Python Functions

Code Girls 2021-22

Review of Functions

- Functions
  - A block of reusable code to perform a single action
- There are built in functions
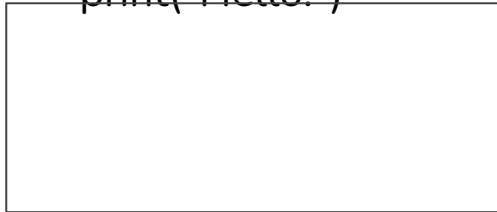- We can also create our own functions!

Define a Function

- Use the def keyword

- Example:

def hello():

print("Hello!")

Call a Function

- Use the function name followed by parenthesis
- Example:

```
hello()
```

Arguments

- We can pass information into functions as arguments
  - Any data type
- Arguments inside the parentheses after the function name
- You can add more than one argument
  - Separate with a comma

- Example:

```
def hello(firstName):

    print("Hello " + firstName)
```

  - hello("Iris") will print "Hello Iris"
  - hello("Alena") will print "Hello Alena"
  - hello("Ashley") will print "Hello Ashley"

Parameters vs. Arguments

- Parameters and arguments can both be used for information that are passed into a function

- For a function:

  - Parameter is the variable listed inside the parentheses

  - Argument is the value that is sent to the function when it is called

Number of Arguments and Arbitrary Arguments

- A function must be called with the correct number of arguments or else you will get an error

- If you do not know how many arguments will be passed into your function, add an asterisk * before the parameter name in the function definition

  - It will receive a tuple of arguments and your function will be able to access the items

```python
def my_function(*kids):
    print("The youngest child is " + kids[2])

my_function("Emil", "Tobias", "Linus")
```

Keyword Arguments

- You can also send arguments with the key = value syntax so that the order of the arguments does not matter

```python
def my_function(child3, child2, child1):
  print("The youngest child is " + child3)

my_function(child1 = "Emil", child2 = "Tobias", child3 = "Linus")
```

Arbitrary Keyword Arguments

- Similar to arbitrary arguments but for keyword arguments
- Add two asterisks ** before the parameter name in the function definition
- The function will receive a dictionary of arguments and can access items

```python
def my_function(**kid):
  print("His last name is " + kid["lname"])

my_function(fname = "Tobias", lname = "Refsnes")
```

Default Parameter Value

- You can give the function a default parameter value so that if we call the function without an argument, it uses the default value

```python
def my_function(country = "Norway"):
    print("I am from " + country)
```

```python
my_function("Sweden")
my_function("India")
my_function()
my_function("Brazil")
```

```
I am from Sweden
I am from India
I am from Norway
I am from Brazil
```

Return Values

- To let a function return a value, use the return statement

```python
def my_function(x):
  return 5 * x

print(my_function(3))
print(my_function(5))
print(my_function(9))
```

Practice

View our practice/examples for this week's topic in the link below.

Replit link: https://replit.com/@CodeGirls1/21-22-Python-Lecture-5?v=1

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