CSCI 141

Scott Wehrwein

Functions with return values
Goals

• Understand the behavior of the `return` statement.

• Know how to `return` a value from a function.
Writing Functions: Syntax

```
def name(parameters):
    statements
```

Two important questions:
1. How does the function use the arguments (inputs) passed to it?
2. How does the function return a value?
Returning values

New statement: the `return` statement

Syntax: `return expression`

Behavior:

1. `expression` is evaluated
2. the function stops executing further statements
3. the value of `expression` is returned
   i.e., the function call `evaluates` to the returned value
Function Syntax: Summary

```
def keyword function name(parameters):
  statements
```

- **def** keyword
- **function name**
- **parameters**
- **statements**

An indented code block that does any computation, executes any effects, and (optionally) returns a value.

- **inputs**
- **comma-separated list of parameters**: variable names that will get assigned to the arguments

- **effects; return value**
Return values: Demo

• Make add2 return the sum instead of printing it.

• Absolute value function with early return.
Returning values

New statement: the `return` statement

Syntax: `return expression` (can only appear inside a function definition)

Behavior:

1. `expression` is evaluated

2. the function stops executing further statements

3. the value of `expression` is returned
   i.e., the function call `evaluates` to the returned value
Returning values: Why?

- Using the result of one computation as the input to another: function composition.