



Pygame

2020 인터넷응용 Team Project

박영준



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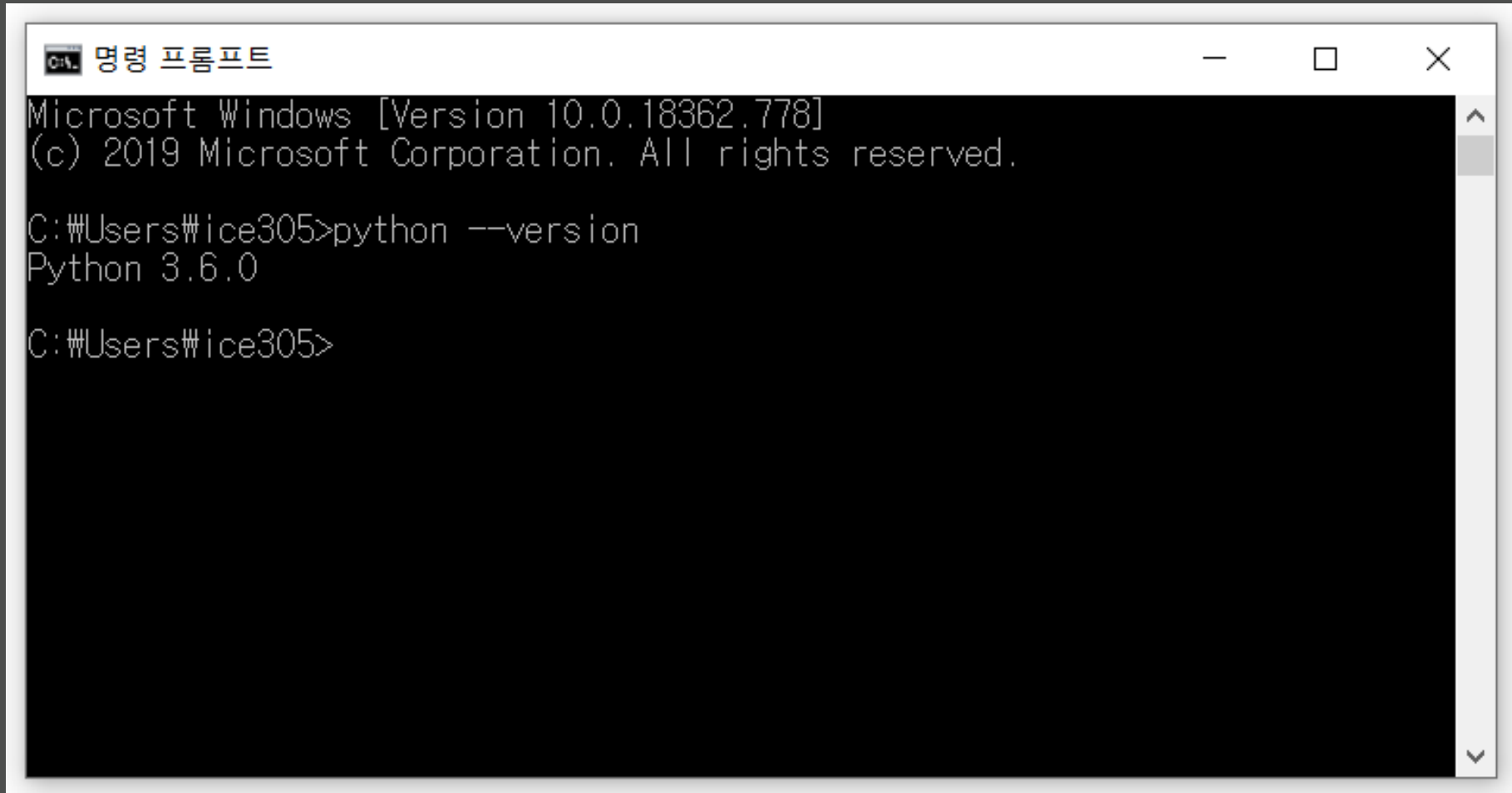
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01 Visual Studio Code + Pygame 환경 구축

Python 설치 확인



```
명령 프롬프트
Microsoft Windows [Version 10.0.18362.778]
(c) 2019 Microsoft Corporation. All rights reserved.

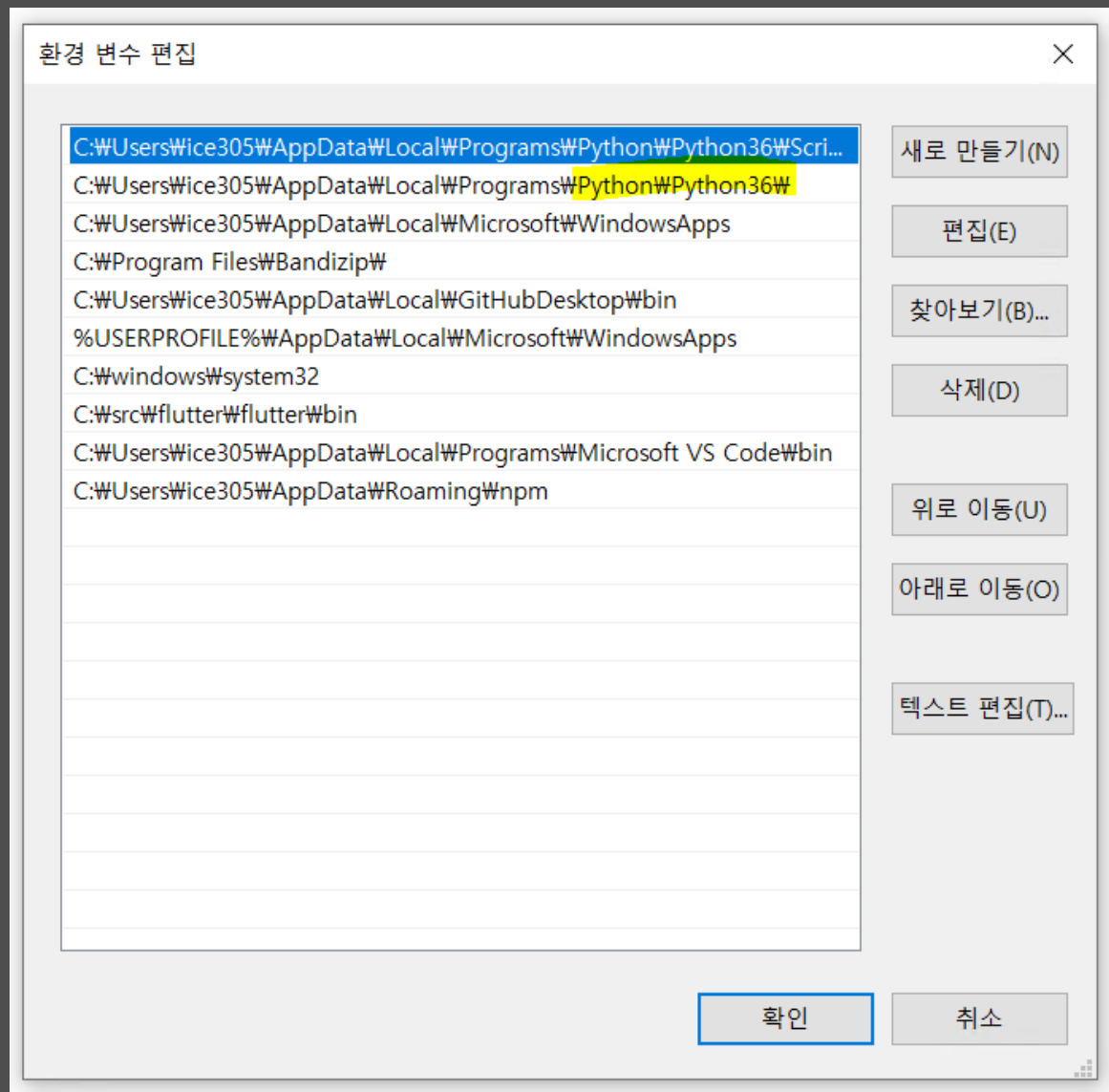
C:\Users\ice305>python --version
Python 3.6.0

C:\Users\ice305>
```

01 Visual Studio Code + Pygame 환경 구축

Python 명령이 실행되지 않는 경우

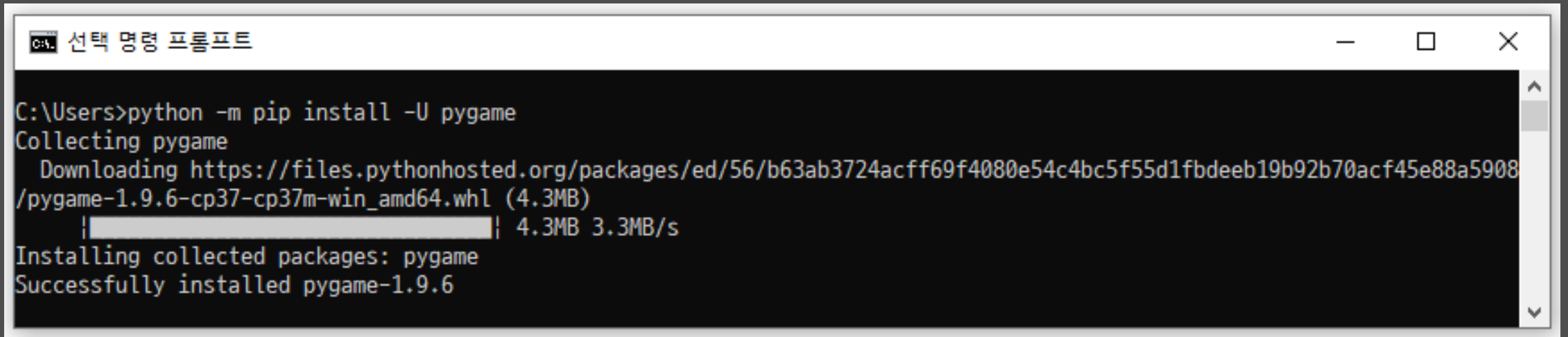
1. 시스템 속성
2. 고급
3. 환경 변수
4. 변수 Path 편집
5. python interpreter path 추가



01 Visual Studio Code + Pygame 환경 구축

Pygame 설치

PowerShell 또는 cmd 창에 명령어 실행



```
C:\Users>python -m pip install -U pygame
Collecting pygame
  Downloading https://files.pythonhosted.org/packages/ed/56/b63ab3724acff69f4080e54c4bc5f55d1fbdeeb19b92b70acf45e88a5908
  /pygame-1.9.6-cp37-cp37m-win_amd64.whl (4.3MB)
    |████████████████████| 4.3MB 3.3MB/s
Installing collected packages: pygame
Successfully installed pygame-1.9.6
```

사용자만 사용하게 설치한 경우(C:\Users\user 아래에 python이 있는 경우)

```
python -m pip install -U pygame --user
```

모든 사용자가 실행할 수 있게 python이 설치되었다면 --user 생략

01 Visual Studio Code + Pygame 환경 구축

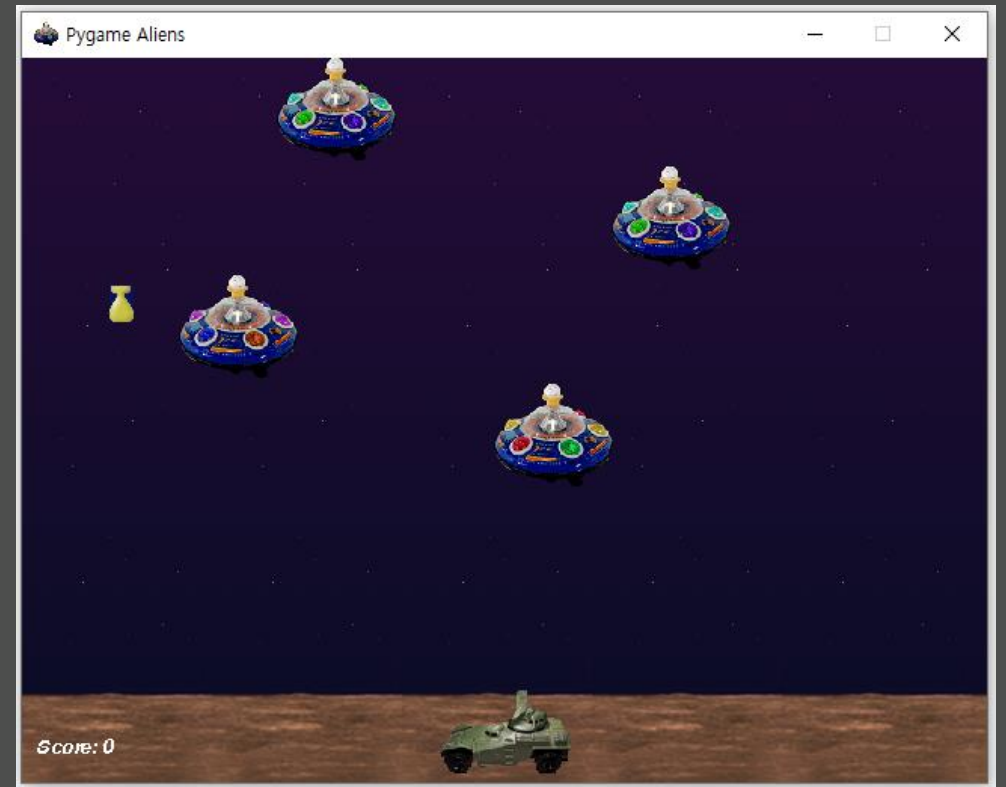
Pygame 샘플 게임 구동

Pygame이 잘 설치되었는지 확인해보자

```
명령 프롬프트
C:\Users>python -m pygame.examples.aliens
pygame 1.9.6
```

```
python -m pygame.examples.aliens
```

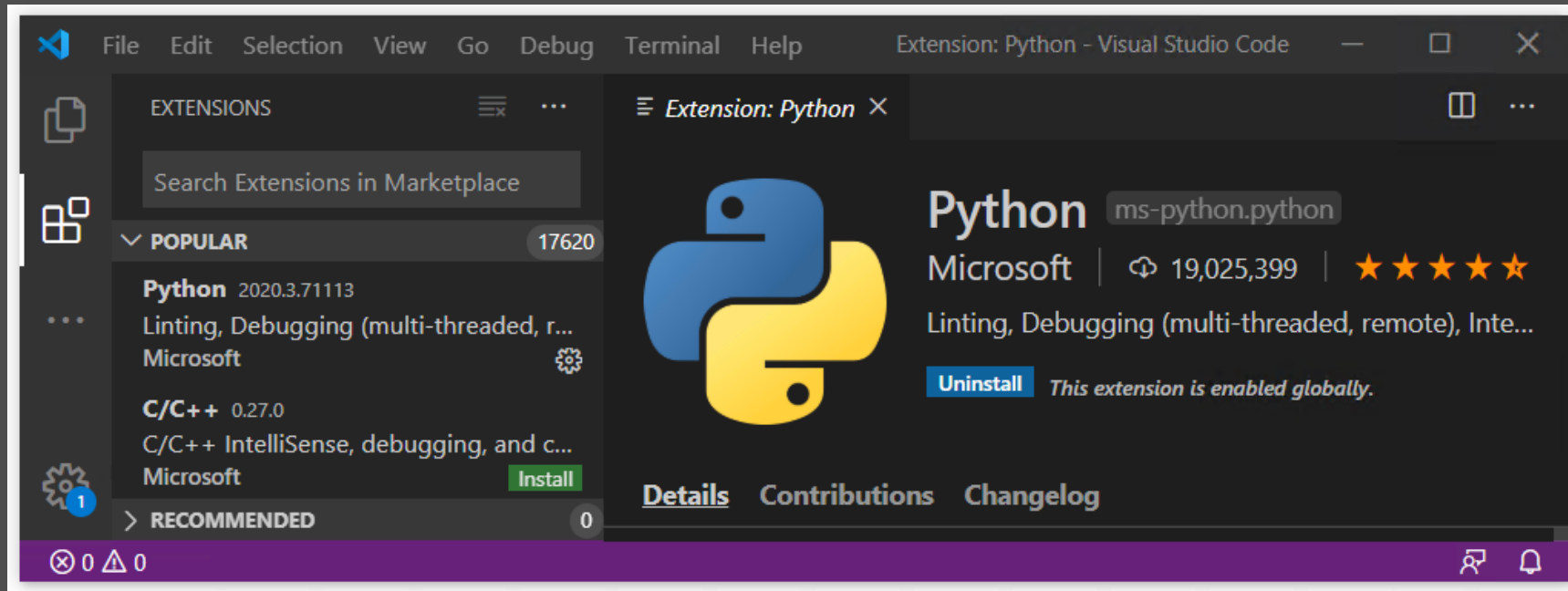
aliens라는 게임이 시작된다!



01 Visual Studio Code + Pygame 환경 구축

VS Code Extensions 확인

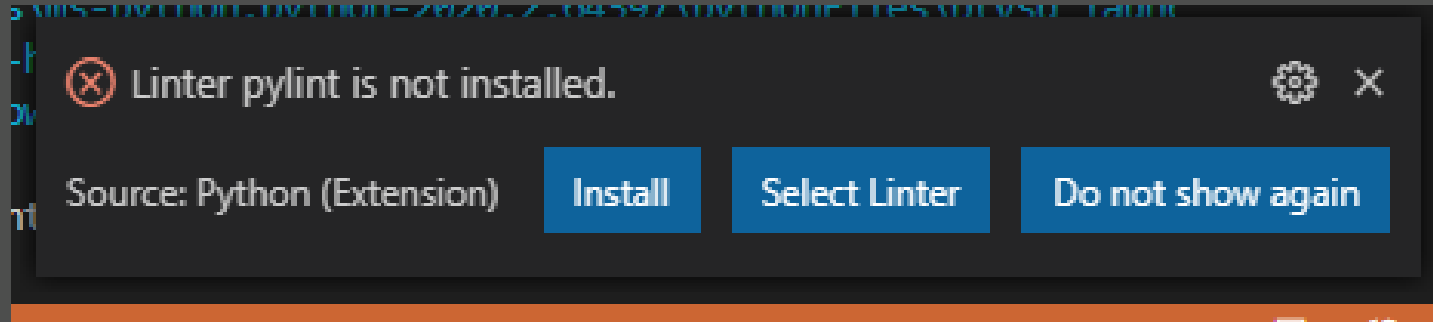
Python Extensions



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VS Code Extensions 확인

pylint 설치



python 관련 오류를 검사하고 적절한 파이썬 코딩 패턴을 추천해주는 프로그램!

```

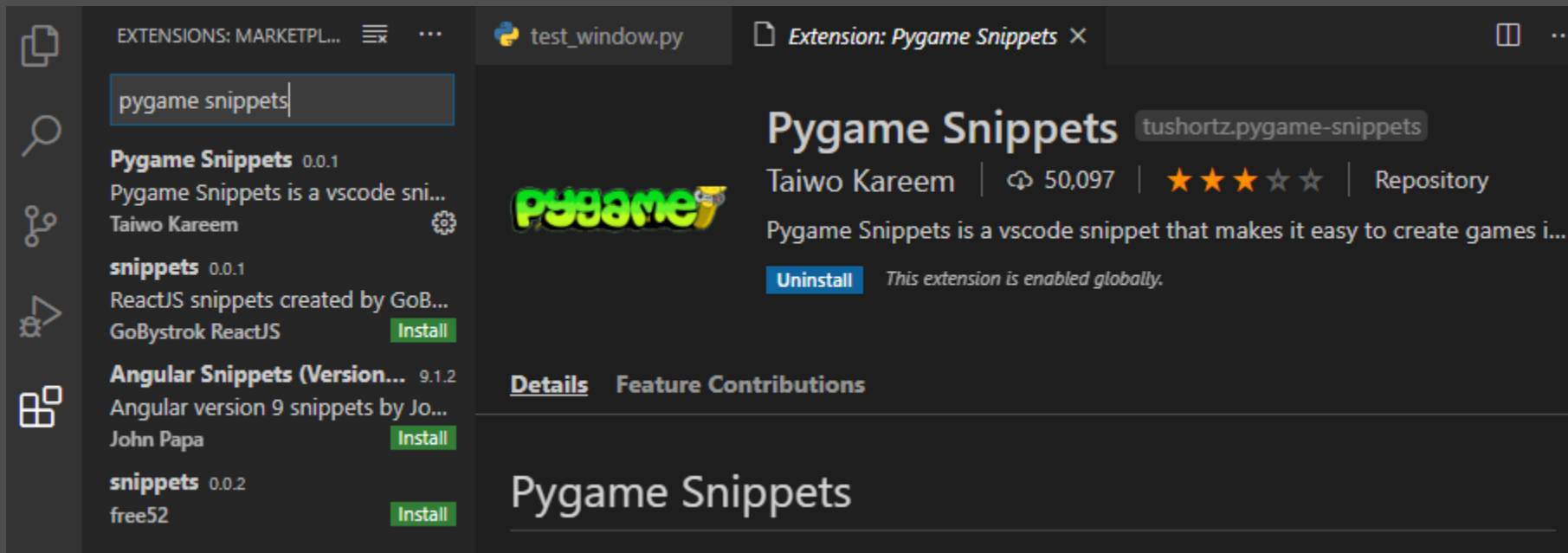
OUTPUT  TERMINAL  DEBUG CONSOLE  PROBLEMS  1: P
| 42 kB 226 kB/s
Collecting typed-ast<1.5,>=1.4.0; implementation_name == "cpython" and python_version < "3.8"
  Using cached typed_ast-1.4.1-cp36-cp36m-win_amd64.whl (155 kB)
Collecting six~=1.12
  Using cached six-1.14.0-py2.py3-none-any.whl (10 kB)
Collecting lazy-object-proxy==1.4.*
  Using cached lazy_object_proxy-1.4.3-cp36-cp36m-win_amd64.whl (20 kB)
Processing c:\users\ice305\appdata\local\pip\cache\wheels\d7\de\2e\efa132238792efb6459a96e85916ef8597fcb3d2ae51590
_amd64.whl
Installing collected packages: mccabe, typed-ast, six, lazy-object-proxy, wrapt, astroid, colorama, isort, pylint
Successfully installed astroid-2.3.3 colorama-0.4.3 isort-4.3.21 lazy-object-proxy-1.4.3 mccabe-0.6.1 pylint-2.4.4
pt-1.11.2
PS C:\workspace\pygame>

```


01 Visual Studio Code + Pygame 환경 구축

VS Code Extensions 확인

Pygame Snippets

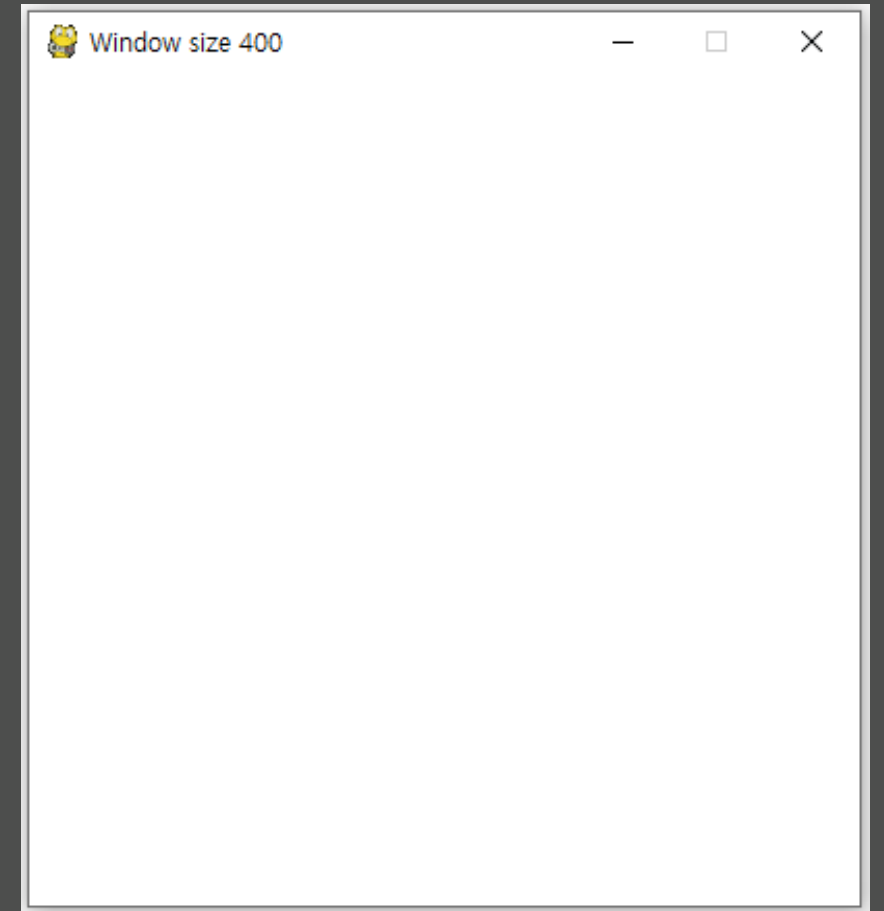


VS Code에서 Pygame을 쉽게 개발할 수 있도록 도와준다!

01 Visual Studio Code + Pygame 환경 구축

Test

```
test_window.py ×
test_window.py > main
1  import sys
2  import pygame
3  from pygame.locals import QUIT
4
5  pygame.init()
6  SURFACE = pygame.display.set_mode((400,400))
7  pygame.display.set_caption("Window size 400")
8
9  def main():
10     while True:
11         SURFACE.fill((255,255,255))
12
13         for event in pygame.event.get():
14             if event.type == QUIT:
15                 pygame.quit()
16                 sys.exit()
17         pygame.display.update()
18
19 if __name__ == '__main__':
20     main()
21
```



02 Pygame 설명

Python으로 작성 가능한 게임을 만드는 라이브러리

오픈 소스 + Python을 실행 시킬 수 있는 플랫폼이라면 어디서든 실행 가능!



공식 문서

<https://www.pygame.org/docs/>

02 Pygame 설명

Pygame 기본 구조

1. pygame 선언 – **import**
2. pygame 초기화 – **pygame.init()**
3. 사용할 전역 변수 선언
 - size : (x, y 크기)
 - screen : `pygame.display.set_mode(size)`
 - clock : `pygame.time.Clock()`
4. pygame 메인 루프 – while loop
 - pygame Event 설정
 - pygame 화면 설정
 - 사용자 행위

02 Pygame 설명

Pygame 선언 – import

```
1 # Import a library of functions called 'pygame'
2 import pygame
3
4 # Import a library of functions called 'pygame' as pg
5 import pygame as pg
```

Pygame 초기화 – pygame.init()

```
4 # Initialize the game engine
5 pygame.init()
```

02 Pygame 설명

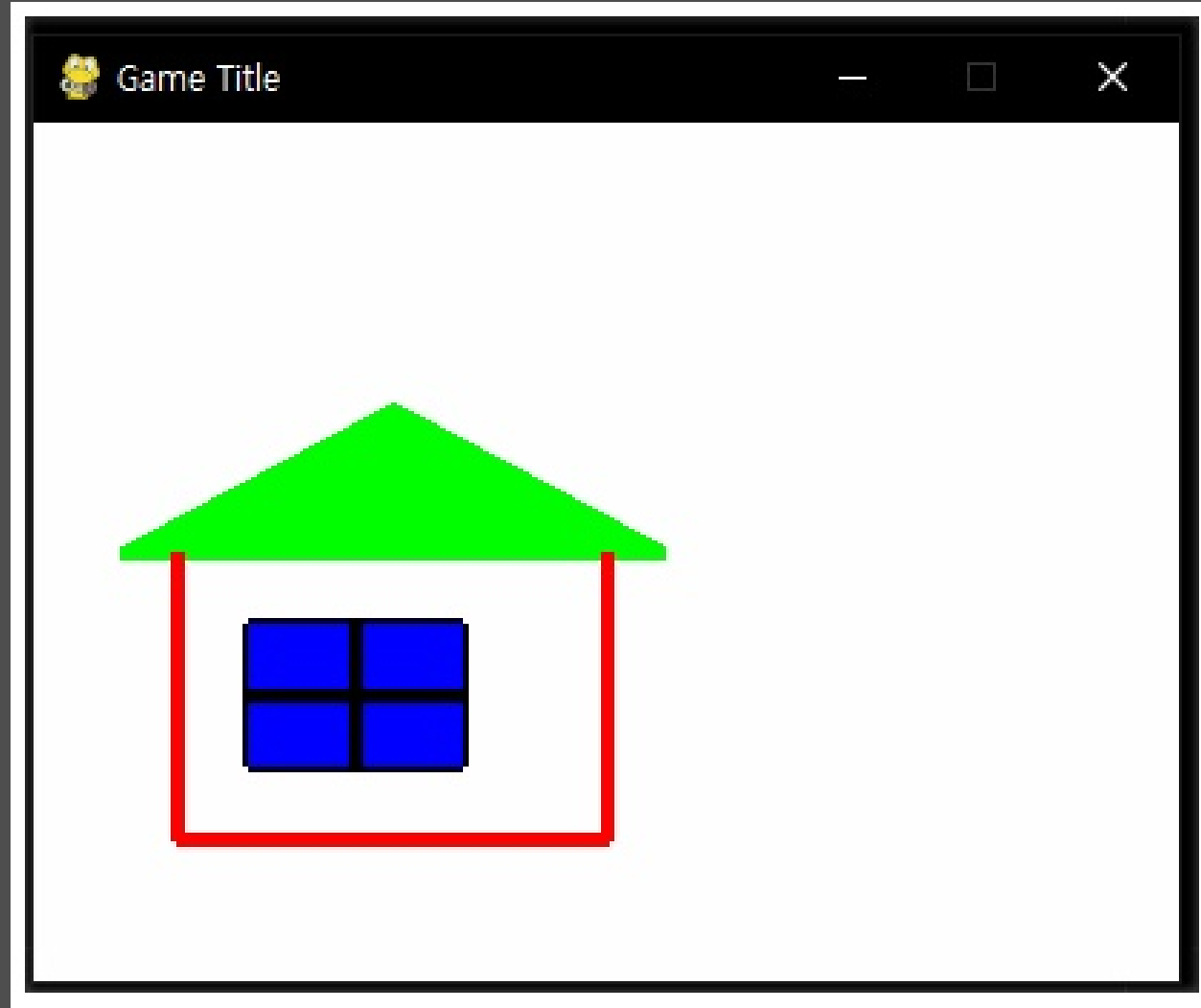
사용할 전역 변수 선언

```
7  # Define the colors we will use in RGB format
8  BLACK = ( 0, 0, 0)
9  WHITE = (255, 255, 255)
10 BLUE  = ( 0, 0, 255)
11 GREEN = ( 0, 255, 0)
12 RED   = (255, 0, 0)
13
14 # Set the height and width of the screen
15 size  = [400, 300]
16 screen = pygame.display.set_mode(size)
17
18 pygame.display.set_caption("Game Title")
19
20 #Loop until the user clicks the close button.
21 done = False
22 clock = pygame.time.Clock()
```

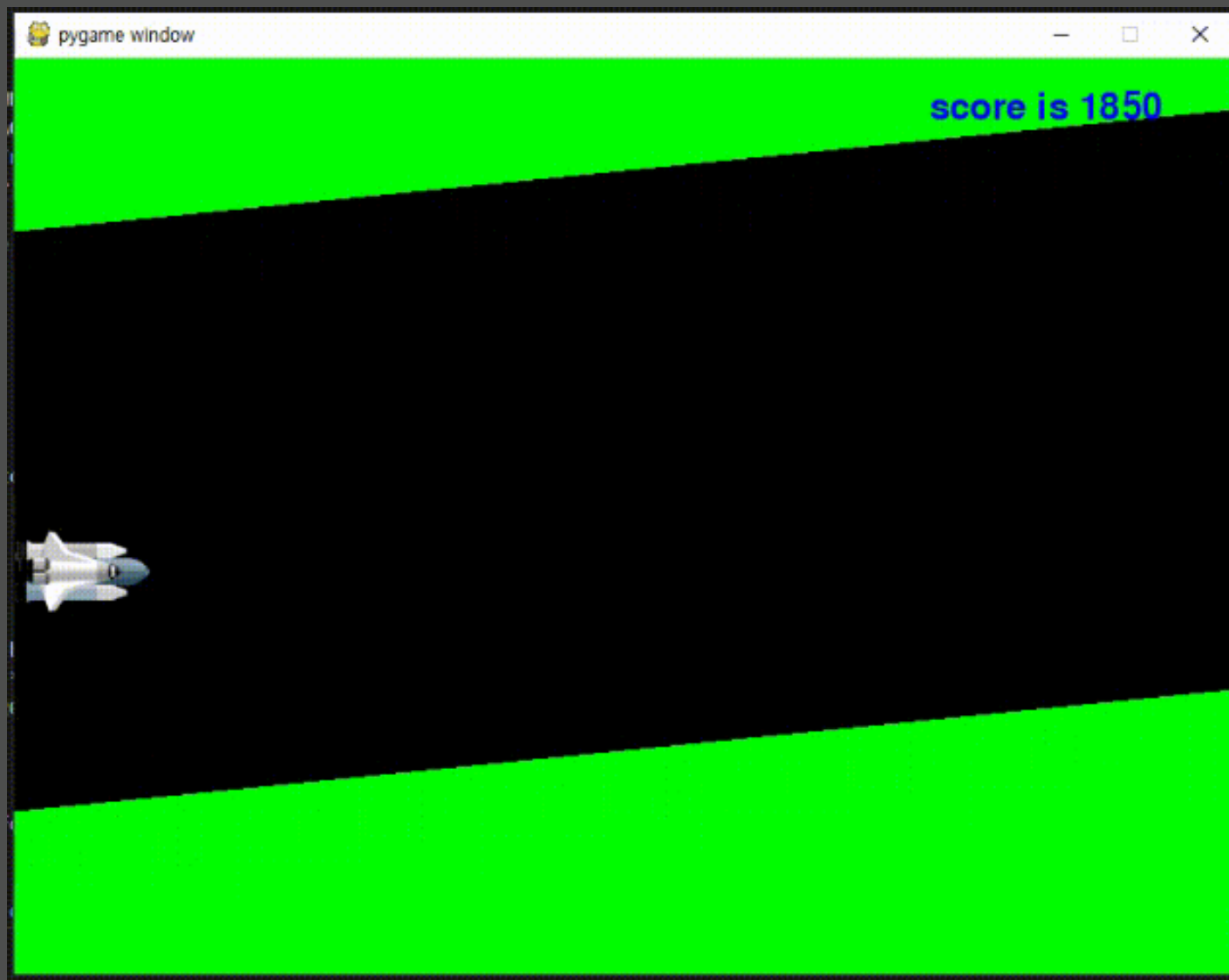
02 Pygame 설명 – main loop

```
24 while not done:
25
26     # This limits the while loop to a max of 10 times per second.
27     # Leave this out and we will use all CPU we can.
28     clock.tick(10)
29
30     # Main Event Loop
31     for event in pygame.event.get(): # User did something
32         if event.type == pygame.QUIT: # If user clicked close
33             done=True # Flag that we are done so we exit this loop
34
35     # All drawing code happens after the for loop and but
36     # inside the main while done==False loop.
37
38     # Clear the screen and set the screen background
39     screen.fill(WHITE)
40
41     ...
42     Your Work.....
43     ...
44     pygame.draw.polygon(screen, GREEN, [[30, 150], [125, 100], [220, 150]], 5)
45     pygame.draw.polygon(screen, GREEN, [[30, 150], [125, 100], [220, 150]], 0)
46     pygame.draw.lines(screen, RED, False, [[50, 150], [50, 250], [200, 250], [200, 150]], 5)
47     pygame.draw.rect(screen, BLACK, [75, 175, 75, 50], 5)
48     pygame.draw.rect(screen, BLUE, [75, 175, 75, 50], 0)
49     pygame.draw.line(screen, BLACK, [112, 175], [112, 225], 5)
50     pygame.draw.line(screen, BLACK, [75, 200], [150, 200], 5)
51
52     # Go ahead and update the screen with what we've drawn.
53     # This MUST happen after all the other drawing commands.
54     pygame.display.flip()
```

02 Pygame draw 함수 출력 예시



03 Pygame 시연



03 Pygame 시연



03 Pygame 시연





질의응답

Question & Answer



감사합니다.

THANK YOU.

SLUG