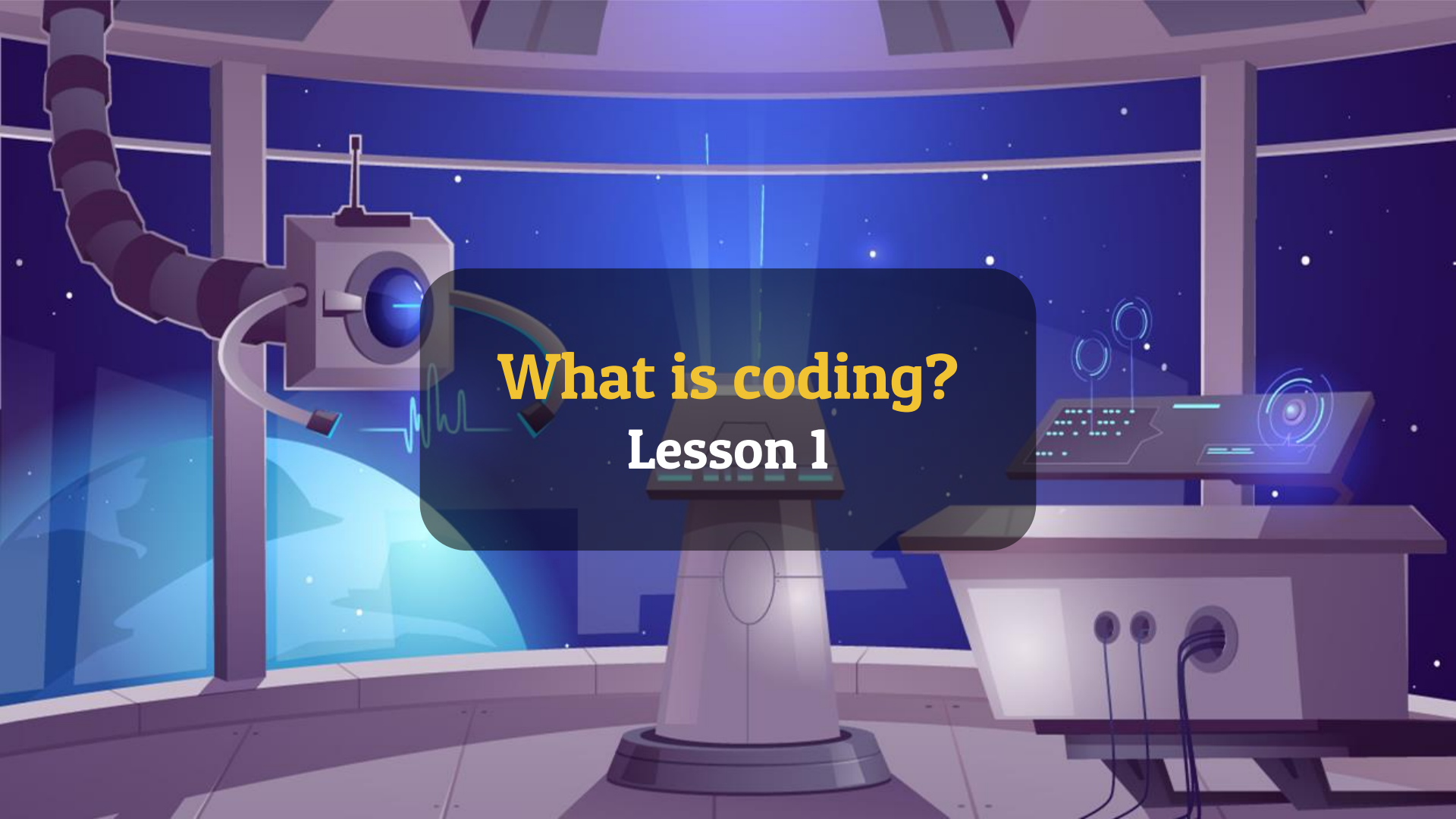
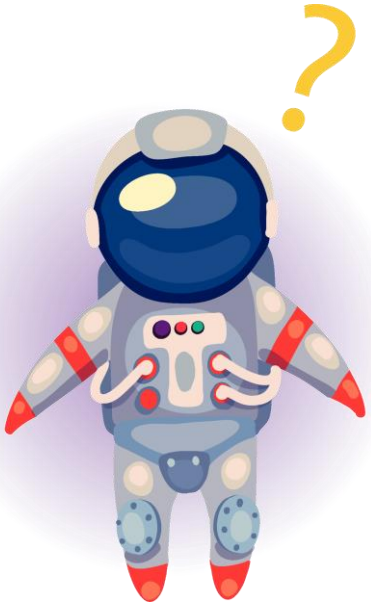

What is coding?
Lesson 1

What Is Coding?

Let's discuss programming

- What are computer programs?
- What do programmers do?

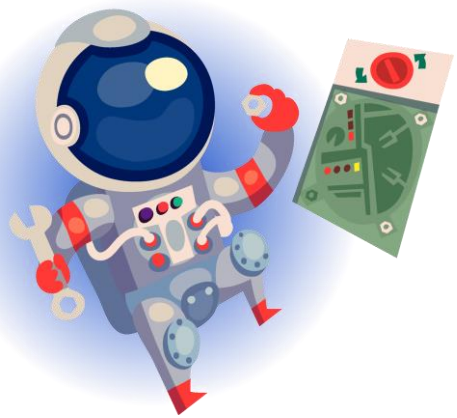


PYTHON CODE EXAMPLE

```
def display_game_winner(player_wins, computer_wins):
    if player_wins > computer_wins:
        print("Player wins the series!")
        print(player_victory_ascii)
    elif computer_wins > player_wins:
        print("Computer wins the series!")
        print(computer_victory_ascii)
    Else:
        print("The series tied!")
```

Coding Is

Teaching a computer how to perform a task



- → Computers are not smart machines.
- → They will do whatever you tell them to do

Why Python?

Introducing Python!

- In this course, we program in Python.
- Python is great for beginners, because it has simple syntax and helpful libraries for common tasks.

What Is Python Used For?

Introducing Python!

- Python is a general-purpose programming language.
- Python is used in data science, AI, machine learning, and web development.

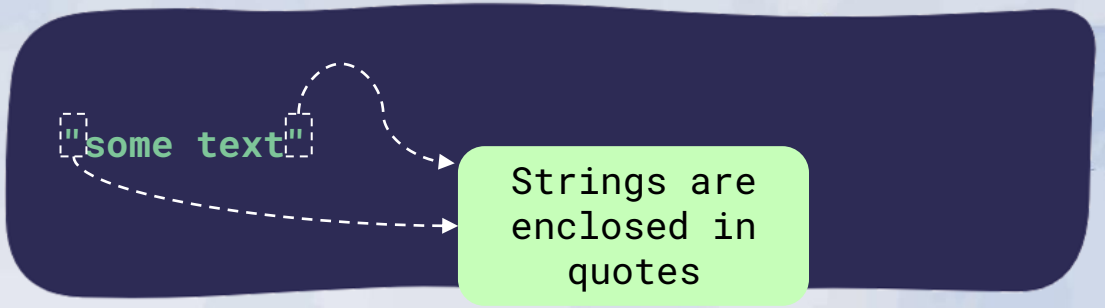

Data Types &
Variables
Lesson 2

Strings and Integers

Fundamental data types

→ **Today, we'll learn two data types: STRINGS and INTEGERS.**

SYNTAX SLIDE



Strings

Strings are surrounded by double or single quotes.

SYNTAX SLIDE

```
"This is a string"
"1" # This is a string as well!
""  # This is an empty string.
```

Strings (continued)

A string can be a number. A string can also be empty.
Anything surrounded by quotes is a string!

SYNTAX SLIDE

```
3
42
128134901487
```

Integers

Integers are whole numbers. They are not surrounded by quotes.

Variables

Storing data with

- To store data, like a string or an integer, you can use a variable.
- Variables assign names to values.
- Using a name instead of a value makes code read like English.

Rules for Naming Variables

Cannot start with a number

Cannot contain spaces.

Cannot contain special characters except _ (underscore)

Two variables cannot have same name.

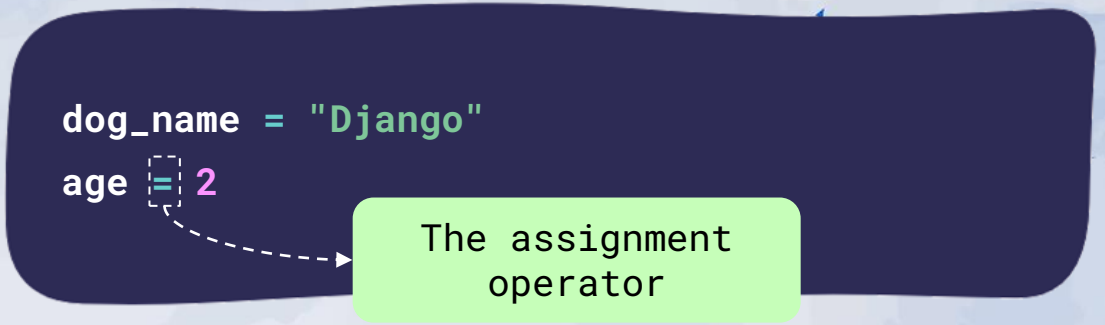
SYNTAX SLIDE

```
"Django"
2
```

Introducing Variables

What do these two values represent? “Django” is a name, but what is 2? Variables will give these values meaning.

SYNTAX SLIDE

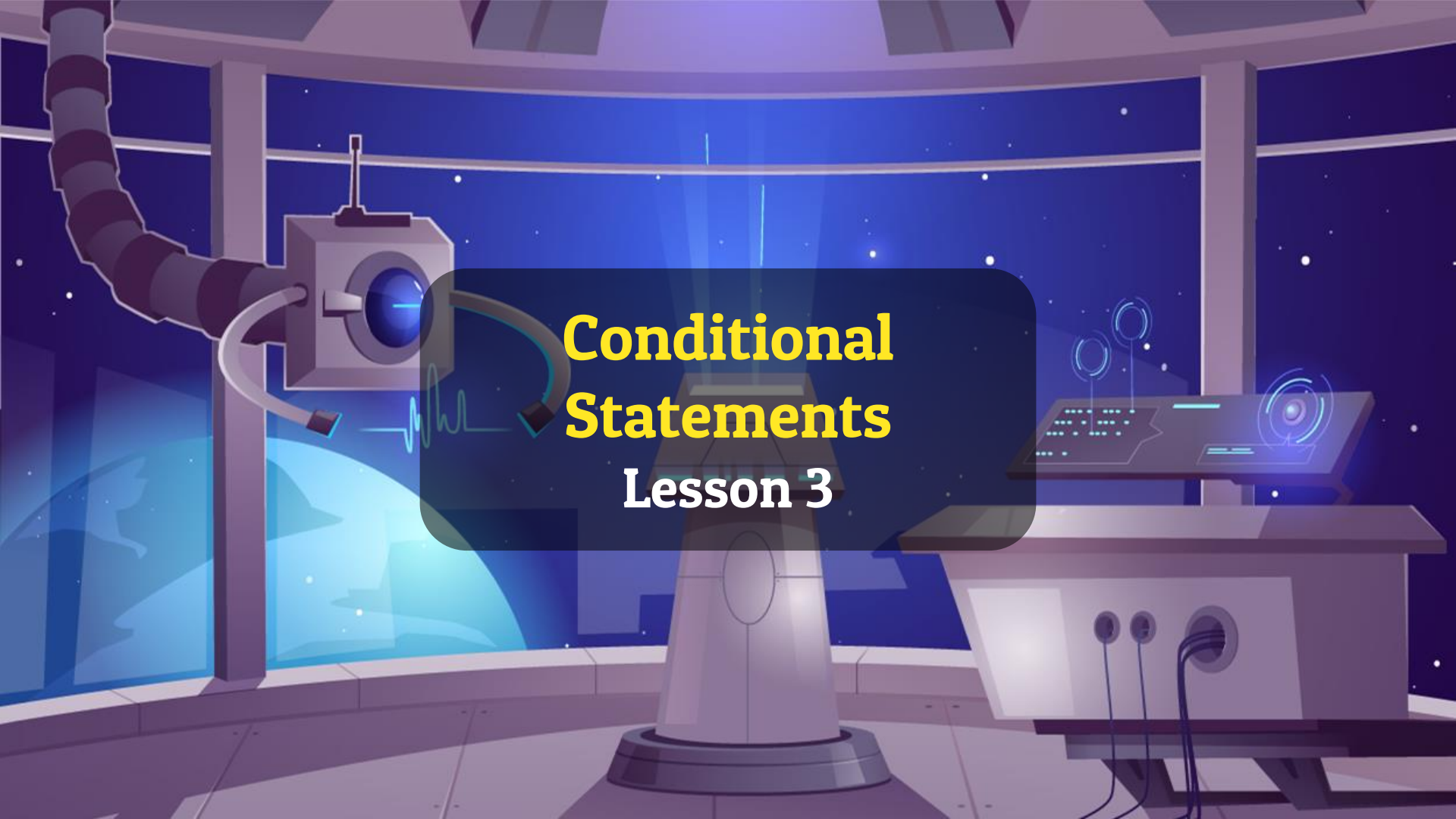


Introducing Variables (continued)

This is how you create a variable. Now we know what the values represent!
The assignment operator (=) assigns a value to a variable. You can also think of it as assigning a name to a value.

DATA VS VARIABLES

```
car_model = "BMW"

year = 2025

play_game(“Roblox”)

favorite_movie = "Minions"

33

timer(5)
```


Conditional
Statements
Lesson 3

If it's sunny, you don't wear a jacket.

In real world flow of event changes depending upon other things.

The switch is up, light bulb turns on.

If below 1/4th of a tank, fill up on gas.

If it's Saturday or Sunday, wake up late.

```
var_name = True
if var_name:
    # if var_name is true this part works
else:
    # if it's not, then this part works.
```

If - else condition with boolean variable

EXAMPLE

```
humidity = True

if humidity:
    weather = ‘cloudy’
else:
    weather = ‘sunny’
```


Not all conditions are yes/no type conditions.

```
if a > 10:
    If a is greater than 10
```

```
if a < b:
    If a is less than b
```

```
if a == 100:
    if a equals one hundred
```

Relational Operators

You can use both variables and numbers.

```
if a >= 10:
    If a is greater than or equal to 10
```

```
if a <= b:
    If a is less than or equal to b
```

```
if a != 100:
    if a is not equal to one hundred
```

Relational Operators

You can use both variables and numbers.

EXAMPLE

```
humidity = 52

if humidity > 50:
    weather = ‘cloudy’
else:
    weather = ‘sunny’
```


Functions
Lesson 4

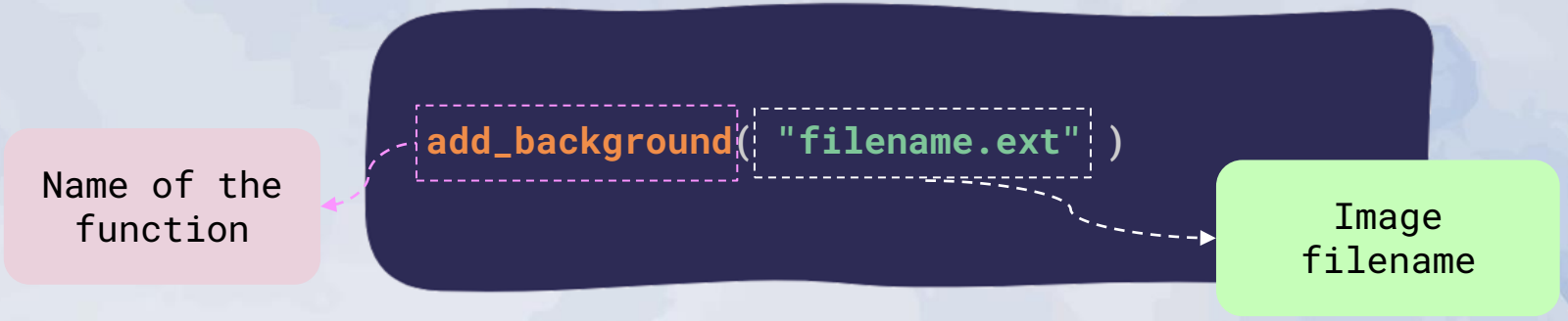
SYNTAX SLIDE

```
do_something()
```

What's a function?

A word with `()` at the end indicates a function.

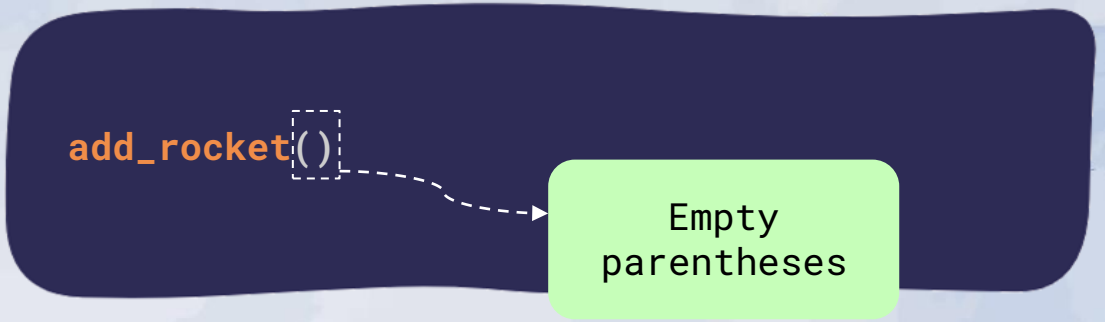
SYNTAX SLIDE



Adding a background

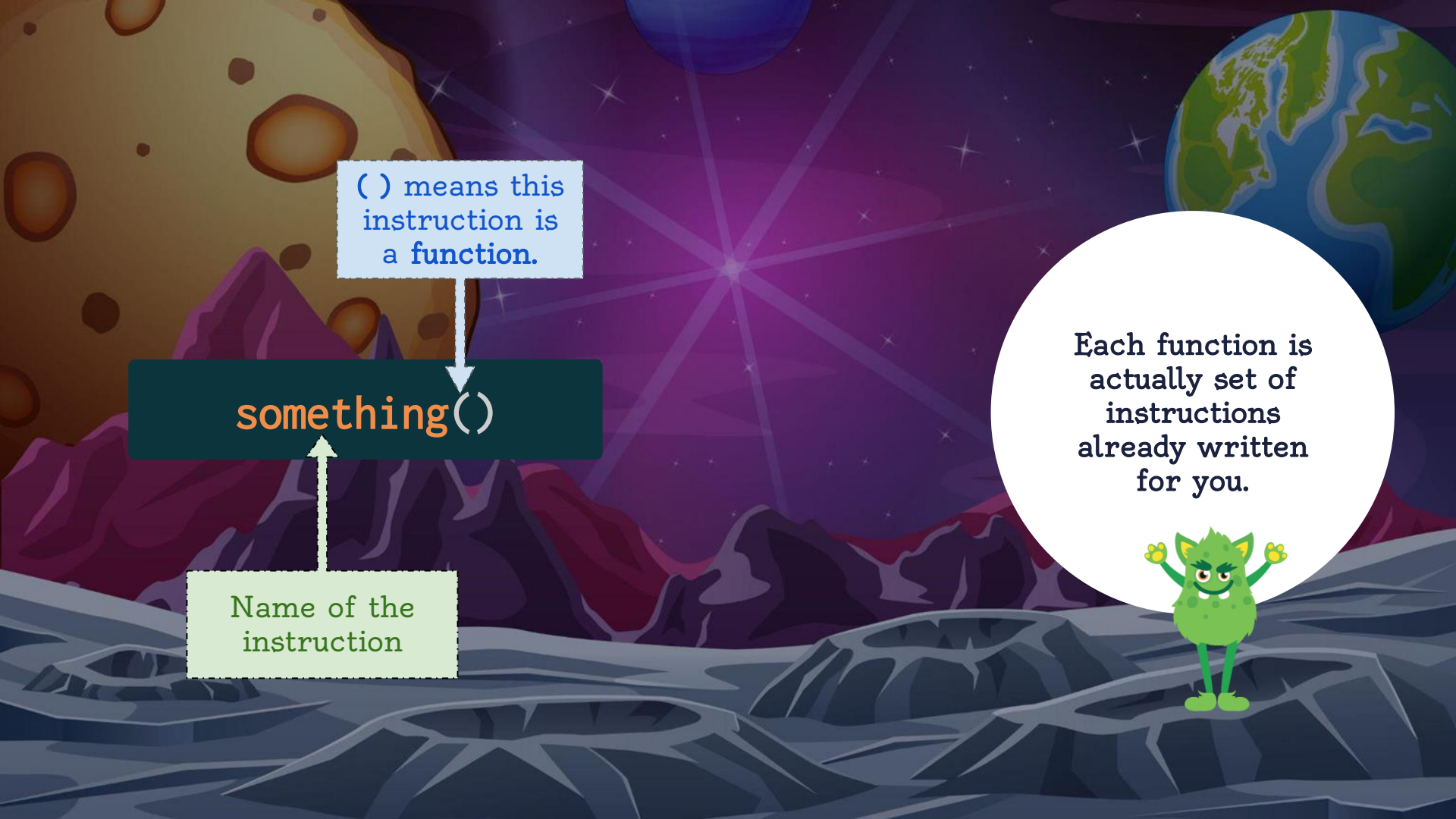
The **add_background()** function needs the filename of the image to do its job.

SYNTAX SLIDE



Adding a rocket

The **`add_rocket()`** function doesn't need any information to do its job, so the parentheses are empty.


( ) means this instruction is a function.
something()
Name of the instruction
Each function is actually set of instructions already written for you.

```
def function_name():
    # do something

function_name()
```

Define a function and then call the function.

Rules for Function Names

Start with a letter or an underscore: _.

They can have numbers.

They can be any length

They can't be the same as a Python keyword.

PROGRAMMING SYNTAX

```
enter_launch_code("RAINMAKER")
```

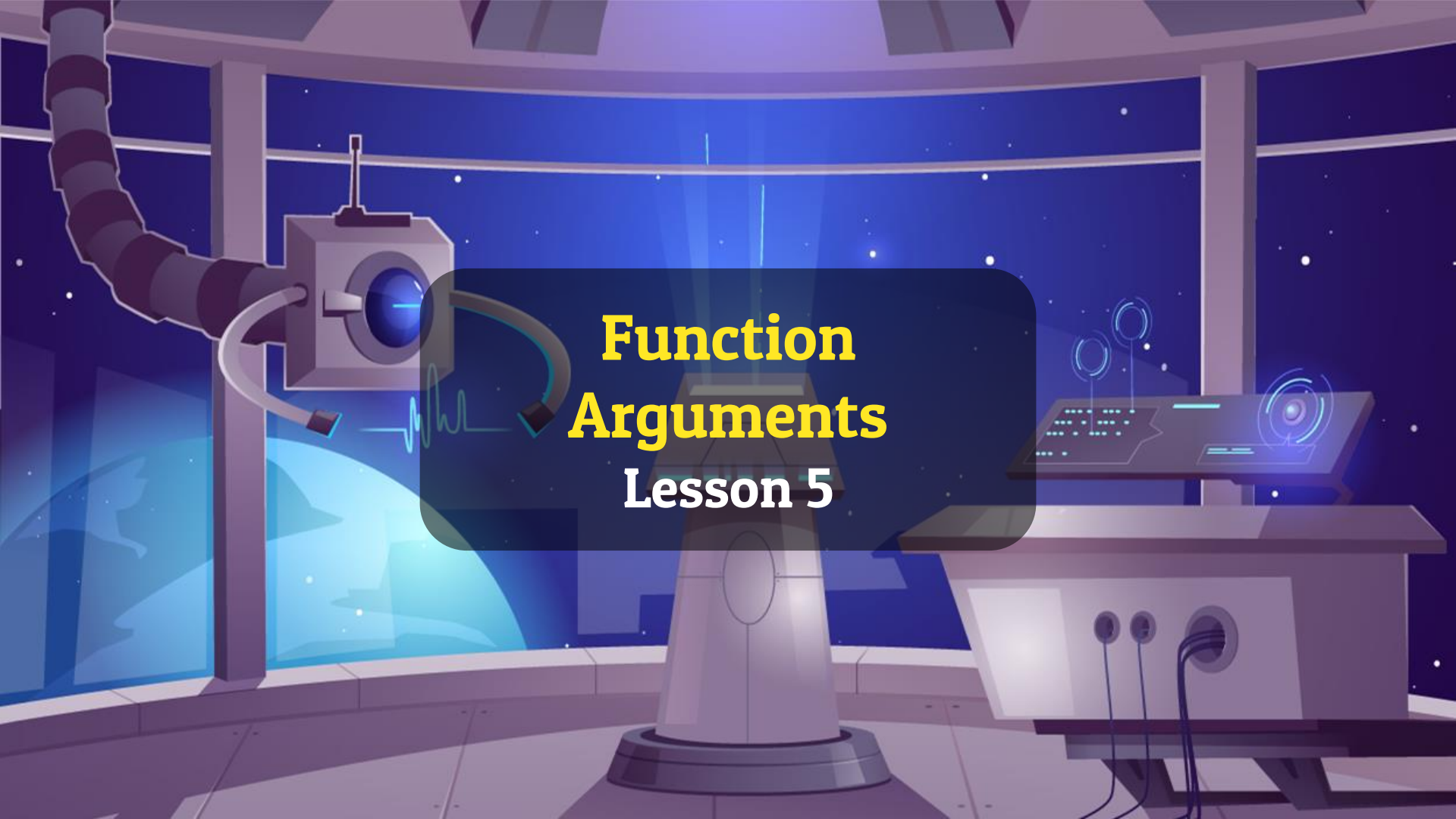
```
start_count_down(10)
```

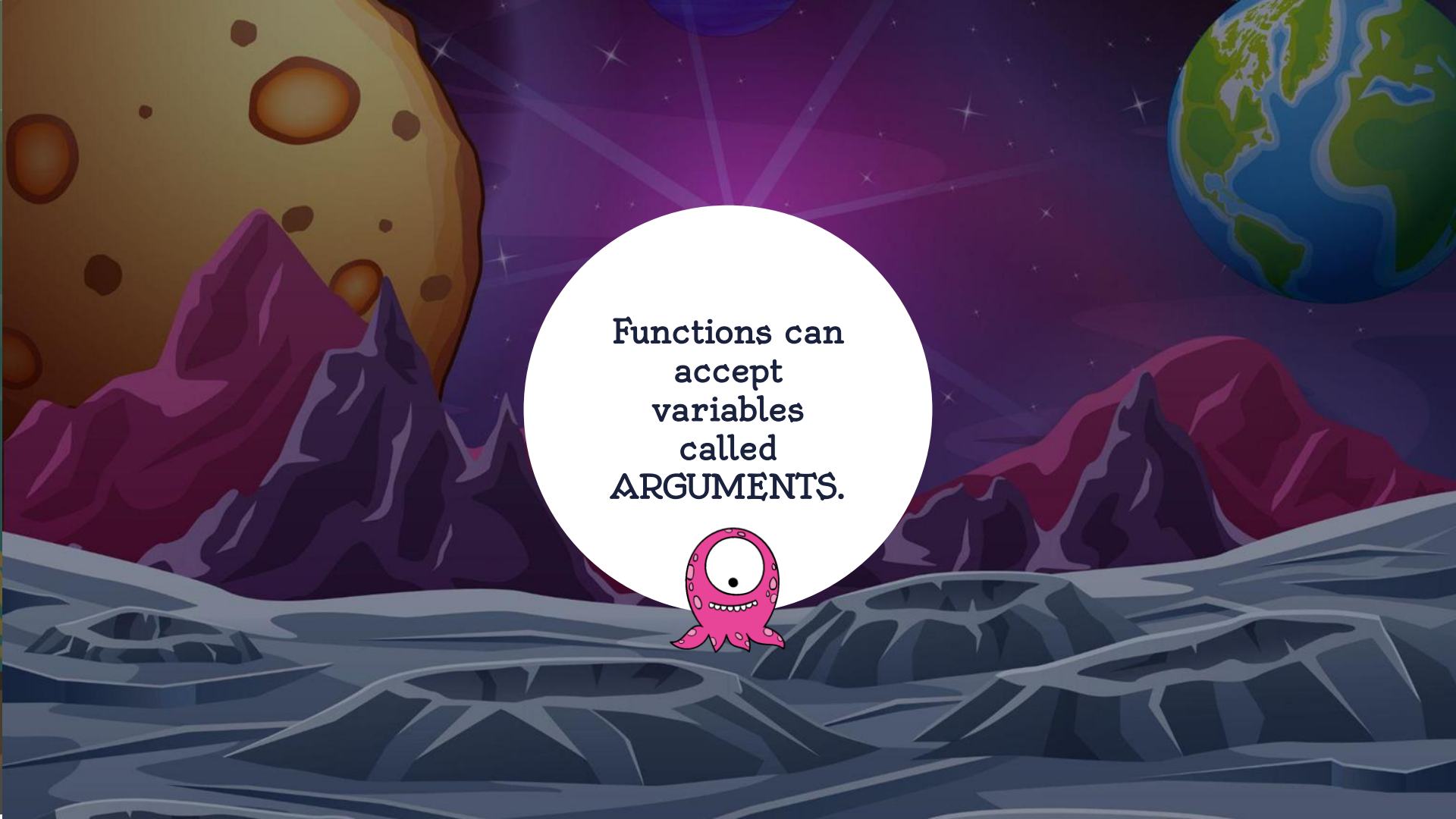
```
launch()
```

```
killIgnition()
```

FUNCTION MATCHING

1. split()	A: A function to see the largest integer in a list
1. print()	B: A function that allows taking user input
1. round()	C: A function that converts strings to lowercase
1. max()	D: A function that breaks up a string
1. lower()	E: A function that rounds up a number
1. join()	F: A function that joins string items in a list
1. input()	G: A function that prints a string


Function
Arguments
Lesson 5


Functions can accept variables called ARGUMENTS.

```
def function_name(var_1, var_2):
    # do something with var_1, var_2

function_name(value_1, value_2)
```

Creating a function that accepts variables.

```
def add_numbers(x, y):
    total = x + y
    return total

result = add_numbers(1, 2)
```

What is the result of addNumbers?

PROGRAMMING SYNTAX

```
enter_launch_code("RAINMAKER")
```

```
start_count_down(10)
```

```
launch()
```

```
kill_ignition()
```

DEFINE AND CALL A FUNCTION

1. A function that subtracts two numbers
1. A function that returns a value
1. A function with a variable
1. A function with a conditional statement
1. A function with two arguments

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