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Task 12: Simulate Gaming concepts using
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                 Aimito Simulate Gaming concepts using pygame
anno "timodela"
dot solt blog it
                 problem 1: unite apython program to create a
Dobrith ATOTAL
19009.1.130001
                 snake Game Using pygame package.
DADOG - I PRICED
                 Algorithm:
131309-513001
                * Import pygame package and initialize it
149E9 - 8 porto
                * pefine the window size and title
MODELS - BOCK
                * Create a Snake class which initializes the snake
37799-8 HAMB
                position, colour, and movement.
Holl Bimdue.
m What nost 15
                * create a fruit class which initializes the fruit posi
                -tion and colour
root main por
               * Create afunction to check if the snake collides
                with the fruit and increase the score.
               * create a function to Check if the snake conid
                es with the window and end the game.
               *create a function toupdate the snake position
               based on the user input
               * Create a function to update the game display
               and draw the snake and fruit
              * create agame voop to continuously update
               the game display, snake position and check
it tosall
             * end the game if the user quits or the snake
              for collisions.
10-310-
              collides with the window.
              Program:
             #importing libraries
import pyname
import-time
```

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```
importrandom
   snake-speed = 15
   # window size
   window_x = 720
   window-4= 480
  # defining colors
   black = Pygame.color(0,0,0)
   white = Pygame. color (255, 255, 255)
   red = Pygame. color (255,0,0)
  green = Pygame. color (0,255,0)
   blue = Pygame.color(0,0,255)
 #Initialising pygame
  pygame init()
 #initalise game window
 Pygame. display. set=caption ('Greeks for Geeks snakes')
 game_window=pyname.display.set_mode((window_x, wind
 # FPS (Frames per second) comboller
 fps = pygame.time.clock()
 # defining snake default position
 snake_position = [100,50]
#defining first 4 blocks of snake body
Snake_body=[[100,50], [90,50], [80,50], [80,50], [70,50]]
# fruit position
fruit_position= [random. randrange(1, (window_x/10))*
            random.randrange (, (window_4/10))*107
fruit_spown = True
#setting default snake direction towards
#right right direction = rection Change to = direction
```

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# initial score
mobilion troggan
                   score 20
5 63 392 - 331 DIVE.
                   # displaying score function
                   def show_score(choice, color, front, size):
SEE wab Miles SIZE
CFEX_wooding
                    # creating Font object score_font
                     score-fonts pyrame. font. sysfont (font, size)
rolon plainthab 14
                     # create the display surface object
                    #Score _ Book 1 Surface
                     Score_surface = score_font. render ('score: + str(score),
                                                          True, color)
                     # create a rectangular object for the next
                     # surface object
                      Score_rect=score_surface.get_rect()
                     #displaying text
                      game_window.blit(score_surface, score_rect)
                 #game overfunction
                 defgame_over():
                    # creating font object my_font
                    my font = pygame. font. sysfont (times new roman), 50)
                    # creatinga text surface on which text
                    #will be drawn
                     game_over-surface=my_font.render(
                         your score is: + sh (score), True, red)
                    # create a rectangular object for the text
                    # surface object
                    game-over-rect = game_over-surface.get_recte)
                    # setting position of the text
                    9 ame_over_rect.midtop=window_x/2, window
                   # blit will draw the text on screen
                    game_window.blit (game-over-surface, game -
                                                        over-rect)
                    Pygame.display.flip()
```

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```
#after 2 seconds we will quit the program
   time. sleep(2)
   # deactivating pygame library
   pygame. quiti)
  # quit the program
   quit()
# main function
while True:
 # handing key events
 for event in pygame. event. get():
    if event. type = = pygame. KGyDown:
      if event. key = = pygame. K-Up:
        Change_to = DOWN'
      if event. key = = pygame. K-LEFT:
         change-to='LEFT'
       if event. key==pygame. K_RIGHT:
         change - to = 'RIGHT'
  #If two keys pressed simultaneously
 # wedon't want snake to move into two
 #directions simultaneously
  if change_to== 'up'and direction!=Down':
   direction = 'DOINH
 if change_to = = 'own' and direction! = up':
   direction = 'Down'
 if change_to == 'LEFT' and direction != 'RiGHT's
   direction = 'LEFT'
 if change_to = = 'RIGHT and direction!='LEFT!
   direction = 'TZIGHT'
 # moving the snake
 if direction == 'Up':
    snake-position[1]=10
 if direction == 'Down':
```

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snake-position[1]+=10
if direction == 'LEFT';
  Snake-Position[0]-=10
if direction == 'RIGHT':
  snake-position[0]+=10
# snake body growing mechanism
# if fruits and snakes collide-then scores
# will be incremented by wo
Snake_body.insert(o, list (snake_position))
if snaice_position[0] == fruit_position [0] and snake_
Position [1] == Fruit_Position[1]:
    Score+=10
    Fruit - spawn=false
 else:
   snake_body.pop()
 if not fruit_spawn:
     Fruit_position=[random.randrange(1, (window_x)
                       //10))*10, random. vandrange (1,
                              (window_4/10))*16
  Fruit_spawn=True
   game_window, fill (black)
   for pos in snake_body:
       pygame.draw.rect(game_window,green,
                Pygame. Tect (pos [0], pos[i], 10, 10)
   pygame-draw. rect (game_window, white, pygame-Rect (
      fruit_Position [0], Fruit_Position[1], 10,10))
   # game over conditions
   if snake-position[0] to or snake-position[0] >
                  window_x-10:
       game-over()
    if smake-position[1] Lo or snake-position[1] >
                  window-y-10;
       game-overc)
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#Touching the snake body

For block in snake \_ body[1]:

if snake \_ position [o] == block[o] and snake \_

Position [i] == block[i]:

qame\_over()

#displaying score continuously

show \_ score (I, white ! times new roman!, 20)

#Refresh qame screen

pygame. display.update()

# frame Per second | Refresh Trate

fps. tick (snake\_speed)

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# if fruit

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problem 2: write a python program to Develop
    a chess board using pygame.
   Algorithm:
    Import pygame and initialize it
   set screen size and title
   perfine colors for the board and pieces
     Define afunction to draw the board by loopingover
     rows and columns and drawing squares of different
     colors.
  petine a function to draw the pieces on the board by
  pading images for each piece and placing them on
  the Corresponding square.
  Define the finition state of the board as a list of lists
  containing the pieces.
  Draw the board and pieces on the screen.
 start the game loop.
 Program :-
 import pygame
 #initialize Pygame
 Pygame.init()
#set screen size and title
Screen_size = (640,640)
screen = pygame. dispby. set_mode (screen_size)
Pygame. display set_caption ("chess Board")
# Define colors
black = (0,0,0)
White = (255, 255, 255)
brown = (153, 76,0)
# Define function to draw the board
de F draw-board():
   for row in range (8):
for cool in range (8):
```

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- san wolovy
                      Square-color=white if (row+coi).1.2 == 0 else brown
a chess k
                      59 vare _ vect = pypome . Rect (co1 * 80, vow * 80, 80, 80)
                      Pygame. draw. rect-(screen, square-color, square
in throppe
9.4.169ml
                # Define function to draw the pieces
5000 J 50
                Het draw - Pieces (board):
00 311130
                   Price-images = {
DEFINE V
                      't': Pygame.image.load ('images/rook.png'),
                      n: pygame. image. 10 ad ('images/kinght.png')
                      b: Pygame. image. load ('images | bishop. png'),
                      '9: Pygame. image. load ('images | queen. png').
                      'K': pyganne.image.wad ('images/king.png'),
                      P': pygame.image.load ('images | Pawn. Png')
                  for rowin range (8):
                   For Colinnangels):
                       Piece = board [row][coi]
                       ifpiece! = '.':
                          Piece-image= piece-images [piece]
                          Piece-rect = Pygame. Rect (co1*80, row*80,
                          screen. blit (Piece-image, piece-rect)
            # octine initial state of the board-
YEAR ER
            board = [
               ['r', 'n', 'b', '9', 'K', 'b', 'n', 'r']
130 12
               [P', P', P', P', P', P', P']
               [',','.','.','.','.','.'],
              ['.', '.', '.', '.', '.', '.', '.'],
              ['.', '.', '.', '.', '.', '.'],
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Result's Thus, the program for pygame is executed and verified successfully.