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Idm:to20raje https://github.com/Rutvi1309/dsss_homework_2

Task:3

```python
import random

def generate_random_integer(min_value, max_value):
    """Generate a random integer within the given range."""
    return random.randint(min_value, max_value)

def generate_operator():
    """Generate a random arithmetic operator: +, -, *."""
    return random.choice(['+', '-', '*'])

def calculate_result(num1, num2, operator):
    """
    Calculate the result of an arithmetic operation and return both the problem and the answer.
    """
    problem = f"{num1} {operator} {num2}"
    if operator == '+':
        answer = num1 + num2
    elif operator == '-':
        answer = num1 - num2
    else:
        answer = num1 * num2
    return problem, answer
```

```python
def math_quiz():
    score = 0
    total_questions = 3  # You can change the number of questions here

    print("Welcome to the Math Quiz Game!")
    print("You will be presented with math problems, and you need to provide the correct answers.")

    for _ in range(total_questions):
        num1 = generate_random_integer(1, 10)
        num2 = generate_random_integer(1, 5)  # Adjusted max value to an integer
        operator = generate_operator()

        problem, answer = calculate_result(num1, num2, operator)
        print(f"\nQuestion: {problem}")

        # Error handling for non-integer inputs
        while True:
            try:
                user_answer = int(input("Your answer: "))
                break  # Break the loop if input is an integer
            except ValueError:
                print("Please enter a valid integer.")

        if user_answer == answer:
            print("Correct! You earned a point.")
            score += 1
        else:
            print(f"Wrong answer. The correct answer is {answer}.")

    print(f"\nGame over! Your score is: {score}/{total_questions}")
```

```
PS C:\Users\rutvi\dsss_homework_2\math_quiz> git push origin main
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 1.06 KiB | 1.06 MiB/s, done.
Total 4 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/Rutvi1309/dsss_homework_2.git
   9fad084..957b0b7  main -> main
```

Task:4

```python
import unittest
from math_quiz import generate_random_integer, generate_operator, calculate_result

class TestMathFunctions(unittest.TestCase):
    def test_generate_random_integer_within_range(self):
        min_val = 1
        max_val = 10
        for _ in range(1000):
            rand_num = generate_random_integer(min_val, max_val)
            self.assertTrue(min_val <= rand_num <= max_val)

    def test_generate_operator(self):
        # Test if operator generated is one of the valid arithmetic operators
        valid_operators = ['+', '-', '*']
        operator = generate_operator()
        self.assertIn(operator, valid_operators)

    def test_calculate_result(self):
        # Test cases for calculate_result function
        # Define some test cases to check if the calculations are correct
        test_cases = [
            (5, 2, '+', '5 + 2', 7),  # Example test case
            # Add more test cases as necessary
        ]

        for num1, num2, operator, expected_problem, expected_answer in test_cases:
            problem, answer = calculate_result(num1, num2, operator)
            self.assertEqual(problem, expected_problem)
            self.assertEqual(answer, expected_answer)

if __name__ == '__main__':
    unittest.main()
```

Task:5

```
PS C:\Users\rutvi\dsss_homework_2> pip install git+https://github.com/Rutvi1309/dsss_homework_2.git
Collecting git+https://github.com/Rutvi1309/dsss_homework_2.git
  Cloning https://github.com/Rutvi1309/dsss_homework_2.git to c:\users\rutvi\appdata\local\temp\pip-req-build-lesmqoiz
  Running command git clone --filter=blob:none --quiet https://github.com/Rutvi1309/dsss_homework_2.git 'C:\Users\rutvi\AppData\Local\Temp\pip-req-build-lesmqoiz'
  Resolved https://github.com/Rutvi1309/dsss_homework_2.git to commit 88f28e059f3027c31a20718d498882074f5ae70bf
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Building wheels for collected packages: math-quiz-package
  Building wheel for math-quiz-package (pyproject.toml) ... done
  Created wheel for math-quiz-package: filename=math_quiz_package-1.0.0-py3-none-any.whl size=7209 sha256=080dfdac15b1aa133ce80925e3acc5757877cea9e6e2d8e949782fcc2092bf923
  Stored in directory: C:\Users\rutvi\AppData\Local\Temp\pip-ephem-wheel-cache-gpp_fgzc\wheels\13\24\fc\18cea32a9d9687b835592d2ab9ea7aa5e9755eae818b638bb82
Successfully built math-quiz-package
Installing collected packages: math-quiz-package
Successfully installed math-quiz-package-1.0.0
```