GAME EGG CATCHER

TUGAS BESAR

Mata Kuliah Algoritma dan Pemograman
5th group

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STEP 1

```
#itertools untuk menggilir beberapa warna
from itertools import cycle

#membuat telur muncul di tempat acak
from random import randrange

#menganimasikan game di layar
from tkinter import Canvas, Tk, messagebox, font

```

STEP 2

```
10    #menyesuaikan ukuran Canvas Tk
11    canvas_width = 1366
12    canvas_height = 768
13
14    #menciptakan jendela Tk
15    root = Tk()
16
17    #membuat judul Tk
18    root.title("Egg Catcher - TUBES ALPRO")
19
```

STEP 3

```
#membuat warna kanvas biru langit
c = Canvas(root, width=canvas_width, height=canvas_height, background="#B0D6F5")
c.create_rectangle(-5, canvas_height-150, canvas_width+5, \
    canvas_height+5, fill="#70FF66", width=0)
c.create_oval(-80, -80, 150, 150, fill='yellow', width=0)

#menggambar jendela utama dan semua isi
c.pack()
```

STEP 4

```
#pergerakan telur dan warna penangkap telur(catcher)
egg_width = 45
egg_height = 55
egg_score = 10
egg_speed = 500
egg_interval = 4000
difficulty = 0.95
catcher_color = "blue"
catcher_width = 100
catcher_height = 100
catcher_startx = canvas_width / 2 - catcher_width / 2
catcher_starty = canvas_height - catcher_height - 20
catcher_startx2 = catcher_startx + catcher_width
catcher_starty2 = catcher_starty + catcher_height
```

STEP 5

```
#menggambar penangkap telur
catcher = c.create_arc(catcher_startx, catcher_starty, catcher_startx2, \
    catcher_starty2, start=200, extent=140, style="arc", outline=catcher_color, width=3)

#membuat gaya dan ukuran font
game_font = font.nametofont("TkFixedFont")
game_font.config(size=18)

#skor game
score = 0
score_text = c.create_text(10, 10, anchor="nw", font=game_font, \
    fill="darkblue", text="Score: "+ str(score))

#nyawa untuk bermain game
lives_remaining = 3
lives_text = c.create_text(canvas_width-10, 10, anchor="ne", \
    font=game_font, fill="darkblue", text="Lives: "+ str(lives_remaining))

#daftar melacak telur
eggs = []
```

STEP 6

```
#fungsi posisi acak untuk telur
def create_egg():
    x = randrange(10, 740)
    y = 40
    new_egg = c.create_oval(x, y, x+egg_width, y+egg_height, \
        fill=next(color_cycle), width=0)
    eggs.append(new_egg)
    root.after(egg_interval, create_egg)
```

```
#fungsi untuk menggerakkan telur
def move_eggs():
    for egg in eggs:
        (eggx, eggy, eggx2, eggy2) = c.coords(egg) #koordinat setiap telur
        c.move(egg, 0, 10) #telur jatuh kebawah
        if eggy2 > canvas_height:
            egg_dropped(egg)
    root.after(egg_speed, move_eggs)
```

STEP 6

```
#fungsi menghapus telur setelah jatuh
def egg_dropped(egg):
    eggs.remove(egg) #menghapus telur
    c.delete(egg) #telur menghilang dari canvas
    lose_a_life()
    if lives_remaining == 0:
        messagebox.showinfo("Game Over!", "Final Score: "+ str(score))
        root.destroy() #permainan berakhir
```

STEP 7

```
#melibatkan pengurangan nyawa dari variabel
def lose_a_life():
    global lives_remaining
    lives_remaining -= 1
    c.itemconfigure(lives_text, text="Lives: "+ str(lives_remaining))
```

```
#fungsi Telur ditangkap jika berada di dalam busur penangkap
def check_catch():
    (catcherx, catchery, catcherx2, catchery2) = c.coords(catcher) #koordinat penangkap
    for egg in eggs:
        (eggx, eggy, eggx2, eggy2) = c.coords(egg) #koordinat telur
        if catcherx < eggx and eggx2 < catcherx2 \
            and catchery2 - eggy2 < 40: #telur dalam horizontal / vertikal
            eggs.remove(egg)
            c.delete(egg)
            increase_score(egg_score) #menambah score
    root.after(100, check_catch)
```

STEP 7

```
#meningkatkan score
def increase_score(points):
    global score, egg_speed, egg_interval
    score += points #tambahkan score player
    egg_speed = int(egg_speed * difficulty)
    egg_interval = int(egg_interval * difficulty)
    c.itemconfigure(score_text, text="Score: "+ str(score)) #memperbarui teks untuk score
```

STEP 8

```
# fungsi mengatur kontrol untuk menangkap telur
def move_left(event): #fungsi kontrol ke kiri
    (x1, y1, x2, y2) = c.coords(catcher)
    if x1 > 0:
        c.move(catcher, -20, 0)
```

```
def move_right(event): #fungsi kontrol kekanan
    (x1, y1, x2, y2) = c.coords(catcher)
    if x2 < canvas_width:
        c.move(catcher, 20, 0)
```

STEP 8

```
#memanggil fungsi saat tombol ditekan
c.bind("<Left>", move_left)
c.bind("<Right>", move_right)
c.focus_set()
```

```
# 3 putaran permainan dimulai setelah jeda 1 detik
root.after(1000, create_egg)
root.after(1000, move_eggs)
root.after(1000, check_catch)

#memulai jendela utama setelah program dibuat
root.mainloop()
```

FINAL LOOK