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1 import pygame
2 import list as pl
3 from pygame import mixer
4 from tkinter import *
5
6 a=Tk()
7 a.title("My Python Piano")
8 a.geometry("1300x700")
9
10 font=("algerian",30,"bold")
11 f=("timesnewroman",20,"bold")
12 t=("chiller",50,"bold")
13
14 n1=Label(text="Designed By Swagatam",font=t,fg="black",bg="dark
    grey",anchor=CENTER,width=50,relief=SUNKEN)
15 n1.place(x=0,y=620)
16
17 img1=PhotoImage(file="piano_img_rbg.png")
18 l1=Label(image=img1)
19 l1.place(x=0,y=184)
20
21 img2=PhotoImage(file="music_rbg.png")
22 l3=Label(image=img2)
23 l3.place(x=500,y=420)
24
25 l4=Label(text="Welcome To My Piano",height=2,width=20,fg="grey")
26 l4.configure(font=font)
27 l4.place(x=30,y=62)
28
29 l2=Label(text="Welcome To My Piano",height=1,width=20,fg="purple")
30 l2.configure(font=font)
31 l2.place(x=50,y=50)
32
33 ins=Label(a,text="-: Instructions :-",font=font)
34 ins.place(x=800,y=100)
35
36 t1=Label(a,text="1. Up/Down Arrows Change Left Hand",font=f,fg="blue")
37 t1.place(x=700,y=200)
38
39 t2=Label(a,text="2. Left/Right Arrows Change Right Hand",font=f,fg="crimson")
40 t2.place(x=700,y=250)
41
42 t3=Label(a,text="3. Mouse Click is also Available",font=f,fg="dark blue")
43 t3.place(x=700,y=300)
44
45 t4=Label(a,text="Click on the Button to Play Piano",font=f,fg="grey")
46 t4.place(x=750,y=390)
47
48 def piano():
49     pygame.init()
50     pygame.mixer.set_num_channels(50)
51
52     big_font = pygame.font.SysFont('algerian', 50)
53     small_font = pygame.font.SysFont('serif', 14)
54     real_small_font = pygame.font.SysFont('timesnewroman', 12)
55     fps = 60
56     timer = pygame.time.Clock()
57     WIDTH = 52 * 35
58     HEIGHT = 400
59     screen = pygame.display.set_mode([WIDTH, HEIGHT])

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60     w_sounds = []
61     b_sounds = []
62     act_whites = []
63     act_blacks = []
64     l_oct = 4
65     r_oct = 5
66
67     l_hand = pl.l_hand
68     r_hand = pl.r_hand
69     notes = pl.notes
70     w_notes = pl.w_notes
71     b_notes = pl.b_notes
72     b_labels = pl.b_labels
73
74     for i in range(len(w_notes)):
75         w_sounds.append(mixer.Sound(f'{w_notes[i]}.wav'))
76
77     for i in range(len(b_notes)):
78         b_sounds.append(mixer.Sound(f'{b_notes[i]}.wav'))
79
80     pygame.display.set_caption("Python Piano")
81
82     def draw_piano(whites, blacks):
83         w_rects = []
84         for i in range(52):
85             rect = pygame.draw.rect(screen, 'white', [i * 35, HEIGHT - 300, 35,
300], 0, 2)
86             w_rects.append(rect)
87             pygame.draw.rect(screen, 'black', [i * 35, HEIGHT - 300, 35, 300], 2, 2)
88             key_label = small_font.render(w_notes[i], True, 'black')
89             screen.blit(key_label, (i * 35 + 3, HEIGHT - 20))
90             skip_count = 0
91             last_skip = 2
92             skip_track = 2
93             b_rects = []
94             for i in range(36):
95                 rect = pygame.draw.rect(screen, 'black', [23 + (i * 35) + (skip_count *
35), HEIGHT - 300, 24, 200], 0, 2)
96                 for q in range(len(blacks)):
97                     if blacks[q][0] == i:
98                         if blacks[q][1] > 0:
99                             pygame.draw.rect(screen, 'green', [23 + (i * 35) +
(skip_count * 35), HEIGHT - 300, 24, 200], 2, 2)
100                             blacks[q][1] -= 1
101
102                 key_label = real_small_font.render(b_labels[i], True, 'white')
103                 screen.blit(key_label, (25 + (i * 35) + (skip_count * 35), HEIGHT -
120))
104                 b_rects.append(rect)
105                 skip_track += 1
106                 if last_skip == 2 and skip_track == 3:
107                     last_skip = 3
108                     skip_track = 0
109                     skip_count += 1
110                 elif last_skip == 3 and skip_track == 2:
111                     last_skip = 2
112                     skip_track = 0
113                     skip_count += 1
114
115         for i in range(len(whites)):

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116         if whites[i][1] > 0:
117             j = whites[i][0]
118             pygame.draw.rect(screen, 'green', [j * 35, HEIGHT - 100, 35, 100],
2, 2)
119             whites[i][1] -= 1
120
121         return w_rects, b_rects, whites, blacks
122
123
124     def draw_hands(rightOct, leftOct, rightHand, leftHand):
125         # left hand
126         pygame.draw.rect(screen, 'white', [(leftOct * 245) - 175, HEIGHT - 60, 245,
30], 0, 4)
127         pygame.draw.rect(screen, 'black', [(leftOct * 245) - 175, HEIGHT - 60, 245,
30], 4, 4)
128         text = small_font.render(leftHand[0], True, 'black')
129         screen.blit(text, ((leftOct * 245) - 165, HEIGHT - 55))
130         text = small_font.render(leftHand[2], True, 'black')
131         screen.blit(text, ((leftOct * 245) - 130, HEIGHT - 55))
132         text = small_font.render(leftHand[4], True, 'black')
133         screen.blit(text, ((leftOct * 245) - 95, HEIGHT - 55))
134         text = small_font.render(leftHand[5], True, 'black')
135         screen.blit(text, ((leftOct * 245) - 60, HEIGHT - 55))
136         text = small_font.render(leftHand[7], True, 'black')
137         screen.blit(text, ((leftOct * 245) - 25, HEIGHT - 55))
138         text = small_font.render(leftHand[9], True, 'black')
139         screen.blit(text, ((leftOct * 245) + 10, HEIGHT - 55))
140         text = small_font.render(leftHand[11], True, 'black')
141         screen.blit(text, ((leftOct * 245) + 45, HEIGHT - 55))
142         text = small_font.render(leftHand[1], True, 'black')
143         screen.blit(text, ((leftOct * 245) - 148, HEIGHT - 55))
144         text = small_font.render(leftHand[3], True, 'black')
145         screen.blit(text, ((leftOct * 245) - 113, HEIGHT - 55))
146         text = small_font.render(leftHand[6], True, 'black')
147         screen.blit(text, ((leftOct * 245) - 43, HEIGHT - 55))
148         text = small_font.render(leftHand[8], True, 'black')
149         screen.blit(text, ((leftOct * 245) - 8, HEIGHT - 55))
150         text = small_font.render(leftHand[10], True, 'black')
151         screen.blit(text, ((leftOct * 245) + 27, HEIGHT - 55))
152         # right hand
153         pygame.draw.rect(screen, 'white', [(rightOct * 245) - 175, HEIGHT - 60, 245,
30], 0, 4)
154         pygame.draw.rect(screen, 'black', [(rightOct * 245) - 175, HEIGHT - 60, 245,
30], 4, 4)
155         text = small_font.render(rightHand[0], True, 'black')
156         screen.blit(text, ((rightOct * 245) - 165, HEIGHT - 55))
157         text = small_font.render(rightHand[2], True, 'black')
158         screen.blit(text, ((rightOct * 245) - 130, HEIGHT - 55))
159         text = small_font.render(rightHand[4], True, 'black')
160         screen.blit(text, ((rightOct * 245) - 95, HEIGHT - 55))
161         text = small_font.render(rightHand[5], True, 'black')
162         screen.blit(text, ((rightOct * 245) - 60, HEIGHT - 55))
163         text = small_font.render(rightHand[7], True, 'black')
164         screen.blit(text, ((rightOct * 245) - 25, HEIGHT - 55))
165         text = small_font.render(rightHand[9], True, 'black')
166         screen.blit(text, ((rightOct * 245) + 10, HEIGHT - 55))
167         text = small_font.render(rightHand[11], True, 'black')
168         screen.blit(text, ((rightOct * 245) + 45, HEIGHT - 55))
169         text = small_font.render(rightHand[1], True, 'black')
170         screen.blit(text, ((rightOct * 245) - 148, HEIGHT - 55))

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171 text = small_font.render(rightHand[3], True, 'black')
172 screen.blit(text, ((rightOct * 245) - 113, HEIGHT - 55))
173 text = small_font.render(rightHand[6], True, 'black')
174 screen.blit(text, ((rightOct * 245) - 43, HEIGHT - 55))
175 text = small_font.render(rightHand[8], True, 'black')
176 screen.blit(text, ((rightOct * 245) - 8, HEIGHT - 55))
177 text = small_font.render(rightHand[10], True, 'black')
178 screen.blit(text, ((rightOct * 245) + 27, HEIGHT - 55))
179
180
181 def draw_title_bar():
182     title_text = big_font.render("Let's Enjoy The Piano", True, 'white')
183     screen.blit(title_text, (298, 30))
184     title_text = big_font.render("Let's Enjoy The Piano", True, 'black')
185     screen.blit(title_text, (300, 20))
186
187
188 run = True
189 while run:
190     l_dict = {'Z': f'C{l_oct}',
191              'S': f'C#{l_oct}',
192              'X': f'D{l_oct}',
193              'D': f'D#{l_oct}',
194              'C': f'E{l_oct}',
195              'V': f'F{l_oct}',
196              'G': f'F#{l_oct}',
197              'B': f'G{l_oct}',
198              'H': f'G#{l_oct}',
199              'N': f'A{l_oct}',
200              'J': f'A#{l_oct}',
201              'M': f'B{l_oct}'}
202
203     r_dict = {'R': f'C{r_oct}',
204              '5': f'C#{r_oct}',
205              'T': f'D{r_oct}',
206              '6': f'D#{r_oct}',
207              'Y': f'E{r_oct}',
208              'U': f'F{r_oct}',
209              '8': f'F#{r_oct}',
210              'I': f'G{r_oct}',
211              '9': f'G#{r_oct}',
212              'O': f'A{r_oct}',
213              '0': f'A#{r_oct}',
214              'P': f'B{r_oct}'}
215     timer.tick(fps)
216     screen.fill('green')
217     w_keys, b_keys, act_whites, act_blacks = draw_piano(act_whites, act_blacks)
218     draw_hands(r_oct, l_oct, r_hand, l_hand)
219     draw_title_bar()
220     try:
221         for event in pygame.event.get():
222             if event.type == pygame.QUIT:
223                 run = False
224             if event.type == pygame.MOUSEBUTTONDOWN:
225                 black_key = False
226                 for i in range(len(b_keys)):
227                     if b_keys[i].collidepoint(event.pos):
228                         b_sounds[i].play(0, 1000)
229                         black_key = True
230                         act_blacks.append([i, 30])

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231         for i in range(len(w_keys)):
232             if w_keys[i].collidepoint(event.pos) and not black_key:
233                 w_sounds[i].play(0, 3000)
234                 act_whites.append([i, 30])
235     if event.type == pygame.TEXTINPUT:
236         if event.text.upper() in l_dict:
237             if l_dict[event.text.upper()][1] == '#':
238                 index = b_labels.index(l_dict[event.text.upper()])
239                 b_sounds[index].play(0, 1000)
240                 act_blacks.append([index, 30])
241             else:
242                 index = w_notes.index(l_dict[event.text.upper()])
243                 w_sounds[index].play(0, 1000)
244                 act_whites.append([index, 30])
245         if event.text.upper() in r_dict:
246             if r_dict[event.text.upper()][1] == '#':
247                 index = b_labels.index(r_dict[event.text.upper()])
248                 b_sounds[index].play(0, 1000)
249                 act_blacks.append([index, 30])
250             else:
251                 index = w_notes.index(r_dict[event.text.upper()])
252                 w_sounds[index].play(0, 1000)
253                 act_whites.append([index, 30])
254
255     if event.type == pygame.KEYDOWN:
256         if event.key == pygame.K_RIGHT:
257             if r_oct < 8:
258                 r_oct += 1
259         if event.key == pygame.K_LEFT:
260             if r_oct > 0:
261                 r_oct -= 1
262         if event.key == pygame.K_UP:
263             if l_oct < 8:
264                 l_oct += 1
265         if event.key == pygame.K_DOWN:
266             if l_oct > 0:
267                 l_oct -= 1
268     except ValueError:
269         pass
270     pygame.display.flip()
271     pygame.quit()
272
273 b1=Button(a,text="Let's Play it",command=piano,height=2,width=14,bg="dark
274 green",fg="white",borderwidth=5,relief=SUNKEN)
275 b1.configure(font=f)
276 b1.place(x=800,y=450)
277 a.mainloop()
278

```