Week 3 critical thinking

CSC-500-1 Jason Rochau - 06/29/24

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# Pseudocode

## #alarm\_calculator

FUNCTION calculate\_alarm\_time

PROMPT user for current time in HH:MM format and store as current\_time\_str

PROMPT user for hours to wait and store as hours\_to\_wait

CONVERT hours\_to\_wait to integer

SPLIT current\_time\_str by ':' and store result in time\_parts

IF length of time\_parts is not equal to 2 THEN

PRINT "Invalid time format. Please use HH:MM format."

EXIT function

END IF

SET hours to integer value of time\_parts[0]

SET minutes to integer value of time\_parts[1]

IF hours < 0 OR hours > 23 OR minutes < 0 OR minutes > 59 THEN

PRINT "Invalid current time. Please enter a time in HH:MM format, where HH is between 0 and 23 and MM is between 0 and 59."

EXIT function

END IF

IF hours\_to\_wait < 0 THEN

PRINT "Invalid hours to wait. Please enter a non-negative number."

EXIT function

END IF

CALCULATE total\_minutes as (hours \* 60 + minutes) + (hours\_to\_wait \* 60)

CALCULATE alarm\_hours as (total\_minutes // 60) % 24

CALCULATE alarm\_minutes as total\_minutes % 60

PRINT "The alarm will go off at: " followed by formatted alarm\_hours:alarm\_minutes

END FUNCTION

CALL calculate\_alarm\_time

## #tip\_calaculator

FUNCTION calculate\_meal\_total

PROMPT user for food charge and store as food\_charge

CONVERT food\_charge to float

CALCULATE tip as 18% of food\_charge

CALCULATE sales\_tax as 7% of food\_charge

CALCULATE total\_price as sum of food\_charge, tip, and sales\_tax

PRINT "Bill Total: $" followed by food\_charge (rounded to 2 decimal places)

PRINT "Tip (18%): $" followed by tip (rounded to 2 decimal places)

PRINT "Sales Tax (7%): $" followed by sales\_tax (rounded to 2 decimal places)

PRINT "Total Price: $" followed by total\_price (rounded to 2 decimal places)

END FUNCTION

CALL calculate\_meal\_total

# Source Code

## #alarm\_calculator

def calculate\_alarm\_time():

    current\_time\_str = input("Enter the current time (in HH:MM format): ")

    hours\_to\_wait = int(input("Enter the number of hours to wait for the alarm: "))

    time\_parts = current\_time\_str.split(':')

    if len(time\_parts) != 2:

        print("Invalid time format. Please use HH:MM format.")

        return

    hours = int(time\_parts[0])

    minutes = int(time\_parts[1])

    if hours < 0 or hours > 23 or minutes < 0 or minutes > 59:

        print("Invalid current time. Please enter a time in HH:MM format, where HH is between 0 and 23 and MM is between 0 and 59.")

        return

    if hours\_to\_wait < 0:

        print("Invalid hours to wait. Please enter a non-negative number.")

        return

    total\_minutes = (hours \* 60 + minutes) + (hours\_to\_wait \* 60)

    alarm\_hours = (total\_minutes // 60) % 24

    alarm\_minutes = total\_minutes % 60

    print(f"The alarm will go off at: {alarm\_hours:02}:{alarm\_minutes:02}")

calculate\_alarm\_time()

## #tip\_calculator

def calculate\_meal\_total():

        food\_charge = float(input("What was the total for the meal: $"))

        tip = food\_charge \* 0.18

        sales\_tax = food\_charge \* 0.07

        total\_price = food\_charge + tip + sales\_tax

        print(f"\nBill Total: ${food\_charge:.2f}")

        print(f"Tip (18%): ${tip:.2f}")

        print(f"Sales Tax (7%): ${sales\_tax:.2f}")

        print(f"Total Price: ${total\_price:.2f}")

calculate\_meal\_total()

# Code Execution

## #alarm\_calculator

A screenshot of a computer program

Description automatically generated

## #tip\_calculator

A screen shot of a computer

Description automatically generated

# GitHub

## #alarm\_calculator

A screenshot of a computer

Description automatically generated

## #tip\_calculator

A screenshot of a computer

Description automatically generated