Thursday Oct 10, 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. Trace the code assuming that the user enters "yes", "no", "y", and "n" in that order. Will the program terminate? If your answer is no, then provide a fix.

```python
def get_yes_or_no(message: str) -> None:
    valid_input = False
    while not valid_input:
        answer = input(message)
        answer = answer.upper()
        if answer == 'Y' and answer == 'N':
            print(f"Valid input! Thanks for answerings {answer}")
            valid_input = True
        else:
            print("Invalid input! Please enter Y for yes and N for no.")
def main() -> None:
    get_yes_or_no('Do you like cats? Y)es or N)o: ')
main()
```

```
Invalid input! Please enter Y for yes or N for no.
Invalid input! Please enter Y for yes or N for no.
Invalid input! Please enter Y for yes or N for no.
Invalid input! Please enter Y for yes or N for no.
```

It's an infinite loop. Need to change line 6 to `or`

2. What is the output (if it's an infinite loop give the first four lines and then put infinite loop)?

```python
def stop_at_one(x: int) -> int:
    count = 0
    while x != 1:
        print(x)
        if x%2 == 1:
            x = 3*x + 1
        else:
            x = x //2
stop_at_one(3)
```

```
3
10
5
16
8
4
2
```

```python
def stop_at_one(x: int) -> int:
    count = 0
    while x != 1:
        print(x)
        if x%2 == 1:
```

```
            x = 2*x + 1
        else:
            x = x //2
stop_at_one(3)

3
7
15
31
Infinite loop
```

3. Discount Airlines, Inc. has asked you to write a Python program to help its customers calculate how many reward miles they have earned. Your program should repeatedly ask the user for the distance of a flight until the user enters 0. Then your program will output the total number of miles flown and whether the customer achieved bronze (less than 20,000 miles flow) or silver (at least 20,000 miles flow) status. Use a main function to return the reward status and an additional function to calculate the total miles.

```python
def calcDistance() -> float:
    more_flights = True
    total_distance = 0
    count = 0
    while more_flights:
        dist = float(input("What was the distance of flight " + str(count + 1)+"? "))
        if dist == 0:
            more_flights = False
        else:
            count += 1
            total_distance += dist
    return total_distance

def main() -> None:
    total_distance = calcDistance()
    print(f"You flew {total_distance} miles.")
    if total_distance < 20_000:
        print("You earned bronze status")
    else:
        print("You earned silver status")
main()
```