
```

Summary

Term	What it means	How to do it
Input	Getting some information from the user.	`let input = prompt()`
Output	Sending a message to the user.	`alert('This is output')`
String	The name given in coding to text.	`'This is a string'`
Variable	Named storage for a value.	`let age = 15` `let name = 'Mary'`
Value	The information that the variable is storing.	
Assignment	Where a variable is given a value, usually with an = sign.	
"variableName is not defined"	This error message tells you that the variable has not been created yet (with `let`).	`age = 15`

Crossword
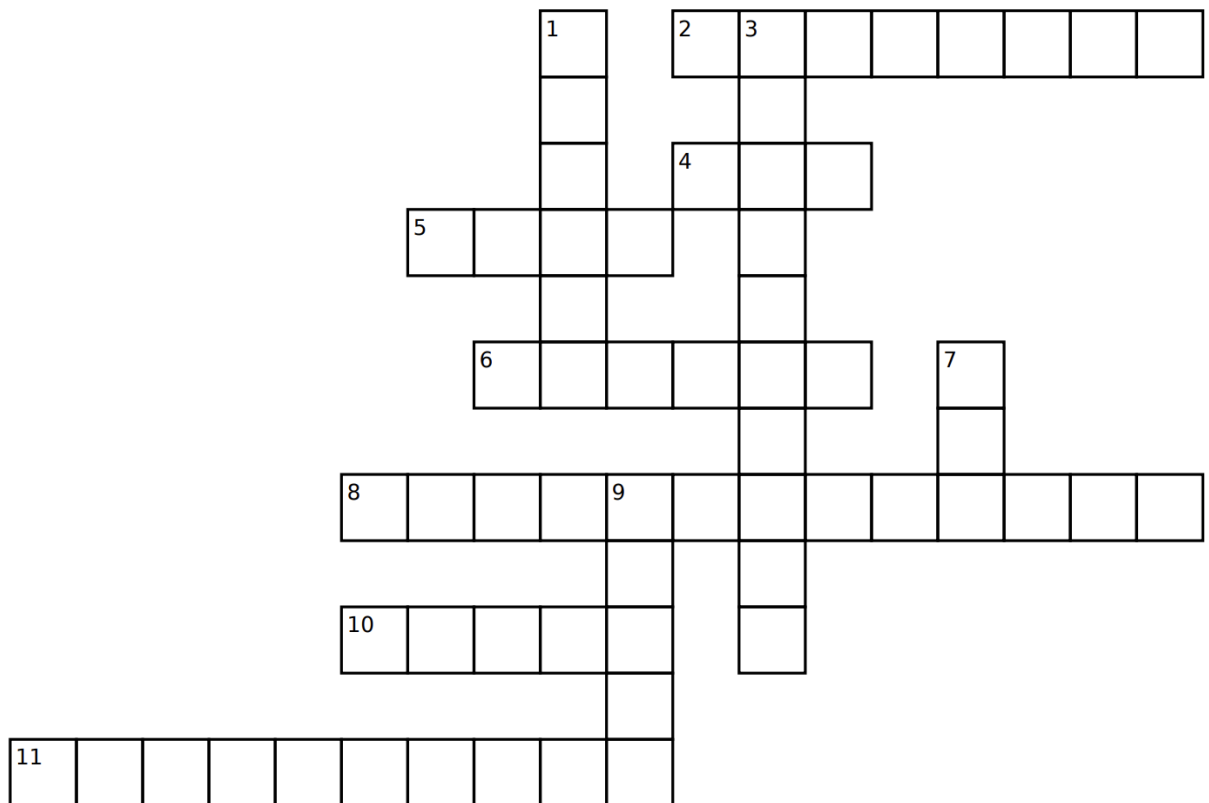
Down:
1. Input function
3. When a variable is given a value
7. Keyword to create a variable
9. Output function

Across:
2. Named storage of a value
4. Aesthetics code of a web page
5. Structure code of a web page
6. Coding name for text
8. Combining two strings
10. Information stored by a variable
11. Behaviour code of a web page

```
// Snippet 1
let firstName = 'Virginia'
alert(firstName)

// Snippet 2
let lastName = 'Woolf'
let fullName = firstName + ' ' + lastName
alert(fullName)

// Snippet 3
alert('Hello ' + firstName + '. Your full name is ' +
fullName + '.')
```

Predict

Read the code carefully. When you're ready, write what you predict it will do.

What do you think the **Snippet 1** code will do?

What do you think the **Snippet 2** code will do?

What do you think the **Snippet 3** code will do?

Run

Run the code, and say whether your prediction was right or not, and note any differences.

Did it do what you predicted?

✅ ❌

Differences

Investigate

1. Identify a **variable** in the code

2. Identify a **string** in the code

3. How many variables are used in the program?

4. Line 6 is changed to `let lastName = 'Thorpe'`. How does this affect the output?

5. Line 2 is changed to `let firstName = "Agatha"`. How does this affect the output?

Māori Mihi

Mihi (greeting) is an extremely important part of Māori culture. Before speaking in a formal setting (such as a marae) it is expected that you announce who you are and where you come from with a mihi. Through a mihi, others can make connections with your pepeha (iwi affiliations to particular natural landmarks) and your whakapapa/genealogy. A mihi has strong spiritual significance as you are speaking on behalf of your tīpuna (ancestors) as well as bringing them along for your kōrero.

Task

Write a program to help the user create a mihi with the following structure.
Replace the words in square brackets with information you gather from the user.

Tēnā koutou katoa,

Ko [mountain] tōku maunga,

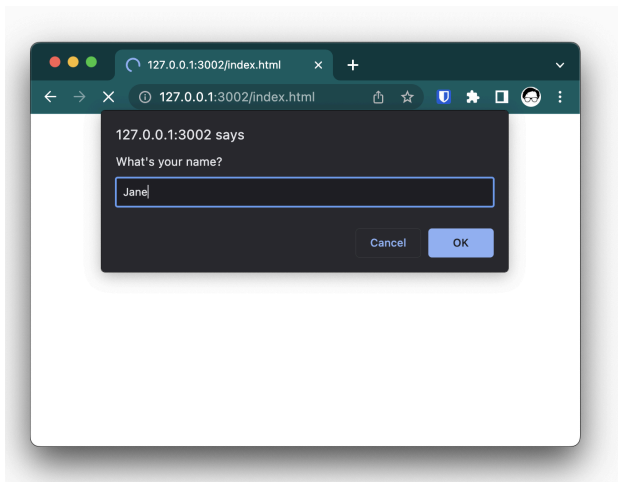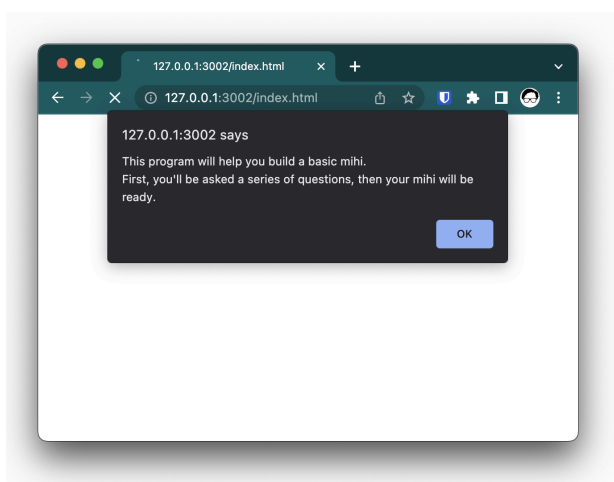Ko [river/ocean/lake/bay-harbour] tōku awa/moana/roto/whanga,

Nō [home town] au,

Ko [name] tōku ingoa,

Tēnā koutou,

Tēnā koutou,

Tēnā koutou, katoa.

Example output

If you start a pepeha with a line like 'Ko Aoraki te maunga', by naming a Māori mountain some people will assume you are Māori. It is up to you to decide what structure to use, but this guide uses an alternative approach for non-Māori given by a member of Ngāi Tahu that acknowledges ancestral landmarks without any potential confusion.

Task

Write a program to help the user create a mihi with the following structure.
Replace the words in square brackets with information you gather from the user.

Tēnā koutou,

Kei te mihi au ki a [mountain],

Kei te mihi au ki a [river/ocean/lake/bay-harbour],

Ko Te Tiriti o Waitangi te waka,

Ko Aotearoa te iwi,

Nō [home town] au,

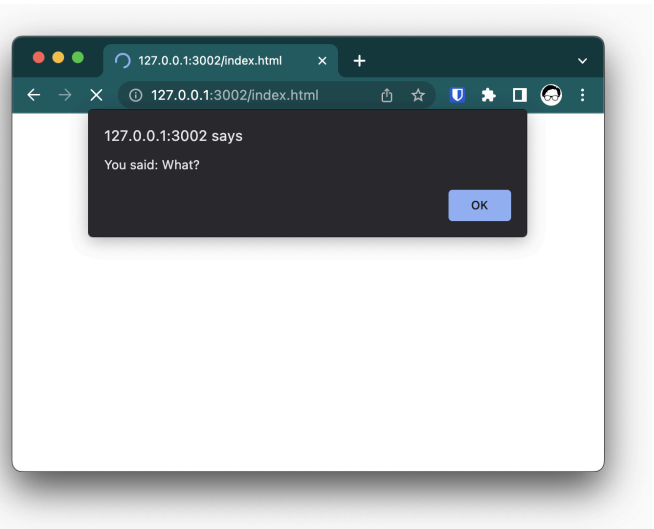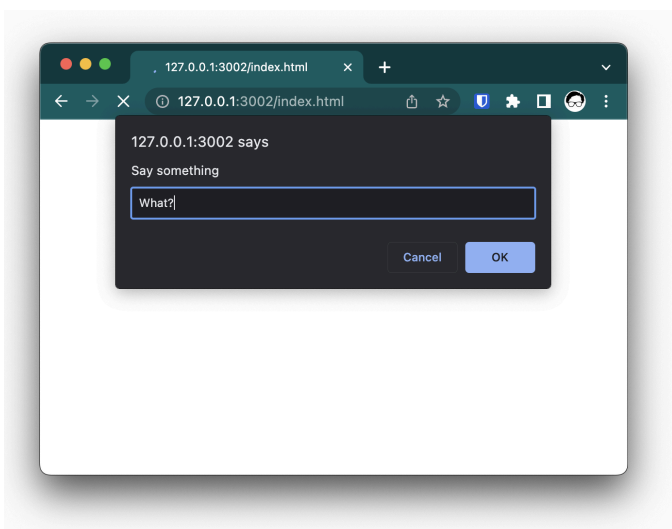Ko [name] tōku ingoa,

Tēnā koutou,

Tēnā koutou,

Tēnā koutou, katoa.

The Repeater

Task

Write a program that takes the user's input and then repeats it back to them immediately.

Example output

Task

Create a program to ask the user for a series of words,
and then output a short story with those words filling the gaps.
The user should not know the story before they give the words. This often makes the story silly.

You can use this story template if you wish:

"[exclamation]! he said [adverb] as he jumped into his convertible [noun] and drove off with his [adjective] wife." *

Example output
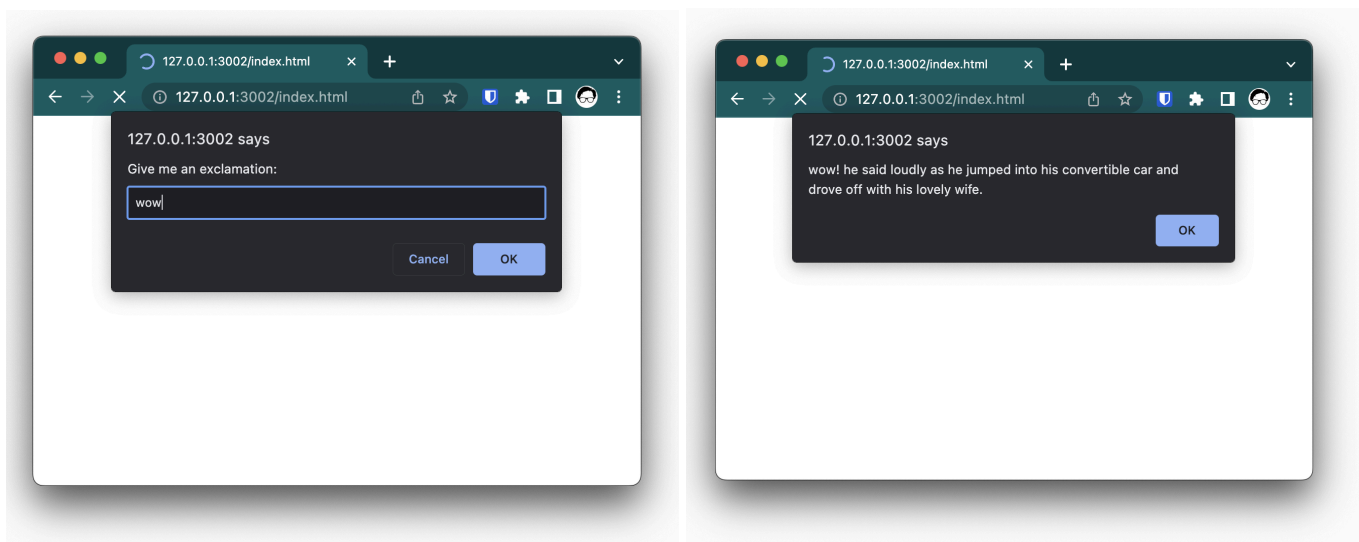
🐞 Debugging

Circle all of the errors in these blocks of code.

```
// This code takes the user's name and greets them.
username = Prompt("What's your name?")

Alert('Hello ' username)
```

```
let name = 'Mary'
alert('We want to know if you like programming!')

alert('Do you like programming ' + Name + '?')
let answer = prompt(

Alert('Great, you said ' + anwer + '!')
alert("Let's learn some code today.")
```

```
let person = prompt("Hi, I'm the computer. What's
your name?")

let subject = prompt("Nice to meet you, " + person +
". What subject are you in at the moment?")

let topic = prompt(subject + "'s my favourite. What
are you learning about?")

let difficulty = prompt("Ah, " + topic + " is tough.
How're you finding it?")

alert("Interesting. Well, " + person + ", I hope that
" + topic + " goes well and you get a good grade in "
+ subject + ". Have a nice day!")
```