Event class

Contains the date when the event happened, the name of the machine where it happened, the user involved, and the event type

Attribute

1. Date
2.User
3. Machine
4. Type

Login
Logout

Syntax
The rules for how a sentence is constructed

Semantics
The actual meaning of statements

Script
A program that's short, simple, and can be written very quickly

Automation
The process of replacing a manual step with one that happens automatically

Automating tasks allows you to focus on projects that are a better use of your time, letting computers do the boring stuff for you.

Python interpreter
The program that reads what's in the recipe and translates it into instructions for your computer to follow.

Functions
Pieces of code that perform a unit of work

Keywords
Reserved words that are used to construct instructions

While loops
Instruct your computer to continuously execute your code based on the value of a condition

Use while loops when you want to repeat an action until a condition changes.

Initializing
To give an initial value to variable

Infinite loop
A loop that keeps executing and never stops

For loop
Iterates over a sequence of values

1. In Python, and a lot of other programming languages, a range of numbers will start with the value 0 by default

2. The list of numbers generated will be one less than the given value.

Use for loops when there's a sequence of elements that you want to iterate.

Recursion
The repeated application of the same procedure to a smaller problem

Recursion lets us tackle complex problems by reducing the problem to a simpler one.

In programming, recursion is a way of doing a repetitive task by having a function call itself.

String
Known as a "data type"

Variables
Names that we give to certain values in our programs

Assignment
The process of storing a value inside a variable

Expression
A combination of numbers, symbols, or other variables that produce a result when evaluated

Variable Naming Restrictions

1. Don’t use keywords or functions that Python reserves for its own

2. Don’t use spaces

3. Must start with a letter or an underscore (_)

4. Must be made up of only letters, numbers, and underscore (_)

i_am_a_variable is valid

i_am_a_variable2 is valid

1_is_a_number is invalid

apples_&_oranges is invalid

Implicit conversion
The interpreter automatically converts one data type into another

None
A special datatype in Python used to indicate that things are empty or that they returned nothing

Self-documenting code
Written in a way that’s readable and doesn’t conceal its intent

Boolean

One of two possible states: either true or false

Logical operators

To evaluate as true, the and operator would need both expressions to be true at the same time.

If we use the or operator, instead, the expression will be true if either of the expressions are true, and false only when both expressions are false.

The not operator inverts the value of the expression that's in front of it.

Branching

The ability of a program to alter its execution sequence

The body of the if block will only execute when the condition evaluates to true; otherwise it's skipped.

When a return statement is executed, the function exits, so that the code that follows doesn't get executed.

Object-oriented programming

A way of thinking about and implementing our code

A flexible, powerful paradigm where classes represent and define concepts, while objects are instance of classes

The attributes are the characteristics associated to a type.

The methods are the functions associated to a type.

Dot notation

Lets you access any of the abilities the object might have (called methods) or information it might store (called attributes)

Methods

Functions that operate on the attributes of a specific instance of a class

Variables that have different values for different instances of the same class are called instance Variables.

Docstring

A brief text that explains what something does

Always initialize mutable attributes in the constructor.

Modules

Used to organize functions, classes, and other data together in a structured way

Slice

The portion of a string that can contain more than one character; also sometimes called a substring

Method

A function associated with a specific class

Strings

Sequences of characters, and are immutable

Lists

Sequences of elements of any type, and are mutable

Tuples

Sequences of elements of any type, that are immutable

The position of the elements inside the tuple have meaning.

List comprehensions

Let us create new lists based on sequences or ranges

The data inside dictionaries take the form of pairs of keys and values.

You want to use dictionaries when you plan on searching for a specific element.

Set

Used when you want to store a bunch of elements and be certain that they’re only present once