

Week two

[Help Center](#)

Event handlers — Event-driven programming

- Event handlers (also called callbacks) are functions registered to an event such as a button click, keyboard press or mouse click.
- Event handlers react to the event by changing the state (collection of information) encoded in the program.
- Lecture examples - [Events](#)
- More examples - [None](#)

Local variables — Local vs. global variables

- Assignment to a variable inside a Python function creates a local variable.
- The scope of variable (portion of the program where the value of the variable can be accessed) is the body of function.
- Lecture examples - [Local vs Global](#)
- More examples - [Example](#)

Global variables — Local vs. global variables

- Variables defined outside functions are global variables. Their values may be accessed inside functions without declaration.
- To modify to a global variable inside a function, the variable must be declared inside the function using the keyword `global`.
- Global variables are a convenient (but dangerous) way for event handlers to share information in event-driven programming.
- Lecture examples - [Local vs Global](#)
- More examples - [Example](#)

SimpleGUI module — SimpleGUI

- Special module for CodeSkulptor that supports 2D interactive applications. The Docs button links to documentation for SimpleGUI.
- SimpleGUI allows creations of frames and timers as well as loading sounds and images.
- Frames include a control panel (with buttons and input fields), a status area (for monitoring keyboard and mouse events) and a canvas (with simple 2D drawing operations).
- Lecture examples - [SimpleGUI](#), [Template](#)
- More examples - [Layout](#), [Frame](#), [Errors](#)

Buttons — Buttons

- Buttons may be created (and their event handlers registered) via `add_button`.
- Buttons are positioned linearly (top/down) in the control panel in their order of creation.
- Lecture examples - [Calculator](#), [Buttons](#)
- More examples - [Structure](#), [Canvas Color](#), [Prize Boxes](#), [True-False Quiz](#)

Input fields — Input fields

- Input fields may be created (and their event handlers registered) via `add_input`.
- Input fields are positioned linearly (top/down) in the control panel in their order of creation.
- The event handlers for the input field take a single parameter that is the text string entered.
- Lecture examples - [Calculator](#), [Input Fields](#)
- More examples - [Structure](#), [Functions](#), [Factoring](#), [Silly Words](#)

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