Chapter 23: Project 10: Do-it-Yourself Arcade Game

Welcome to the final project. Now that you've sampled several of Python's many capabilities, it's time to go out with a bang. In this chapter you learn how to use Pygame, an extension that enables you to write full-fledged, full-screen arcade games in Python. Although easy to use, Pygame is quite powerful and consists of several components that are thoroughly documented in the Pygame documentation (available on the Pygame Web site, http://pygame.org). This project introduces you to some of the main Pygame concepts, but because this chapter is only meant as a starting point, I've skipped several interesting features such as sound and video handling. I would recommend that you look into these yourself, once you've familiarized yourself with the basics.

What's the Problem?

So, how do you write a computer game? The basic design process is similar to the one you use when writing any other program (as described in Chapter 7), but before you can develop an object model, you need to design the game itself. What are its characters, its setting, its objectives?

I'll keep things reasonably simple here, so as not to clutter the presentation of the basic Pygame concepts. Feel free to create a much more elaborate game if you like. I'll base my game on the well-known Monty Python sketch "Self-Defense Against Fresh Fruit." In this sketch, a Sergeant Major (John Cleese) is instructing his soldiers in self-defense techniques against attackers wielding fresh fruit such as pomegranates, mangoes in syrup, greengages, and bananas. The defense techniques include using a gun, unleashing a tiger, and dropping a 16-ton weight on top of the attacker. In this game, I turn things around, the player controls a banana that desperately tries to survive a course in self-defense, avoiding a barrage of 16-ton weights dropping from above. I guess a fitting name for the game might be Squish.

Tip

If you'd like to try your hand at a game of your own as you follow this chapter, feel free to do so. If you just want to change the look and feel of the game, simply replace the graphics (a couple of GIF or PNG images) and some of the descriptive text.

Specific Goals

The specific goals of this project revolve around the game design. The game should behave as it was designed (the banana should be movable, and the 16-ton weight should drop from above). In addition, the code should be modular and easily extensible (as always). A useful requirement might be that game states (such as the game introduction, the various game levels, the "game over" state) should be part of the design, and that new states should be easy to add.