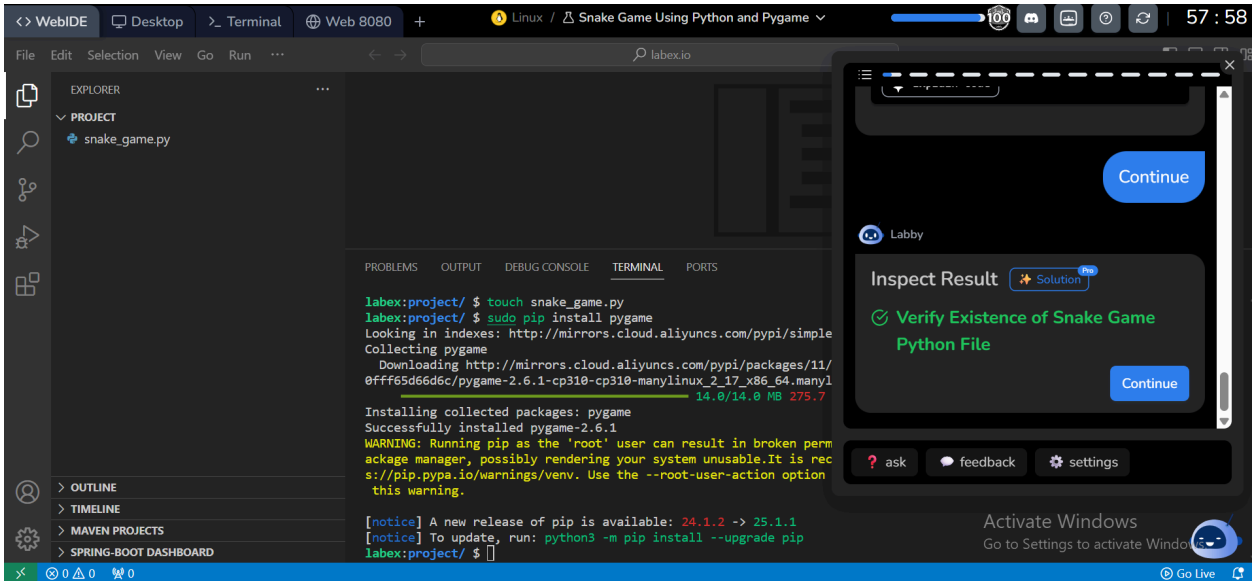
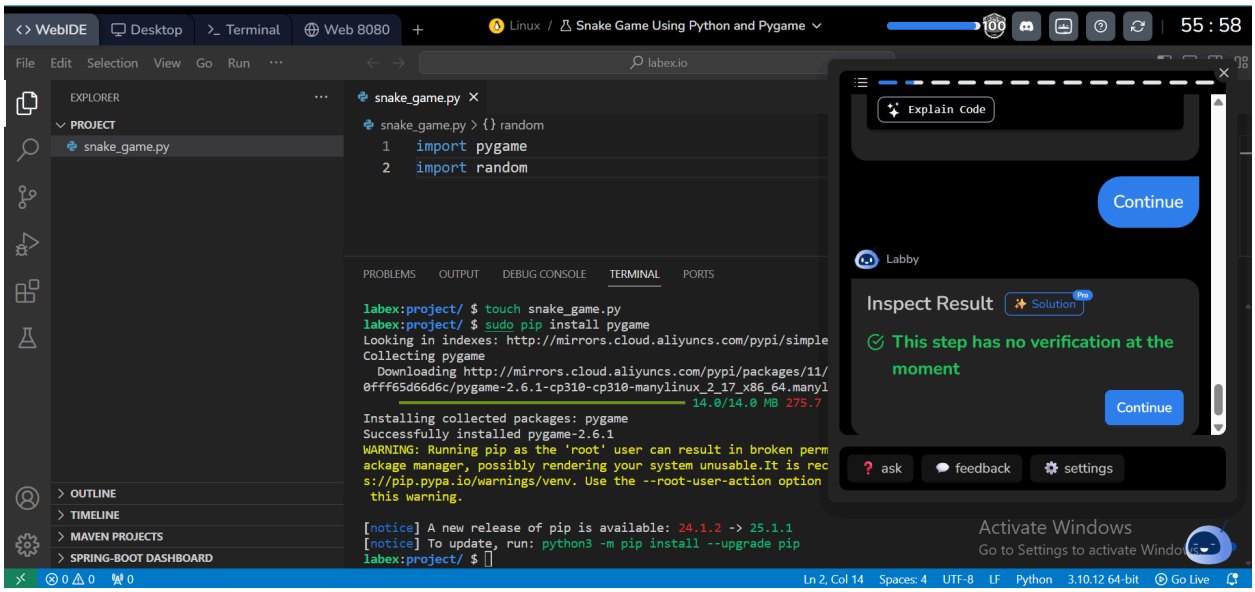
Snake Game Using Python and Pygame

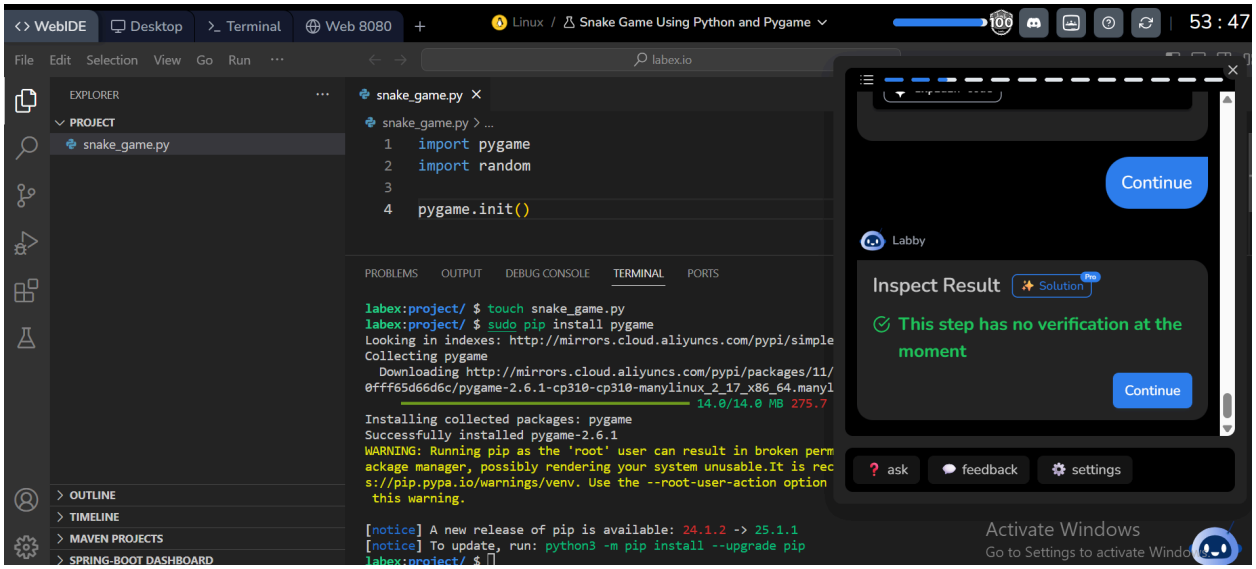
1. Bash
    a. cd ~/project
    b. touch snake_game.py
    c. sudo pip install pygame



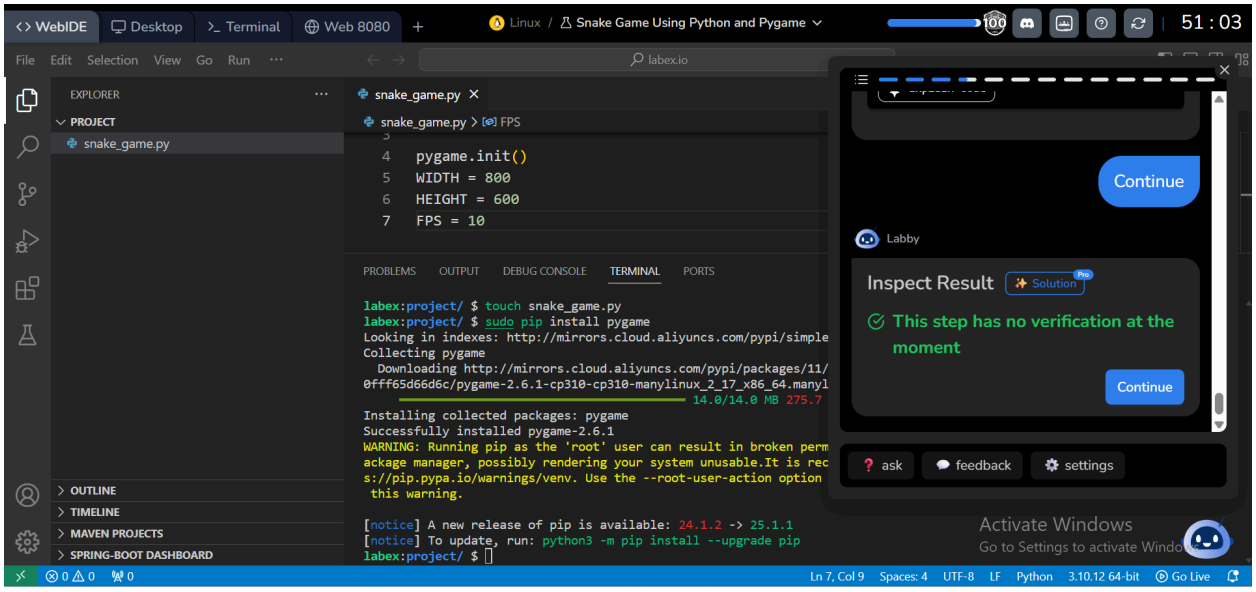
2. Import necessary modules
    a. import pygame
    b. import random



3. Initialize Pygame
    a. pygame.init()

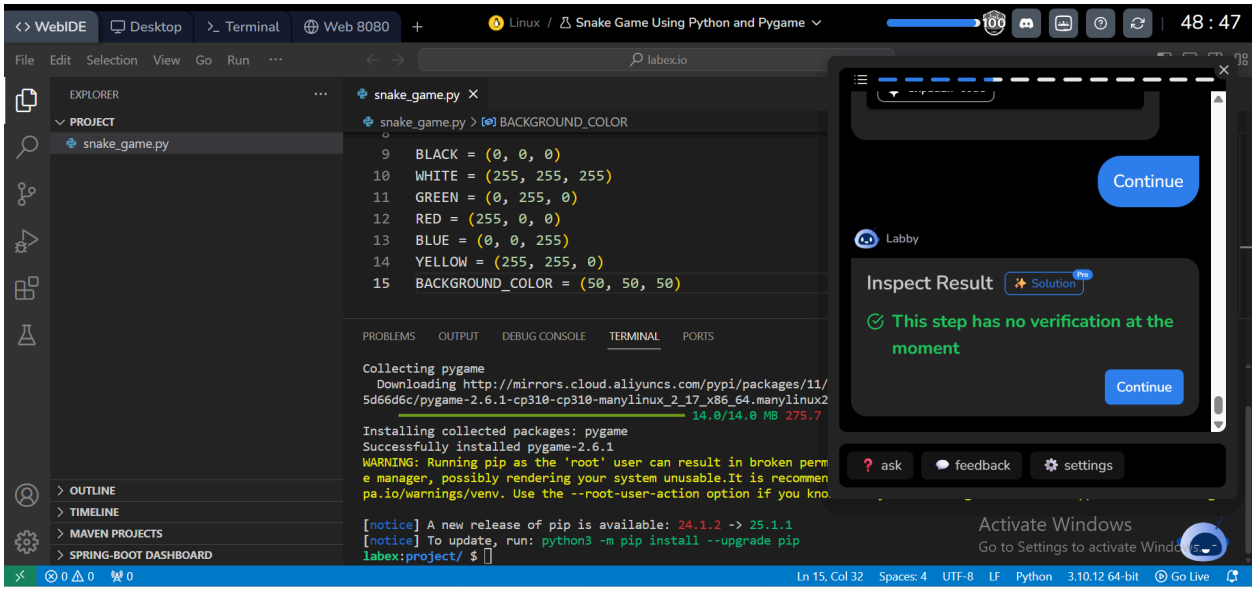


4. Setup the game window
    a. WIDTH = 800
    b. HEIGHT = 600
    c. FPS = 10

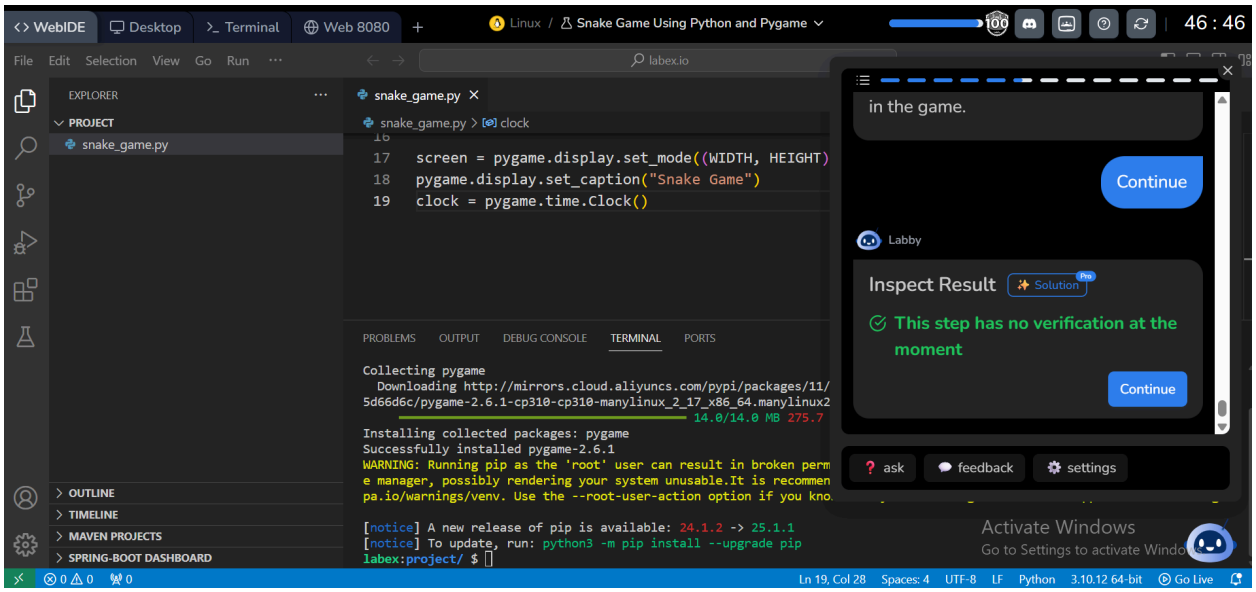


5. Define Colors
    a. BLACK = (0, 0, 0)
    b. WHITE = (255, 255, 255)
    c. GREEN = (0, 255, 0)
    d. RED = (255, 0, 0)
    e. BLUE = (0, 0, 255)

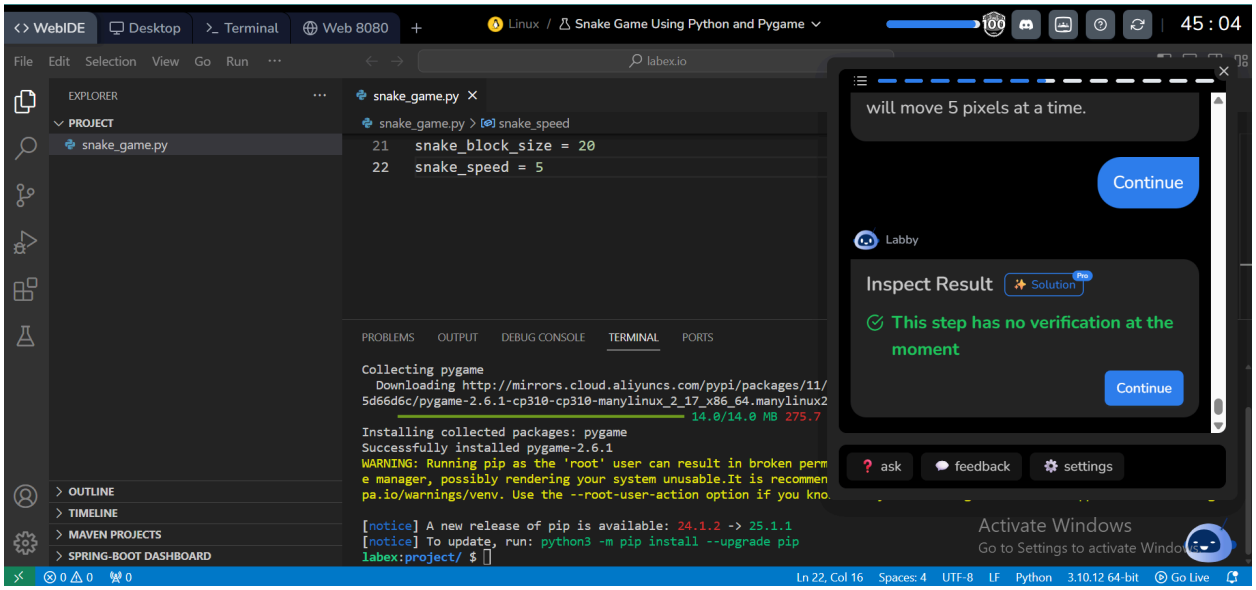
f. YELLOW = (255, 255, 0)
g. BACKGROUND_COLOR = (50, 50, 50)



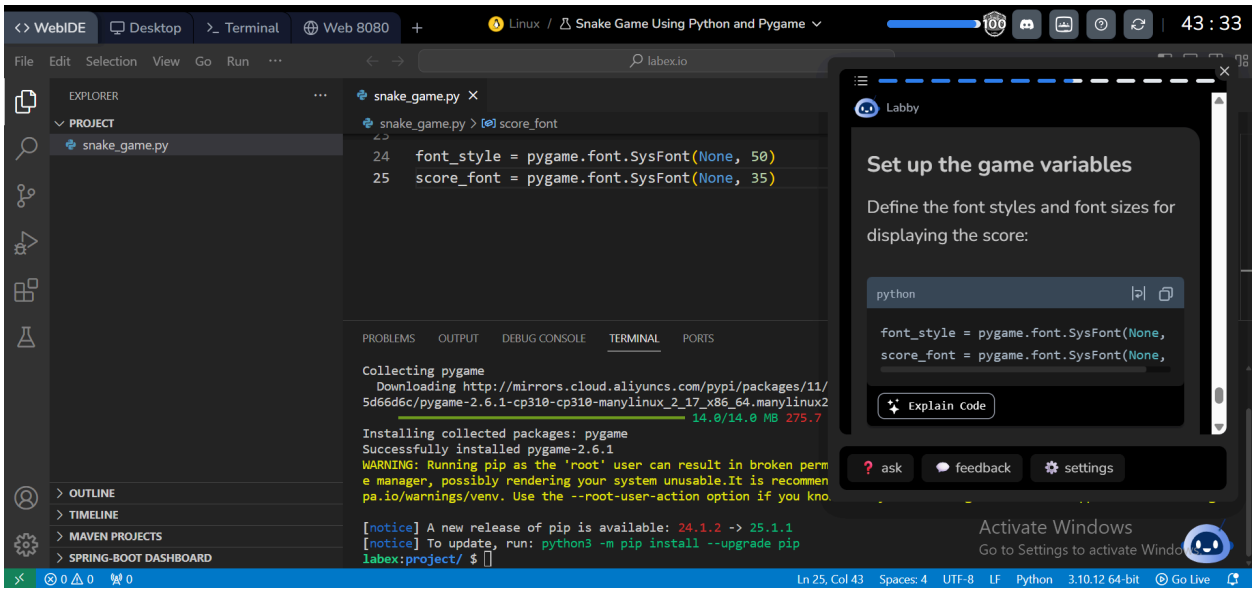
6. Setup the game window
   a. screen = pygame.display.set_mode((WIDTH, HEIGHT))
   b. pygame.display.set_caption("Snake Game")
   c. clock = pygame.time.Clock()



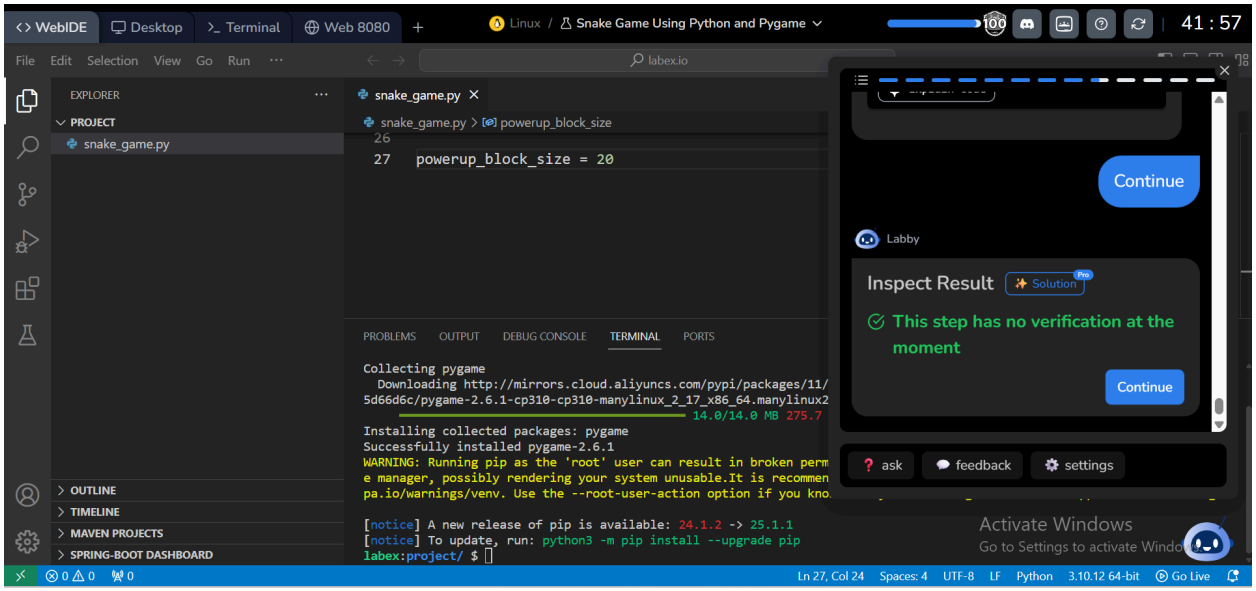
7. Setup the snake
   a. snake_block_size = 20
   b. snake_speed = 5



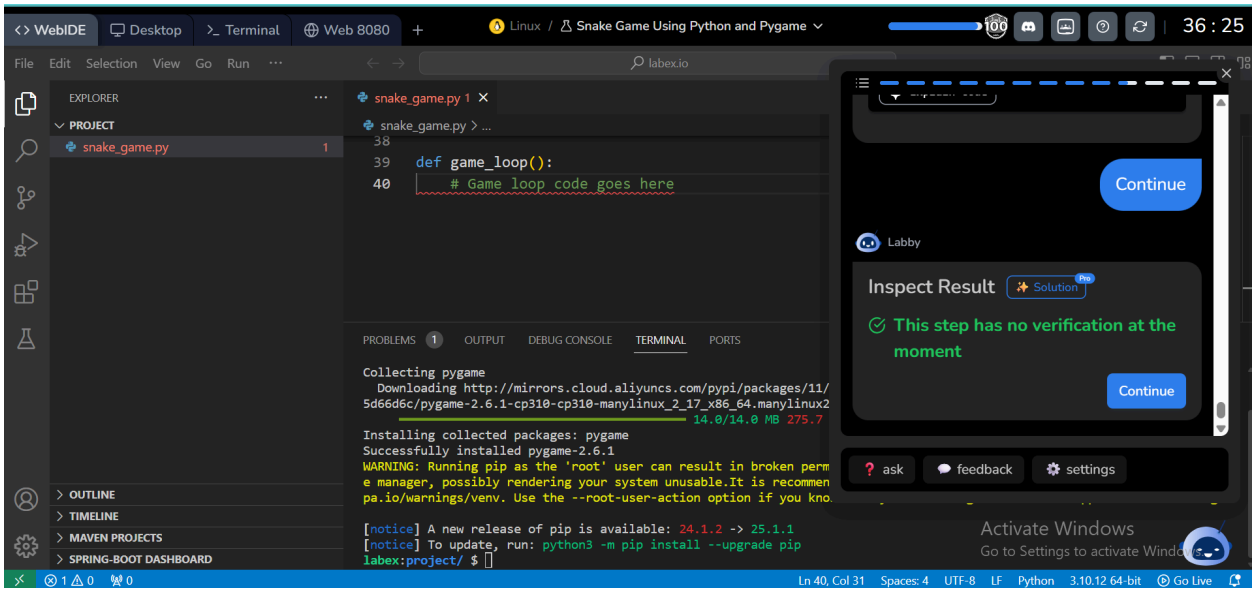
8. Setup the game variables
    a. font_style = pygame.font.SysFont(None, 50)
    b. score_font = pygame.font.SysFont(None, 35)



9. Setup the power-up:
    a. powerup_block_size = 20



10. Define Functions:
    a. def draw_snake(snake_block_size, snake_list):
    b. for x in snake_list:
    c. pygame.draw.rect(
    d. screen, GREEN, [x[0], x[1], snake_block_size, snake_block_size]
    e.)
    f.
    g. def draw_powerup(powerup_x, powerup_y):
    h. pygame.draw.rect(
    i. screen, RED, [powerup_x, powerup_y, powerup_block_size, powerup_block_size]
    j.)
    k.
    l. def display_score(score):
    m. value = score_font.render("Score: " + str(score), True, WHITE)
    n. screen.blit(value, [10, 10])
    o.
    p. def game_loop():
    q. # Game loop code goes here



11. Complete the game loop code:
    a. def game_loop():
    b. game_over = False
    c. game_close = False
    d.
    e. # Set up the snake's starting position
    f. x1 = WIDTH / 2
    g. y1 = HEIGHT / 2
    h. x1_change = 0
    i. y1_change = 0
    j.
    k. # Set up the snake's body
    l. snake_list = []
    m. snake_length = 1
    n.
    o. # Set up the power-up
    p. powerup_x = round(random.randrange(0, WIDTH - powerup_block_size) / 20) * 20
    q. powerup_y = round(random.randrange(0, HEIGHT - powerup_block_size) / 20) * 20
    r.
    s. # Set up the game loop
    t. while not game_over:

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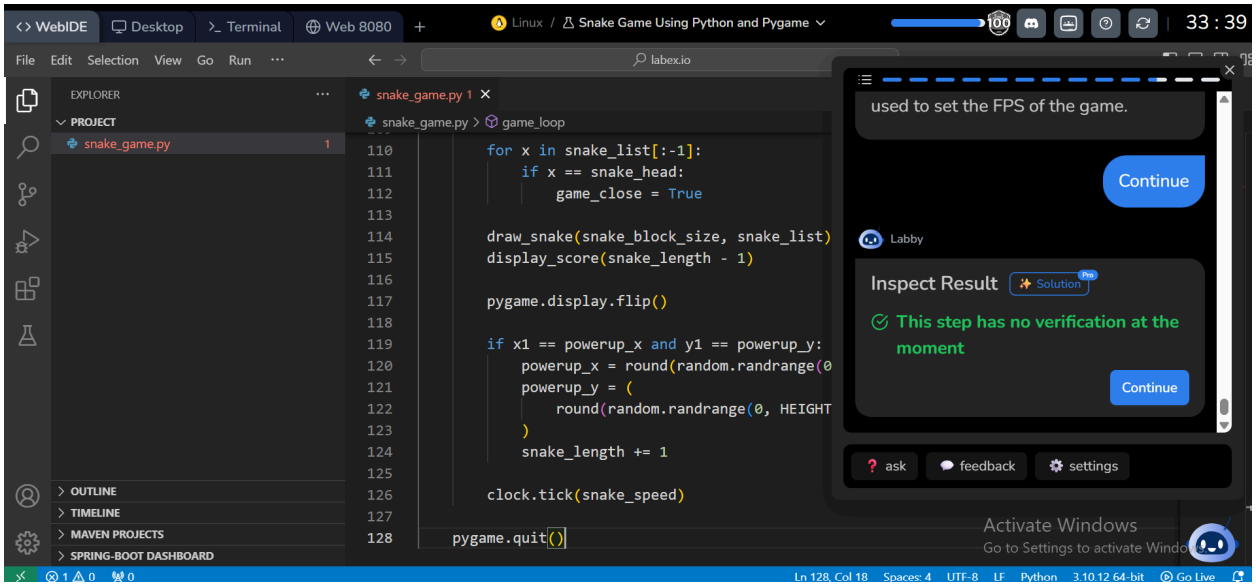
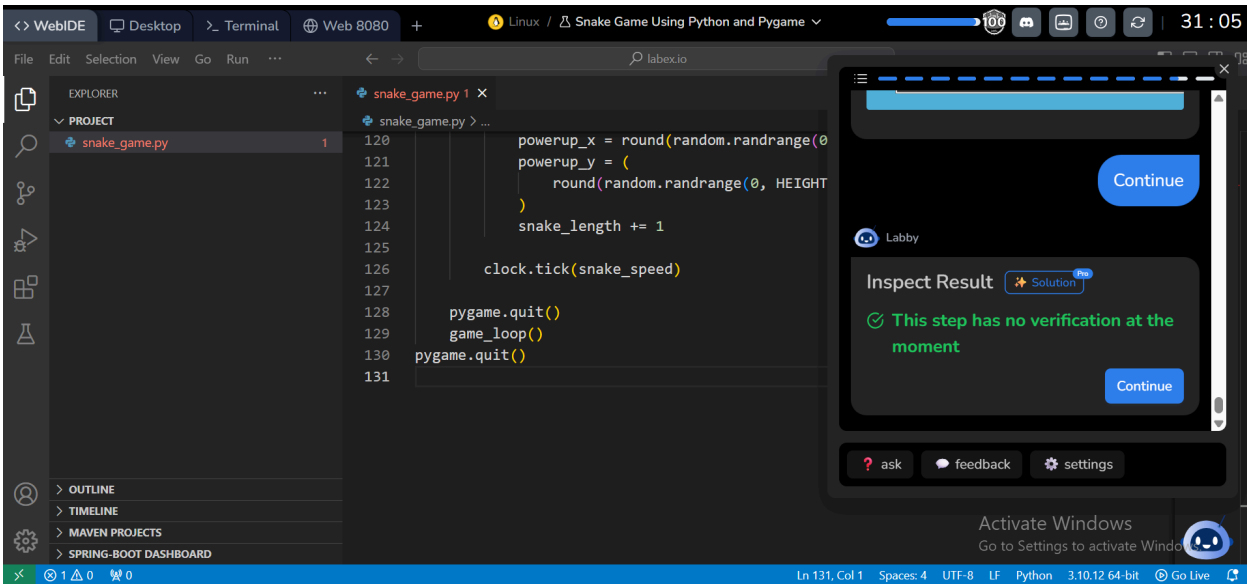
u.          while game_close:
v.              screen.fill(BACKGROUND_COLOR)
w.              message = font_style.render("Press SPACE to play again", True,
    YELLOW)
x.              screen.blit(message, [WIDTH / 2 - 200, HEIGHT / 2 - 50])
y.              pygame.display.flip()
z.
aa.             for event in pygame.event.get():
bb.                 if event.type == pygame.QUIT:
cc.                     game_over = True
dd.                     game_close = False
ee.                 if event.type == pygame.KEYDOWN:
ff.                     if event.key == pygame.K_SPACE:
gg.                         game_loop()
hh.
ii.         for event in pygame.event.get():
jj.             if event.type == pygame.QUIT:
kk.                 game_over = True
ll.             if event.type == pygame.KEYDOWN:
mm.                     if event.key == pygame.K_LEFT:
nn.                     x1_change = -snake_block_size
oo.                     y1_change = 0
pp.                 elif event.key == pygame.K_RIGHT:
qq.                     x1_change = snake_block_size
rr.                     y1_change = 0
ss.                 elif event.key == pygame.K_UP:
tt.                     y1_change = -snake_block_size
uu.                     x1_change = 0
vv.                 elif event.key == pygame.K_DOWN:
ww.                         y1_change = snake_block_size
xx.                     x1_change = 0
yy.
zz.         if x1 >= WIDTH or x1 < 0 or y1 >= HEIGHT or y1 < 0:
aaa.                game_close = True
bbb.
ccc.            x1 += x1_change
ddd.            y1 += y1_change
eee.            screen.fill(BACKGROUND_COLOR)
fff.        pygame.draw.rect(
```

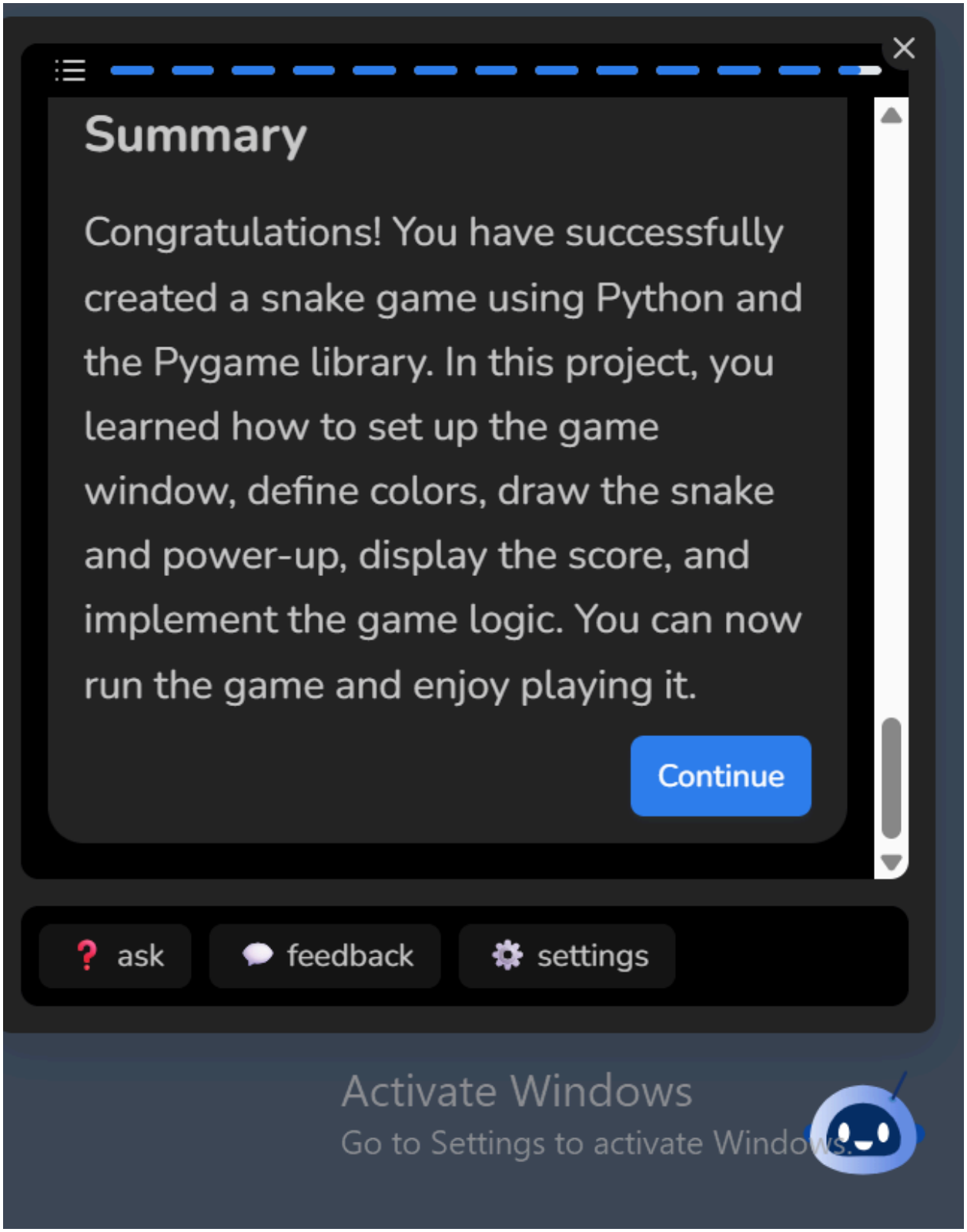
```
ggg.                screen, BLUE, [powerup_x, powerup_y, powerup_block_size,
    powerup_block_size]
hhh.            )
iii.
jjj.        snake_head = []
kkk.            snake_head.append(x1)
lll.        snake_head.append(y1)
mmm.        snake_list.append(snake_head)
nnn.            if len(snake_list) > snake_length:
ooo.                del snake_list[0]
ppp.
qqq.            for x in snake_list[:-1]:
rrr.              if x == snake_head:
sss.                    game_close = True
ttt.
uuu.            draw_snake(snake_block_size, snake_list)
vvv.            display_score(snake_length - 1)
www.
xxx.            pygame.display.flip()
yyy.
zzz.            if x1 == powerup_x and y1 == powerup_y:
aaaa.               powerup_x = round(random.randrange(0, WIDTH -
    powerup_block_size) / 20) * 20
bbbb.               powerup_y = (
cccc.                   round(random.randrange(0, HEIGHT - powerup_block_size)
    / 20) * 20
dddd.               )
eeee.               snake_length += 1
ffff.
gggg.           clock.tick(snake_speed)
hhhh.
iiii.     pygame.quit()
```



12. Run the game:
    a. game_loop()
    b. pygame.quit()

    c. python snake_game.py



13. 
Summary
Congratulations! You have successfully created a snake game using Python and the Pygame library. In this project, you learned how to set up the game window, define colors, draw the snake and power-up, display the score, and implement the game logic. You can now run the game and enjoy playing it.
Continue
ask
feedback
settings
Activate Windows
Go to Settings to activate Windows.