

15/10/25

task 12 Simulate Gaming Concepts using Python.

Aim:- To simulate gaming concepts using Python.

Snake Game :-

Problem 1 :- write a python program to create a SnakeGame using Pygame package.

conditions :-

- ① Set the window size
- ② Create a Snake
- ③ make the snake to move in the directions when left, right, down and up key is pressed.
- ④ When snake hits the fruit, increase the score by 10.
- ⑤ If the snake hits the window Game over.

Algorithm :-

1. Import pygame package and initialize it
2. Define the window size and title.
3. Create a snake class which initializes the snake position, color and movement.
4. Create a function to check if the snake collides with the fruit and increases the score.
5. Create a function to update the game display and draw the snake and fruit.
6. Create a game loop to continue
7. End the game.

Program:

```
# importing libraries
import pygame
import time
snake-speed = 15
window-x = 720
window-y = 480
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)

pygame.init()
pygame.display.set
fps = pygame.time.Clock()
snake-position = [[100, 50], [90, 50], [80, 50], [70, 50],
fruit-position = [random.randrange(1, window-x/10)*10,
                  random.randrange(1, window-y/10)*10]

fruit-spawn = True
direction = 'RIGHT'
change-to-direction
score = 0

def show-score(choice, color, font-size):
    score-font = pygame.font.SysFont(font-size)
    score-surface = score-font.render(score, True, color)

    if choice == 'score':
        screen.blit(score-surface, [350, 350])
    else:
        screen.blit(score-surface, [350, 550])

my-font = pygame.font.SysFont("times new roman", 50)
```

'your score is: '+str(score). True, red)

game_over_rect = game_over_surface.get

-rect()

game_over_rect.midtop = (window-x/2,

window-y/4);

for event in pygame.event.get():

if event.type == pygame.KEYDOWN:

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 direction == 'UP':

snake_position[i][j] = 10

if direction == 'DOWN':

snake_position[i][j+1] = 10

if direction == 'LEFT':

snake_position[i][j-1] = 10

if direction == 'RIGHT':

snake_position[i][j+1] = 10

if not fruit_spawn:

fruit_position = [random.randrange(1, (window

x//10)) * 10,

random.randrange(1, (window-y//10))

* 10)]

fruit_spawn = True

game_window.fill(black)

Score Card

OUTPUT:

Score: 0

```

for pos in snake_body:
    pygame.draw.rect(game_window, green,
                      pygame.Rect(pos[0], pos[1], 10, 10))

if snake_position[0] < 0:
    game_over = True

if snake_position[1] < 0:
    game_over = True

show_score(1, white, 'times new roman', 20)

pygame.display.update()

fps.tick(snake_speed)

```

Completed

✓

VELTECH	
EX No.	12
PERFORMANCE (5)	5
RESULT AND ANALYSIS (3)	3
VIVA VOCE (3)	3
RECORD (4)	4
TOTAL (15)	15
SIGN WITH DATE	

Result: Therefore, stimulation of gaming concept using python is completed.