

Part 1

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Objectives

To introduce the ideas behind games programming using the Pygame library for Python.

Background Information

Background information is on the Powerpoint slides available at <http://coe.psu.ac.th/ad/teaching/LAB/Pygame/>. I will go through these slides during the lab.

Lab Instructions

1. Download `Code.zip` from this lab's website (see above), and extract the code.
2. If you need python, download it from <https://www.python.org/>.
3. When you install python be sure to tick the box "Add Python XX to PATH".
4. Start the Command Prompt, and type
 - `python --version`

You may need to set Windows' PATH environment variable, to get python to work at the command prompt. I will explain how to do this in the class.
5. You may need to install pygame using pip
 - `python -m pip list`
 - `python -m pip install pygame`
6. Test Pygame by running `pygameSimple.py` in the Code/ folder
 - `python pygameSimple.py`
7. Try out animation in the Code/Animation/ folder by running `animBall-1.py` and `beachBounce.py`.
8. Investigate classes and objects by running `car.py` in Classes/

Lab Questions

1. Modify `beachBounce.py` so that the ball **does not bounce** off the left and right walls. Instead when it moves off the right edge of the window, it should re-appear at the left edge of the window, moving in the same direction. In the same way, when the ball moves

off the left edge of the window, it should re-appear at the right edge of the window, moving in the same direction. Call your new program `beachMover.py`.

Note: the ball will still bounce off the top and bottom edges of the window.

2. Add `KEYDOWN` events processing to `beachMover.py`, so that when the 'x' key is pressed, the ball reverses its x-direction, and when the 'y' key is pressed, the ball reverses its y-direction.

Submission Details

A print-out of `beachMover.py` and two screenshots should be placed in the relevant lab box outside the CoE office by **Wednesday July 23rd, 4pm**.

The pages of the print-out should be stapled together at the top-left hand corner. The print-out should **not** include a cover page, or any plastic bindings or envelopes. Print the program two pages to a sheet using the FinePrint print driver (see <http://fineprint.com/fp/>). The program should be printed in a typewriter-style font, such as "Courier New" 10pt size. There must be **no handwriting** on the print-out.

The code **must include documentation/comments** explaining in words what changes you have made.

Stapled to the print-out should be **two screenshots** of your game running.

Marks

Your final mark for this Pygame Lab Part 1 will be based on `beachMover.py` (30 marks) and exam questions (70 marks).