module3

November 24, 2025

Assignment "'Part 1: Write a program that calculates the total amount of a meal purchased at a restaurant. The program should ask the user to enter the charge for the food and then calculate the amounts with an 18 percent tip and 7 percent sales tax. Display each of these amounts and the total price.

Part 2: Many people keep time using a 24-hour clock (11 is 11am and 23 is 11pm, 0 is midnight). If it is currently 13 and you set your alarm to go off in 50 hours, it will be 15 (3pm). Write a Python program to solve the general version of the above problem. Ask the user for the time now (in hours) and then ask for the number of hours to wait for the alarm. Your program should output what the time will be on a 24-hour clock when the alarm goes off. "'

Git Repository https://github.com/izzy64/CSC500/blob/main/Module3

Pseudocode Part 1:

Get user-input meal cost (round to nearest cent)
calculate tip (multiply meal cost by tip rate)
calculate tax (multiply meal cost by tax rate)
calculate total (sum cost, tip, and tax)
print total

Part 2:

Get user-input hour validate hour (between 0 and 23)
Get user-input hours to wait
validate hours to wait (positive)
sum hour and hours to wait
calculate alarm time (modular division) calculate days distant (regular divison)
print alarm time and days distant

CODE

[2]:
```
# Part 1
print("Input the cost of your food: ")
cost = round(float(input()), 2) # Get user-input meal cost (round to nearest␣
 ↪cent)
tip_rate = .18
recommended_tip = round(cost*tip_rate, 2) # calculate tip (multiply meal cost␣
 ↪by tip rate)
sales_tax_rate = .07
```

```
sales_tax = round(cost*sales_tax_rate, 2) # calculate tax (multiply meal cost␣
 ↪by tax rate)
total = round(cost+sales_tax+recommended_tip, 2) #calculate total (sum cost,␣
 ↪tip, and tax)
print(f"After a meal costing ${cost}, sales tax ({int(sales_tax_rate*100)}%)␣
 ↪will be ${sales_tax} and an {int(tip_rate*100)}% tip is ${recommended_tip},␣
 ↪for a total cost of ${total}") # print total
```

```
Input the cost of your food:
After a meal costing $13.54, sales tax (7%) will be $0.95 and an 18% tip is
$2.44, for a total cost of $16.93
```

[ ]:
```
# Part 2
hour = -1
while hour < 0 or hour >= 24:
    print("Input the current hour of the day: ")
    hour = int(input()) # Get user-input hour
    if hour < 0 or hour >= 24: # validate hour (between 0 and 23)
        print(f"{hour} is an invalid input, try again")
wait = -1
while wait < 0:
    print("Input how many hours before the alarm should sound: ")
    wait = int(input())   # Get user-input hours to wait
    if wait < 0: # validate hours to wait (positive number)
        print(f"{wait} is an invalid input, try again")

hours_from_day_start = hour + wait # sum hour and hours to wait

alarm_time = hours_from_day_start % 24 # calculate alarm time (modular division)

days_distant = hours_from_day_start // 24 # calculate days distant (integer␣
 ↪divison)

if days_distant == 0:
    days_distant_text = "today"
elif days_distant == 1:
    days_distant_text = "tomorrow"
else:
    days_distant_text = f"{days_distant} days from today"

# print alarm time and days distant
print(f"If it's currently hour {hour}, setting an alarm for {wait} hours from␣
 ↪now means the alarm will sound at hour {alarm_time}, {days_distant_text}")
```

```
Input the current hour of the day:
Input how many hours before the alarm should sound:
If it's currently hour 22, setting an alarm for 6 hours from now means the alarm
will sound at hour 4, tomorrow
```