Case Study 1: Solving Real-World Problems using Computational Thinking

Real-World Problem

Our real-world problem is how can you ensure you have enough money for weekend activities while managing school day expenses such as transportation and food. The user is required to provide their allowance amount, the total number of days, and the total expenses for each day. The output will show the remaining amount of money after accounting for the specified number of days.

```
# function to get inputs from the user

def userInput():
    allowance = int(input("Enter the amount of allowance: ")) # total amount of given allowance
    total_days = int(input("Enter the total number of days: ")) # total number of school days
    expenses = int(input("Enter the total expenses per day: ")) # total amount of expenses each day

    return allowance, total_days, expenses # return values

# function for computing the allowance per day

def calculateAllowance(allowance, total_days, expenses):

    table = [0] * (total_days + 1) # initialize a list to store the remaining allowance for each day

    table[0] = allowance # sets the initial amount of allowance as the first element of the list

    for i in range(1, total_days + 1): # iterates each day until the last day
        table[i] = table[i - 1] - expenses # calculates the remaining allowance for each day

    return table[total_days] # returns the remaining allowance after all days

allowance, total_days, expenses = userInput() # call the function userInput() to get inputs from the user

remaining_allowance = calculateAllowance(allowance, total_days, expenses) # create the variable remaining_allowance and calls the function ca

print(f"The remaining amount of money after {total_days} days is: {remaining_allowance}") # print the result
```

```
Enter the amount of allowance: 1500
Enter the total number of days: 5
Enter the total expenses per day: 200
The remaining amount of money after 5 days is: 500
```