[Session 4] Pygame Exercise

Note

You don't need to solve everything, because it is not mandatory and graded, just for practice! We will provide a solution after the real-time class. But, if you have some problem and ask us, then we will give you some help or hints. **Good luck!**

Exercise 1

This problem set is for implementation of movement.

(1.1) Basic movement

Make a **`Rect`** object and **move this via keyboard** (up/down/left/right).

- Make the motion smoothly as much as possible
- Your Rect must not go beyond the window.

(1.2) Jump

Make a **`Rect`** object and **move this via keyboard** (left/right/spacebar).

- Make the motion smoothly as much as possible
- Your Rect must not go beyond the window.
- There should be **"gravity"**. It should fall onto the bottom side of window, eventually.
- Note that, falling is accelerated over time (jump, too).

(1.3) Wall

Use the solution of (1.1), and add several **walls**.

- Like the edge of window, we cannot pass there.
- we can use collision handling, we covered in the pre-class lecture.
- For multiple walls, how can we deal with these efficiently? (class? or something others?)

(1.4) Stair

Use the solution of (1.2) and (1.3), and add several **stairs**.

- We can jump and step on there.
- Although we can be on the stair, we cannot pass there.

(1.EX) Bouncy Ball

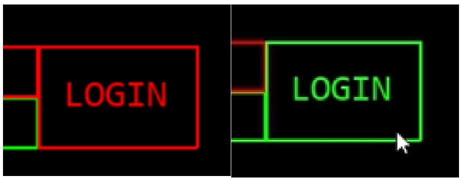
If you can implement all the problem. you can make a simple bouncy ball game. What is this? https://www.youtube.com/watch?v=_HkQQhmeOiA (Example game play video) But actually there are too many components. so, implement only this, basically. And then, if you can, try more!

- The ball bounces continuously.
- The ball can step on the block. If you fall into the bottom, then your ball will be died.
- The condition for "clear" can be vary. You can gather some star like the game, or you can get somewhere (destination).

Exercise 2

We need several kinds of user interface (UI). For example, you can click some button, or use trackbar(slider), or give some text input. For practice, we will make a simple button.

- Define a class, `Button`.
- It may have member variables like button color or image, some Rect for indicating region, and some text.
- The button should be highlighted when mouse-over.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