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Course: Open Source Programming

Code: ITMO 513

Module 3 Lab Assesment  
  
  
**Code**# Bank Account Interest Calculation Program

# Open Source Operating Systems - ITMD 413/513

# Lab 3 - Loops and Repetition

# Step 1: PIN Authentication

correct\_pin = "1234" # Set a 4-digit PIN

success = False # Track authentication status

# Allow user up to 3 attempts

for attempt in range(3):

user\_pin = input("Enter your 4-digit PIN: ")

if user\_pin == correct\_pin:

print("Access granted!\n")

success = True

break

else:

print(f"Invalid PIN. {2 - attempt} attempts remaining.\n")

# If authentication fails after 3 attempts, exit the program

if not success:

print("Too many incorrect attempts. Access denied.")

exit()

# Step 2: Get Bank Account Information

bank\_balance = float(input("Enter initial bank balance: "))

annual\_interest\_rate = float(input("Enter annual interest rate (as decimal, e.g., 0.04 for 4%): "))

# Display table header

print("\nMonth #\tInterest Amt\tBalance")

print("-" \* 30)

# Initialize total interest earned

total\_interest = 0.0

# Step 3: Calculate Interest for 12 Months

for month in range(1, 13):

interest = (annual\_interest\_rate / 12) \* bank\_balance # Monthly interest calculation

bank\_balance += interest # Update balance

total\_interest += interest # Track total interest

# Print monthly details in column format

print(f"{month}\t${interest:.2f}\t ${bank\_balance:.2f}")

# Step 4: Display Summary

print("\nSummary:")

print(f"Total Interest Earned: ${total\_interest:.2f}")

print(f"Final Balance After 12 Months: ${bank\_balance:.2f}")

**Output**

**A screenshot of a computer

Description automatically generated**

Figure : Screenshot of Code Output