
**De La Salle University- Manila**
**Gokongwei College of Engineering**


Project Activity Number : 1
Project Activity Title : Type Racer

Date Performed :
Date Submitted :

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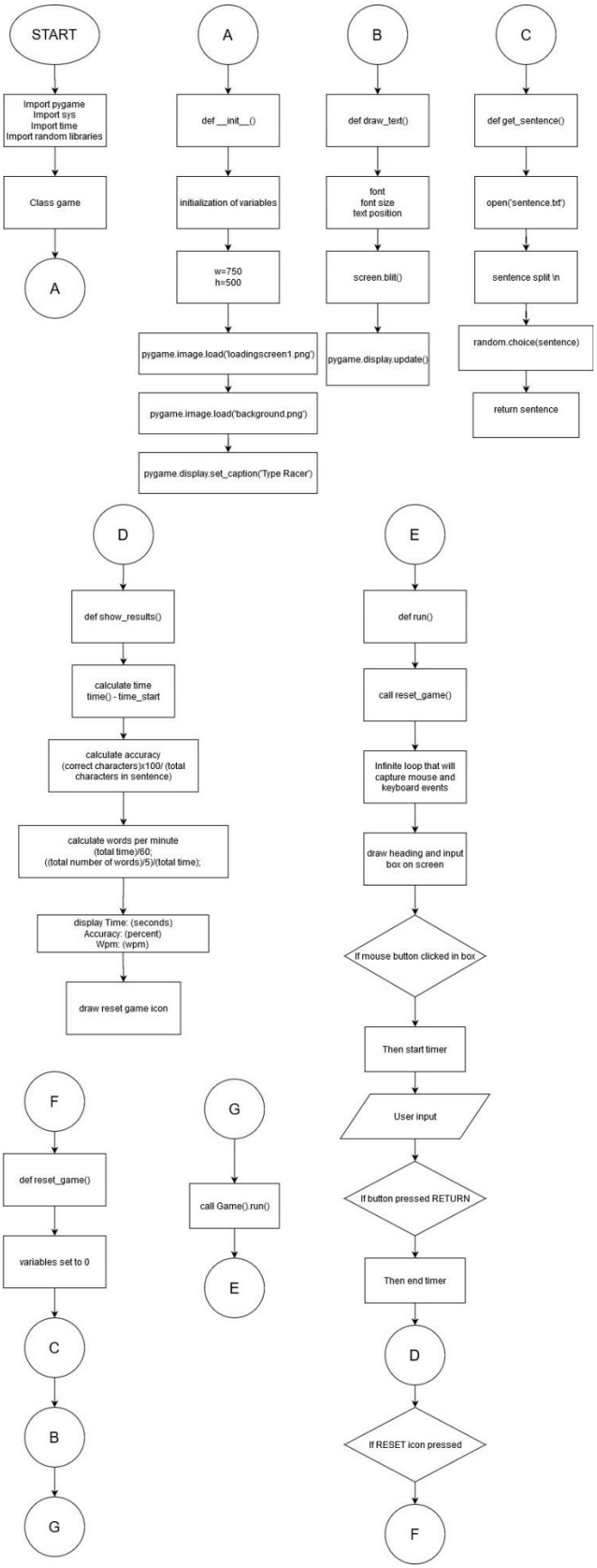
**Problem #1**
A program that tests your typing speed. It will calculate your word per minute and accuracy. We used the pygames library to create a GUI.

**Flowchart:**

(next page)


START
Import pygame
Import sys
Import time
Import random libraries
Class game
A
A
def __init__()
initialization of variables
w=750
h=500
pygame.image.load('loadingscreen1.png')
pygame.image.load('background.png')
pygame.display.set_caption('Type Racer')
B
def draw_text()
font
font size
text position
screen.blit()
pygame.display.update()
C
def get_sentence()
open('sentence.txt')
sentence split \n
random.choice(sentence)
return sentence
D
def show_results()
calculate time
time() - time_start
calculate accuracy
(correct characters)x100/ (total characters in sentence)
calculate words per minute
(total time)/60;
((total number of words)/5)/(total time);
display Time: (seconds)
Accuracy: (percent)
Wpm: (wpm)
draw reset game icon
E
def run()
call reset_game()
Infinite loop that will capture mouse and keyboard events
draw heading and input box on screen
If mouse button clicked in box
Then start timer
User input
If button pressed RETURN
Then end timer
D
If RESET icon pressed
F
F
def reset_game()
variables set to 0
C
B
G
G
call Game().run()
E

**Python code:**

```
import pygame
from pygame.locals import *
import sys
import time
import random



class Game:

    def __init__(self):
        self.w=750
        self.h=500
        self.reset=True
        self.active = False
        self.input_text=''
        self.word = ''
        self.time_start = 0
        self.total_time = 0
        self.accuracy = '0%'
        self.results = 'Time:0 Accuracy:0 % Wpm:0 '
        self.wpm = 0
        self.end = False
        self.HEAD_C = (255,213,102)
        self.TEXT_C = (240,240,240)
        self.RESULT_C = (255,70,70)


        pygame.init()
        self.open_img = pygame.image.load('loadingscreen1.png')
        self.open_img = pygame.transform.scale(self.open_img,
(self.w,self.h))

        self.bg = pygame.image.load('background.png')
        self.bg = pygame.transform.scale(self.bg,
(self.w,self.h))

        self.screen = pygame.display.set_mode((self.w,self.h))

        pygame.display.set_caption('Type Racer')


    def draw_text(self, screen, msg, y ,fsize, color):
        font = pygame.font.Font(None, fsize)
        text = font.render(msg, 1,color)
        text_rect = text.get_rect(center=(self.w/2, y))
```

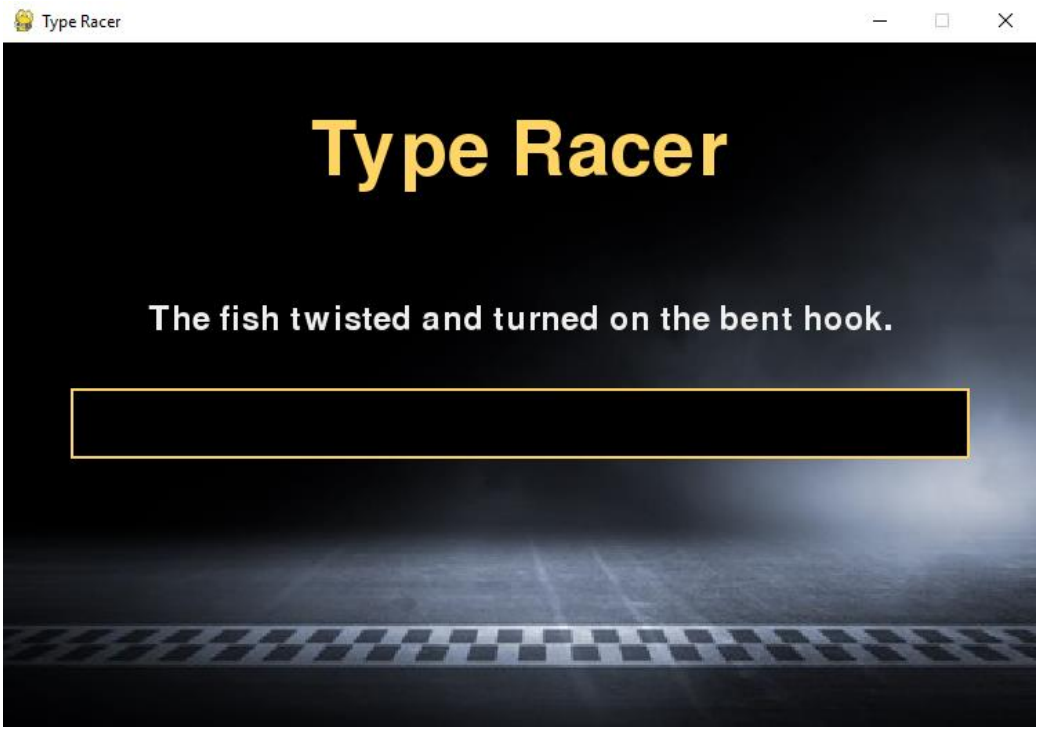
```
        screen.blit(text, text_rect)
        pygame.display.update()

    def get_sentence(self):
        f = open('sentences.txt').read()
        sentences = f.split('\n')
        sentence = random.choice(sentences)
        return sentence

    def show_results(self, screen):
        if(not self.end):

            self.total_time = time.time() - self.time_start


            count = 0
            for i,c in enumerate(self.word):
                try:
                    if self.input_text[i] == c:
                        count += 1
                except:
                    pass
            self.accuracy = count/len(self.word)*100


            self.wpm =
len(self.input_text)*60/(5*self.total_time)
            self.end = True
            print(self.total_time)

            self.results = 'Time:'+str(round(self.total_time))
+" secs   Accuracy:"+ str(round(self.accuracy)) + "%" + '   Wpm:
' + str(round(self.wpm))


            self.time_img = pygame.image.load('icon.png')
            self.time_img =
pygame.transform.scale(self.time_img, (150,150))

            screen.blit(self.time_img, (self.w/2-75,self.h-140))
            self.draw_text(screen,"Reset", self.h - 70, 26,
(100,100,100))

            print(self.results)
            pygame.display.update()

    def run(self):
```

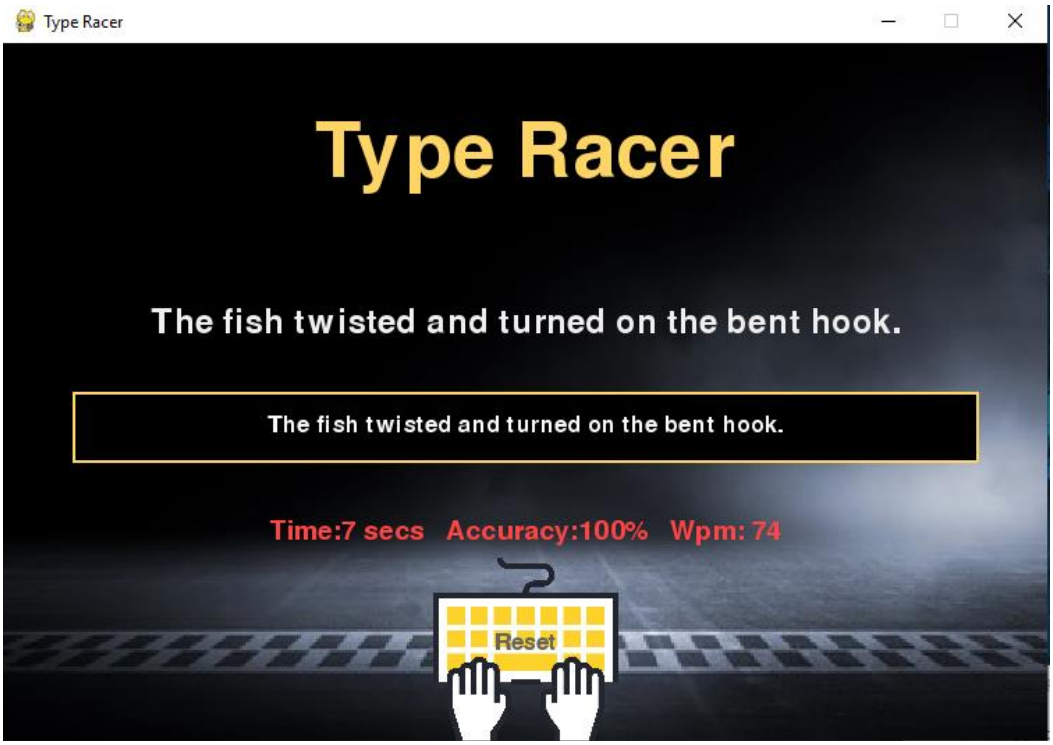
```
        self.reset_game()


        self.running=True
        while(self.running):
            clock = pygame.time.Clock()
            self.screen.fill((0,0,0), (50,250,650,50))
            pygame.draw.rect(self.screen,self.HEAD_C,
(50,250,650,50), 2)

            self.draw_text(self.screen, self.input_text, 274,
26,(250,250,250))

            pygame.display.update()


            for event in pygame.event.get():
                if event.type == QUIT:
                    self.running = False
                    sys.exit()

                elif event.type == pygame.MOUSEBUTTONUP:
                    x,y = pygame.mouse.get_pos()

                    if(x>=50 and x<=650 and y>=250 and y<=300):
                        self.active = True
                        self.input_text = ''
                        self.time_start = time.time()

                    if(x>=310 and x<=510 and y>=390 and
self.end):
                        self.reset_game()
                        x,y = pygame.mouse.get_pos()


                elif event.type == pygame.KEYDOWN:
                    if self.active and not self.end:
                        if event.key == pygame.K_RETURN:
                            print(self.input_text)
                            self.show_results(self.screen)

                            self.draw_text(self.screen,
self.results,350, 28, self.RESULT_C)
                            self.end = True

                        elif event.key == pygame.K_BACKSPACE:
```

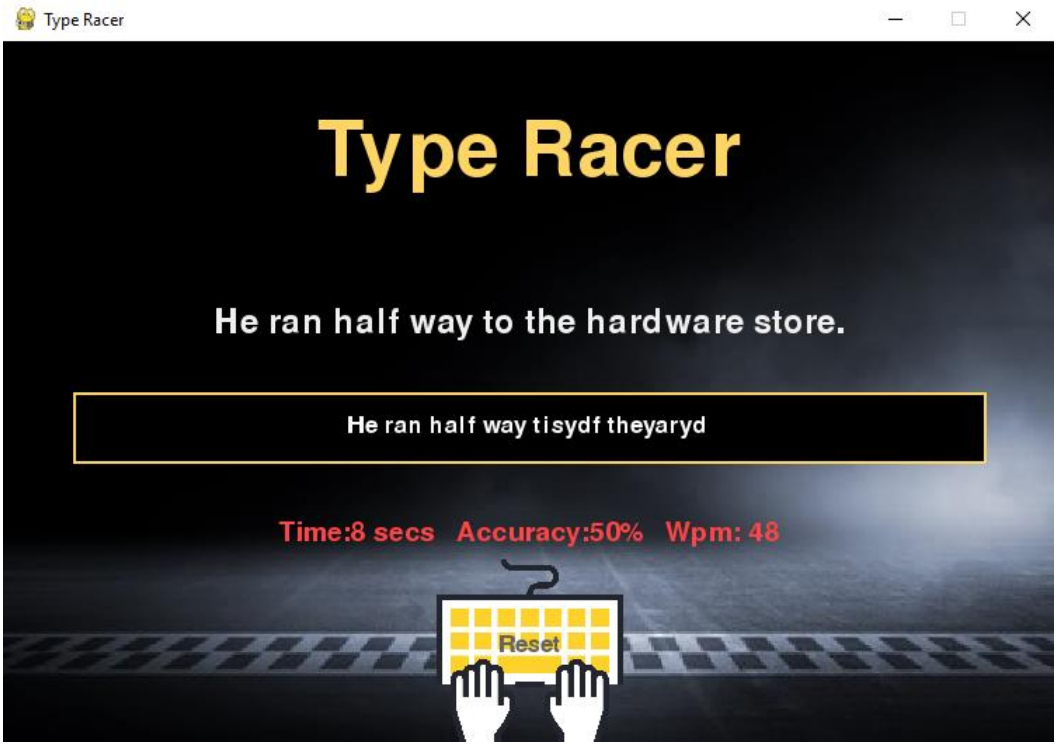
```
                            self.input_text = self.input_text[:-
1]
                        else:
                            self.input_text += event.unicode


            pygame.display.update()


        clock.tick(60)

    def reset_game(self):
        self.screen.blit(self.open_img, (0,0))

        pygame.display.update()
        time.sleep(1)

        self.reset=False
        self.end = False

        self.input_text=''
        self.word = ''
        self.time_start = 0
        self.total_time = 0
        self.wpm = 0

        # Get random sentence
        self.word = self.get_sentence()
        if (not self.word): self.reset_game()
        #drawing heading
        self.screen.fill((0,0,0))
        self.screen.blit(self.bg,(0,0))
        msg = "Type Racer"
        self.draw_text(self.screen, msg,80, 80,self.HEAD_C)
        # draw the rectangle for input box
        pygame.draw.rect(self.screen,(255,192,25),
(50,250,650,50), 2)

        # draw the sentence string
        self.draw_text(self.screen, self.word,200,
35,self.TEXT_C)

        pygame.display.update()
```

```
Game().run()
```

**Output Screenshots:**


Type Racer
Type Racer
The fish twisted and turned on the bent hook.
The fish twisted and turned on the bent hook.
Time:7 secs Accuracy:100% Wpm: 74
Reset


Type Racer
Type Racer
He ran half way to the hardware store.
He ran half way tisydf theyaryd
Time:8 secs Accuracy:50% Wpm: 48
Reset