type()
Determine requirements

↓

Write the source code

↓

Convert source code to object code

↓

Run the program

↓

Check the output

Data Types and Variables
Debugging

Syntax errors:
Program doesn’t run because structure isn’t correct or doesn’t follow rules of language

Runtime errors:
Happen when the program is running.
Also called “exceptions”

Semantic errors:
Program runs without an error message, but not correctly because it’s not doing what you meant it to
Variable Assignment

Variables are assigned with the assignment token, =

```plaintext
price = 19.99
```

Assigning more than one variable at a time is possible

```plaintext
a, b, c = 'foo', 'bar', 'baz'
```

Swapping variable values

```plaintext
x, y = y, x
```
Basic Data Types

Integers
Floating Point Numbers
Strings
**Integer**

`int`

A whole number

Can be of unlimited size

Be careful not to use commas in your numbers, for example: 1,000
Floating point number

float

A number that contains a decimal point
Has minimum and maximum values
Limited precision
4 is not the same as 4.0
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Formatting Numbers
format()

The format function allows you to format numbers, like floats.

Takes two arguments: the value to be formatted, and the format specification:

format(value, 'format_spec')

The last number will also be rounded as appropriate.
String

A sequence of one or more characters

str

A string of letters and numbers

Enclosed in quotation marks

Double quoted strings can contain single quotes and vice versa

Triple quotes can span multiple lines
String

String Operators

+  
*  
#