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# Kelvin Agramonte
# **** Test your basic arithmetic skills. 5 correct answers,
# the level increase increasing the difficulty of the questions ****.
# Resources used from:
# https://www.geeksforgeeks.org/python-sep-parameter-print/
# https://www.askpython.com/python/python-continue-statement#:~:text=Python%
20continue%20statement%20is%20used,
# %27continue%27%20outside%20loop%E2%80%9C.&text=If%20the%20continue%20statement%
20is,of%20the%20inner%20loop%20only.

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import random
import time

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# Function to generate expressions
from typing import List

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def generate_expression(no_of_operators):
    operands = []
    operators = []
    operations = ['+', '-', '*', '/']
    expression = []
    operands_count = 0
    operators_count = 0
    for i in range(0, no_of_operators):
        operands.append(random.randint(0, 20))
    for i in range(0, no_of_operators - 1):
        operators.append((random.choice(operations)))
    for i in range(0, len(operators) + len(operands)):
        if i % 2 == 0:
            expression.append(operands[operands_count])
            operands_count += 1
        else:
            expression.append(operators[operators_count])
            operators_count += 1
    expression = ''.join(str(x) for x in expression)
    return expression

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# Function to calculate the solution
def result(expression):
    return (int(eval(expression)))

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# Function to evaluate if the answer is right
def evaluate(solution, user_solution):
    if solution == user_solution:
        return True
    else:
        return False

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# Display Message

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print("""Welcome to the maths game !!!

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Test your basic arithmetic skills by playing this simple game. With every 5
correct answers, the level increase
increasing the difficulty of the questions.
Remember :

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1. Write only the integral part of the answer
2. Operator precedence applies
3. You have 3 lives.
4. Total of 60 seconds will be provided.

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 5. The timer starts after the first answer is entered "")
input("Are you ready ?? Press any key to begin ! ")

Variables on which the game operates
score = 0
level = 1
lives = 3
start = time.time()
finish_time = time.time() + 60 # for the timed mode, 60 seconds are needed

While loop to drive the game
while lives != 0 and time.time() < finish_time:
 # Increase the level of difficulty every 5 questions.
 if score != 0 and score % 5 == 0:
 level = level + 1
 print("LEVEL : ", level)
 no_of_operands = level + 1
 question_expression = generate_expression(no_of_operands)
 print(question_expression, end='')
 # Checking for any divide by zero or numerical errors that may show up
 correct_answer = 0
 try:
 correct_answer = result(question_expression)
 except:
 print("OOPS ! I messed up ! Lets do it again !")
 continue
 answer = int(input(" = "))

 if evaluate(correct_answer, answer):
 print("CORRECT ! ", end='')
 score = score + 1
 print("SCORE = ", score, "LIVES = ", lives)
 elif score >= 5:
 print('PER' 'FEC' 'TION', sep='-'\n')
 elif score >= 10:
 print('KILLER COMBO!!')
 else:
 print("WRONG ! ", end='')
 lives = lives - 1
 print("SCORE = ", score, "LIVES = ", lives)

print("GAME OVER !!!")

print("Maximum Level = ", level, "SCORE = ", score)

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