Thursday Oct 3, 2024

Name:

Discuss and complete the following questions with the person nearest you. You **may** be asked to share your thoughts with the class.

1. Write a program that asks the user to enter two numbers and outputs whether or not the first number is evenly divisible by the second number. Note, you should use **main** and an additional function which handles the check of divisibility.

2. Write a program using a main function and auxiliary functions, which asks for the number of hours an employee works each week and outputs whether they work full-time (40 or more hours), half-time (exactly 20 hours) or part-time (less than 40 hours, but not exactly 20 hours).

3. Rewrite the following functions to use chained conditionals instead of nested conditionals

```python
def nestedA() -> None:
    a = int(input("a="))
    if a >= 50:
        print("Large")
    else:
        if (a < 10):
            print ("Small")
        else:
            print("Medium")
def nestedB() ->  None:
    i = int(input("i="))
    j = int(input("j="))
    if i > 5:
        if j > 15:
            print("A")
    else:
        if j > 15:
            print("B")
    if i > 10:
        print("C")
```

4. Create test cases that generate all the output.

```python
def mystery(students: int, desks: int, professors: int) -> None:
    if (students + professors) > desks:
        print( "There are not enough desks!")
    else:
        print("There are enough desks for everyone to have their own.")
        leftover = desks - (students + professors)
        if leftover >= students:
            print("There will be A LOT of empty desks.")
        elif leftover >= professors:
            print("There will be exactly",leftover,"empty desks.")
        elif leftover >= 1:
```

```python
            print("There will be at least one empty desk.")
        elif leftover < 1:
            print("We are good")
        else:
            print("There will not be any empty desks." )
def main() -> None:
    mystery(28, 100, 5) # test 1
main()
```

```
There are enough desks for everyone to have their own.
There will be A LOT of empty desks.
```