Homework 2

https://github.com/abdallaheiid/dsss_homework_2

Task 3:

```
[(base) abdallaheid@Abdallahs-MacBook-Air dsss_homework_2 % git merge code_cleanu]
p
Updating eff11ab..9a1bb16
Fast-forward
 math_quiz/__init__.py        |  0
 math_quiz/math_quiz.py       | 69 ++++++++++++++++++++++++++++++++++++++++------------
 math_quiz/tests_math_quiz.py | 28 ++++++++++++------
 requirements.txt             |  0
 setup.py                     |  0
 5 files changed, 70 insertions(+), 27 deletions(-)
 create mode 100644 math_quiz/__init__.py
 create mode 100644 requirements.txt
 create mode 100644 setup.py
```

```python
def generate_random_int(min: int, max: int):

    """
    min: int
    max: int

    Returns a random integer between min and max.
    """

    # return a random integer between min and max
    return random.randint(min, max)


def choose_random_op():

    """
    Returns a random operator from the list ['+', '-', '*']
    """

    # return a random operator from the list ['+', '-', '*']
    return random.choice(['+', '-', '*'])


def operator(number1: int, number2: int, operator: str):

    """_summary_
    number1 (int): number 1
    number2 (int): number 2
    operator:
        _type_: returns the result of the operation between n1 and n2
    """

    # return the result of the operation between n1 and n2
    result = f"{number1} {operator} {number2}"
    sol = 0
    if operator == '+': sol = number1 + number2
    elif operator == '-': sol = number1 - number2
    else:
        sol = number1 * number2
    return result, sol
```

```python
def math_quiz():

    """_summary_
    """

    # initialize score and pi
    score = 0
    num_problems = 3

    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(num_problems):
        n1 = generate_random_int(1, 10); n2 = generate_random_int(1, 5); o = choose_random_op()

        PROBLEM, ANSWER = operator(n1, n2, o)
        print(f"\nQuestion: {PROBLEM}")

        try:
            useranswer = input("Your answer: ")
            useranswer = int(useranswer)
        except ValueError:
            print("Wrong input. Please enter an integer.")
            continue

        if useranswer == 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}/{num_problems}")
```

Task 4:

```python
class TestMathGame(unittest.TestCase):

    def test_generate_random_int(self):
        # Test if random numbers generated are within the specified range
        min_val = 1
        max_val = 10
        for _ in range(1000) (variable) min_val: Literal[1] om values
            rand_num = gener
            self.assertTrue(min_val <= rand_num <= max_val)

    def choose_random_op(self):
        # Test if random operators generated are within the specified range
        operators = ['+', '-', '*']
        for _ in range(1000):
            rand_op = choose_random_op()
            self.assertTrue(rand_op in operators)


    def test_function_C(self):
            test_cases = [
                (5, 2, '+', '5 + 2', 7),
                (8, 3, '-', '8 - 3', 5),
                (4, 6, '*', '4 * 6', 24),
            ]

            for x in test_cases:
                # TODO
                # Unpack the test case tuple into variables
                # Call the function operator(num1, num2, operator) and compare
                problem, answer = operator(x[0], x[1], x[2])
                # the result with the expected result for each test case
                self.assertEqual(x[3], problem)
                self.assertEqual(x[4], answer)

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

Task 5:

```
Building wheels for collected packages: math-quiz-Eid
  Building wheel for math-quiz-Eid (setup.py) ... done
  Created wheel for math-quiz-Eid: filename=math_quiz_Eid-1.0-py3-none-any.whl s
ize=7040 sha256=cfab4edfd2c2a288498b27a64b35a27bf2652b7914071b36f86ff6fde7f6c7fa
  Stored in directory: /private/var/folders/0d/5x_1jvxd02z1jfz1_nqw_r4h0000gn/T/
pip-ephem-wheel-cache-3u_gh50s/wheels/70/99/2b/c47a45ea46cac1fb06489578db4e44668
4d8f2476bf7d3a799
Successfully built math-quiz-Eid
Installing collected packages: pockets, coverage, sphinxcontrib-napoleon, sphinx
contrib-jquery, sphinx-click, pytest-cov, sphinx_rtd_theme, math-quiz-Eid
Successfully installed coverage-7.3.2 math-quiz-Eid-1.0 pockets-0.9.1 pytest-cov
-4.1.0 sphinx-click-5.0.1 sphinx_rtd_theme-1.3.0 sphinxcontrib-jquery-4.1 sphinx
contrib-napoleon-0.7
(base) abdallaheid@Abdallahs-MacBook-Air dsss_homework_2 %
```

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