

"The Snake" game

Kirill Poligach

ČVUT-FIT

poligkir@fit.cvut.cz

January 3, 2021

1 Introduction

This game is the clone of "Snake" game with some modifications.

2 Functionality

Player uses arrow keys to control snake, spacebar to pause game and escape to close application. Game ends when snake collides on the tail or an obstacle. Application has CLI, where player can configure game.

Player can change snake's color, choose game mode:

```
"The Snake"
Configuration:
1. Play
2. Choose snake color
3. Gameplay options
4. How to play
5. Exit
```

```
Game modes:
1. Default
2. Without bonuses
3. Custom
4. Exit
```

default, without bonuses, custom.

Custom game allows to change amount of obstacles, snake's speed and to choose, which bonus will be in game.

```
Game Features:
1. Splitter True
2. Slower True
3. Speeder True
4. Number of walls (0 - 20) 5
5. Initial speed (0-6) 3
6. Exit
```

3 Used packages and functions

For this application were used pygame and "random" packages.

Game runs with pygame app.run() function.

Pyglet window_event was used to implement on_draw() function for graphics rendering and on_key_press() function to handle keyboard input.

For game's state updating was used update() function, which was scheduled

by pygame clock.schedule_interval() (update() function is called for each tick).

Game speed is also controlled by clock.schedule_interval(), by changing update interval.

Random_offset() function uses random.randint() function from "random" package to generate game object's offsets.

4 Result

This game has bonuses, which makes the game more interesting.

Speed bonus (red) increase game speed, slow bonus (blue) slow game down, splitter bonus (brown) reduce snake's tail by half.

Also was implemented thor screen movement (from one edge of window to opposite).

Bonuses spawn in random time intervals, obstacles also have random generation implemented with python random package. Snake's tail have different color shades, depends on snake's head color.



Figure 1: Snake's tail color

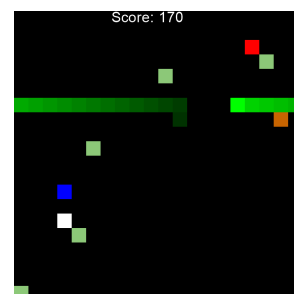


Figure 2: Snake's thor movement

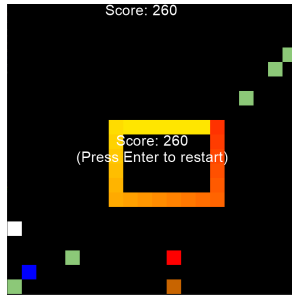


Figure 3: Game end

5 Conclusion

This project let me learn how to use pygame python package.

I've learnt how do simple games work, how does simple graphics rendering work and how to implement simple random game events.

References

- [1] fit.cvut coursepages. online. <https://courses.fit.cvut.cz/BI-PYT/>.
- [2] Pyglet documentation. online. <https://pyglet.readthedocs.io/en/latest/>.
- [3] Python random documentation. online. <https://docs.python.org/3/library/random.html>.