

6/10/26 Task-12: Simple game simulation using pygame.

Aim:- To develop a simple game using the pygame module that demonstrates basic gaming concepts such as movement, collision detection, event handling, and screen updates.

Algorithm:-

1. Import the pygame module and initialize it using pygame.init()
2. Create a game window with a title, set dimensions, and background color
3. Define game objects
 - Player
 - Enemy
4. Handle user input for player movement using keyboard events (keydown, keyup)
5. Update enemy movement by changing its position automatically.

Program:-

```
import pygame
import sys
pygame.init()
screen_width = 600
screen_height = 400
screen = pygame.display.set_mode((screen_width, screen_height))
pygame.display.set_caption("Simple pygame simulation")
background_color = (173, 126, 230)
player_color = (0, 128, 0)
enemy_color = (25, 0, 0)
text_color = (0, 0, 0)
player = pygame.Rect(280, 340, 40, 40)
enemy = pygame.Rect(0, 50, 40, 40)
player_speed = 5
enemy_speed = 4
```

```

Clock = pygame.time.Clock()
running = True
while running:
    screen.fill(background_color)
    for event in pygame.event.get():
        if event.type == pygame.QUIT:
            pygame.quit()
            sys.exit()
    pygame.draw.rect(screen, player_color, player)
    pygame.draw.rect(screen, enemy_color, enemy)
    pygame.display.update()
    clock.tick(30)
    pygame.quit()

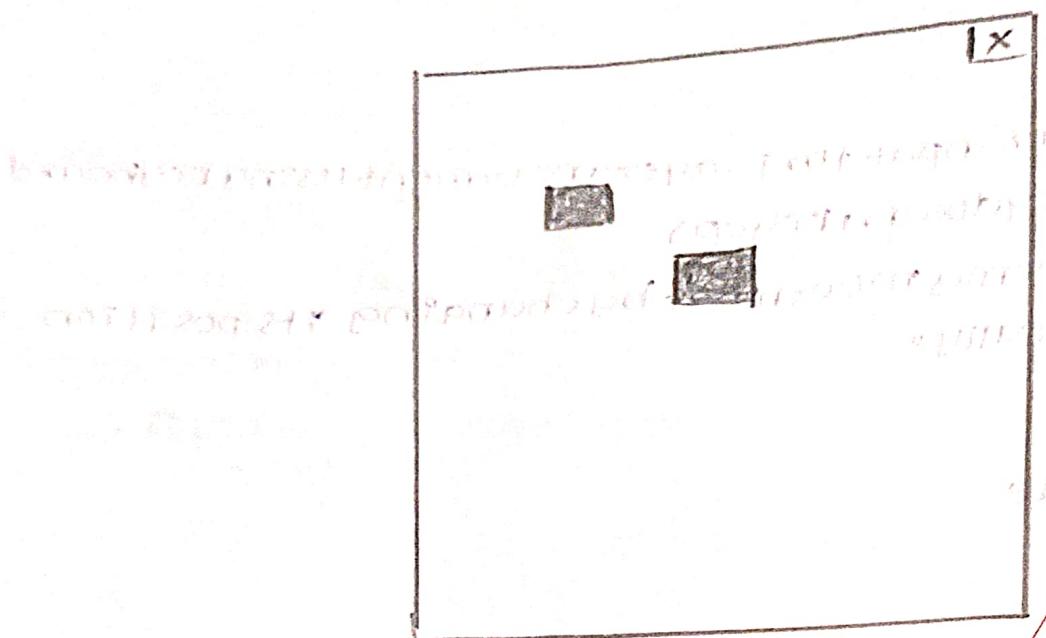
```

| VEL TECH - CSE | |
|-------------------------|----|
| EX NO. | 12 |
| PERFORMANCE (5) | 5 |
| RESULT AND ANALYSIS (5) | 5 |
| VIVA VOCE (5) | 5 |
| RECORD (5) | |
| TOTAL (20) | |
| SIGN WITH DATE | |

Result:

Thus a simple pygame-based game simulation was successfully.

25/6/20



dihedral angle (between two planes) = $\text{angle between their normal vectors}$

orthogonal (\perp) \Rightarrow $\text{normal vectors are perpendicular}$

coplanar (\in same plane) \Rightarrow $\text{normal vectors are parallel}$

skew ($\not\in$ same plane) \Rightarrow $\text{normal vectors are neither parallel nor perpendicular}$

$\text{cross product} \rightarrow \text{magnitude}$

$\text{dot product} \rightarrow \text{angle}$