

Event-based Programming

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Event-based programming

Trigger function calls based on **events** or **actions** that happen in your program.

- Used ubiquitously in games
- CS151 Final project is making a game using turtle!
- In class, we will code up a very simple version of [Pac-Man](#) together to illustrate concepts from event-based programming



Callbacks

Tell Python to call a function when something (an event) happens.

- Example: Keyboard control.
 - Arrow keys move the Pac-Man forward in the indicated direction (e.g. left arrow key moves Pac-Man left)
- Two step process:
 - If we press certain keys, have Python call Turtle movement functions.
 - We tell the screen to listen for events that could happen in future.

Timer events

When we want a function to be called some number of milliseconds in the future.

- Example: check for **collision events**: if the PacMan is close enough to a pellet, then have it disappear.
- To check for collisions *repeatedly on a schedule*, have the called function start another timer.

Let's make a Pac-Man game!