



Practice 4-2

Automated Teller Machine(ATM)

Introduction

- Write an ATM Simulator that can withdraw NTD from the ATM.
- Users can select NTD = [1000, 3000, 5000, 10000, 20000, 30000] before withdrawing money.
- If the balance is insufficient to withdraw, the transaction is rejected with an auto “sign out”.
- **Warning: Do not use multi-form if you already knew it**

Environment Setup

- Account password: 000000
- Account balance: 10,000 NTD
- Status:
 - Sign out : Disable all user controls except for txtPassword and btnLogin
 - Sign in: Enable all user controls except for txtPassword and btnLogin

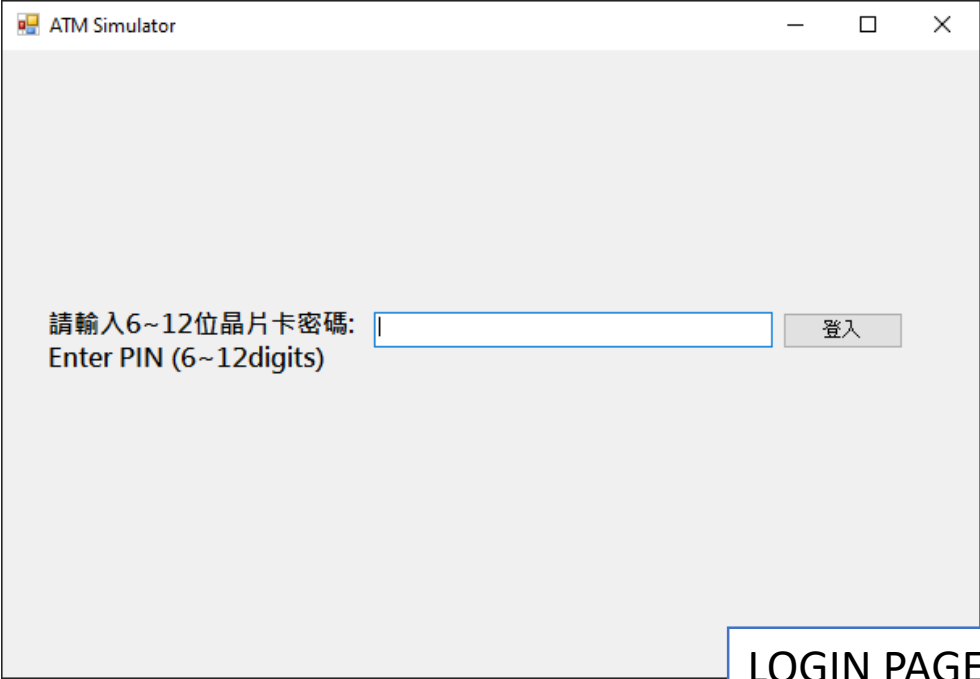
Procedure

- Enter account password to sign in.
 - Correct password: Hide txtPassword, btnLogin and show other user controls
 - Incorrect password: Clear the text of txtPassword
 - **Text of txtPassword should be “*”**
- Select a service [Withdraw / Top-up / Check Balance / Check History], each of these services should **show a log out button after user action.**
 - Withdraw:
 - If the balance is **insufficient** to withdraw, the **transaction is rejected,**.
 - If the balance is **sufficient** , **users can make their withdrawals, also record the withdrawals and remains to transaction history.**
 - Top-up: **Add the money** to your account, **also record the Top-up and remains to transaction history.**
 - Check Balance: Show the **account balance.**
 - Check History: Show all **transaction history.**
- This simulator should be able to generate the action of continuous money withdrawal.
 - Startup: NTD\$10,000
 - 1st withdrawal: \$5,000 NTD, remain: \$5,000 NTD, log out, then log in for 2nd withdrawal
 - 2nd withdrawal: \$6,000 NTD (The transaction should be rejected due to insufficient balance.)

Hint

- Newline in Windows environment : “\r\n”
- Use a global label with += string to add transaction record.
- You only need to record the transaction in this program execution.(i.e. No file I/O needed)
- **Warning: Do not use multi-form if you already knew it**

Requirement GUI (Login)

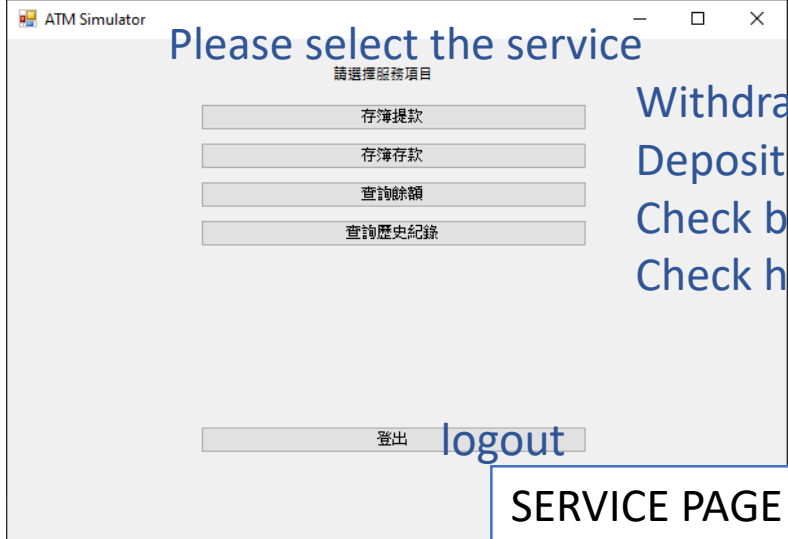


ATM Simulator

請輸入6~12位晶片卡密碼:
Enter PIN (6~12digits)

LOGIN PAGE

success



ATM Simulator

Please select the service
請選擇服務項目

存簿提款	Withdrawal
存簿存款	Deposit
查詢餘額	Check balance
查詢歷史紀錄	Check history

登出 **logout**

SERVICE PAGE

failed



ATM Simulator

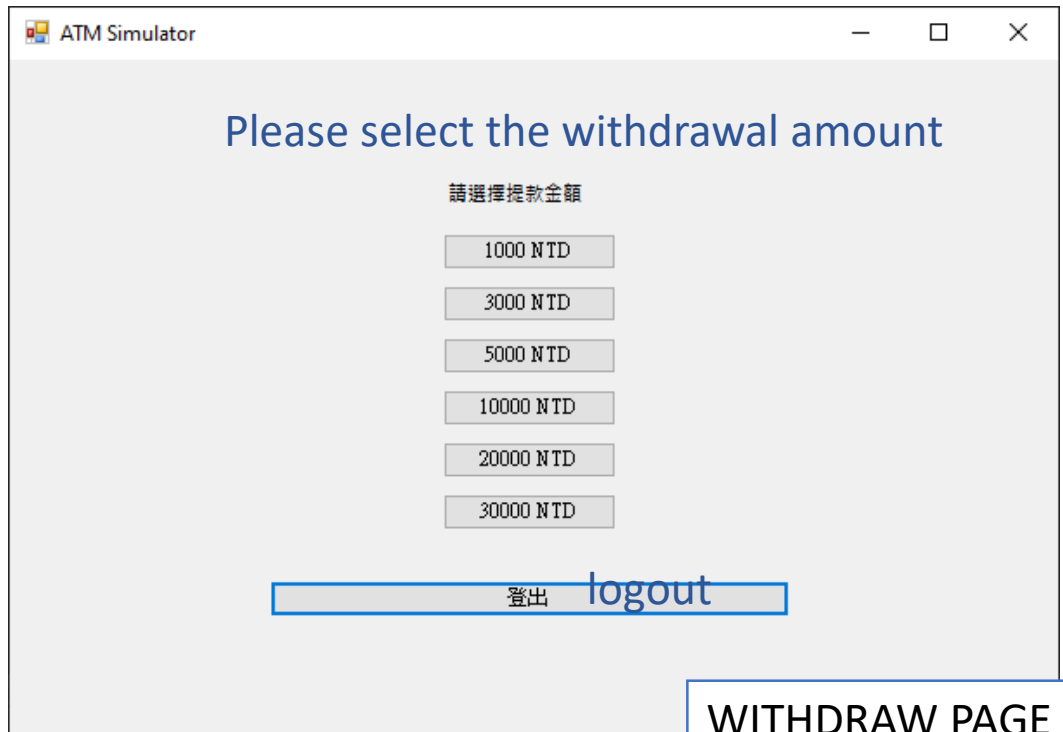
請輸入6~12位晶片卡密碼:
Enter PIN (6~12digits)

 login

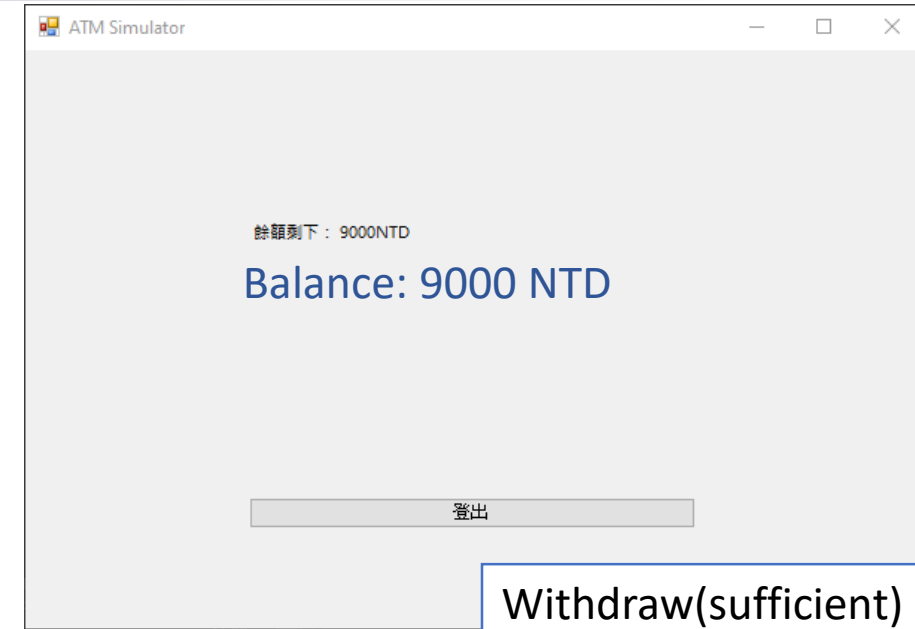
LOGIN PAGE

CLEAR TEXT

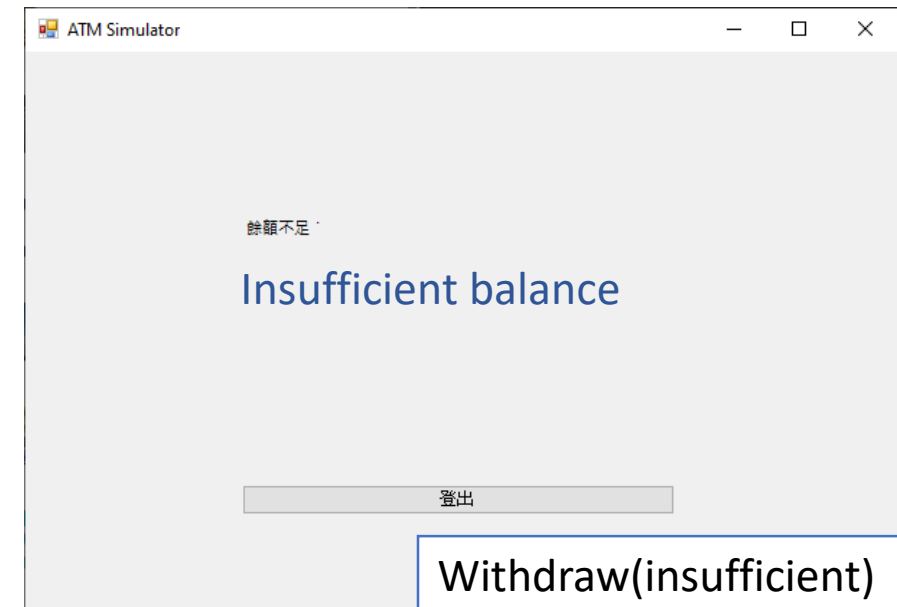
Requirement GUI (Withdraw)



WITHDRAW PAGE

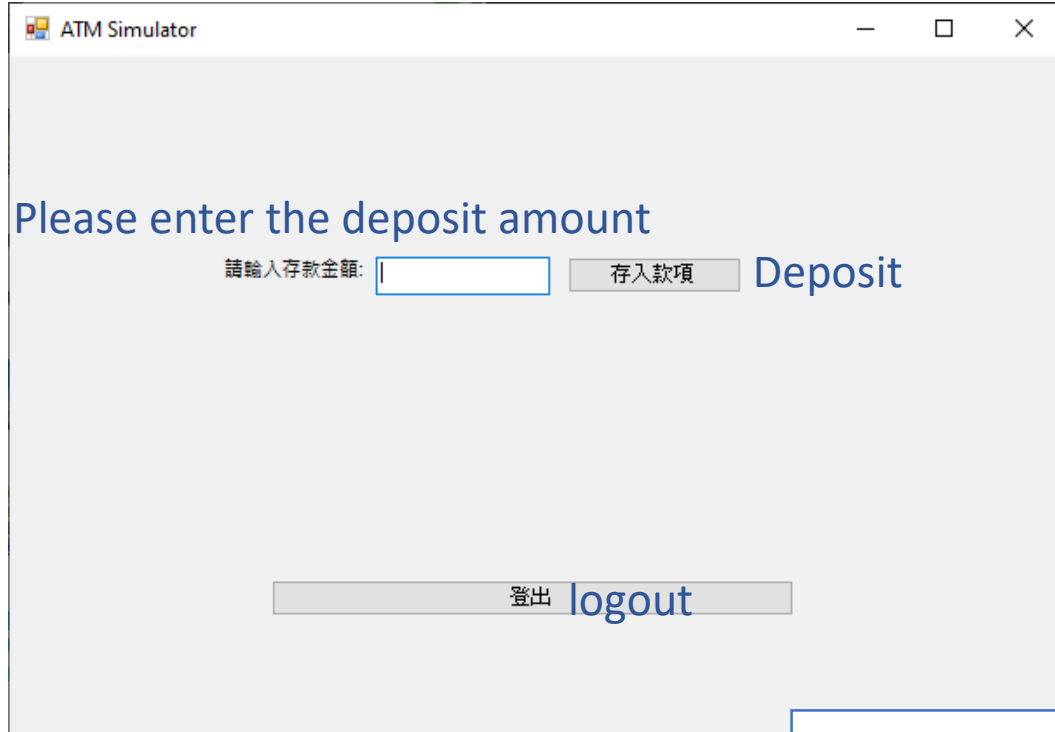


Withdraw(sufficient)



Withdraw(insufficient)

Requirement GUI (Top-up)



ATM Simulator

Please enter the deposit amount

請輸入存款金額:

存入款項 Deposit

登出 logout

TOPUP PAGE



ATM Simulator

餘額剩下: 10000NTD Balance: 10000 NTD

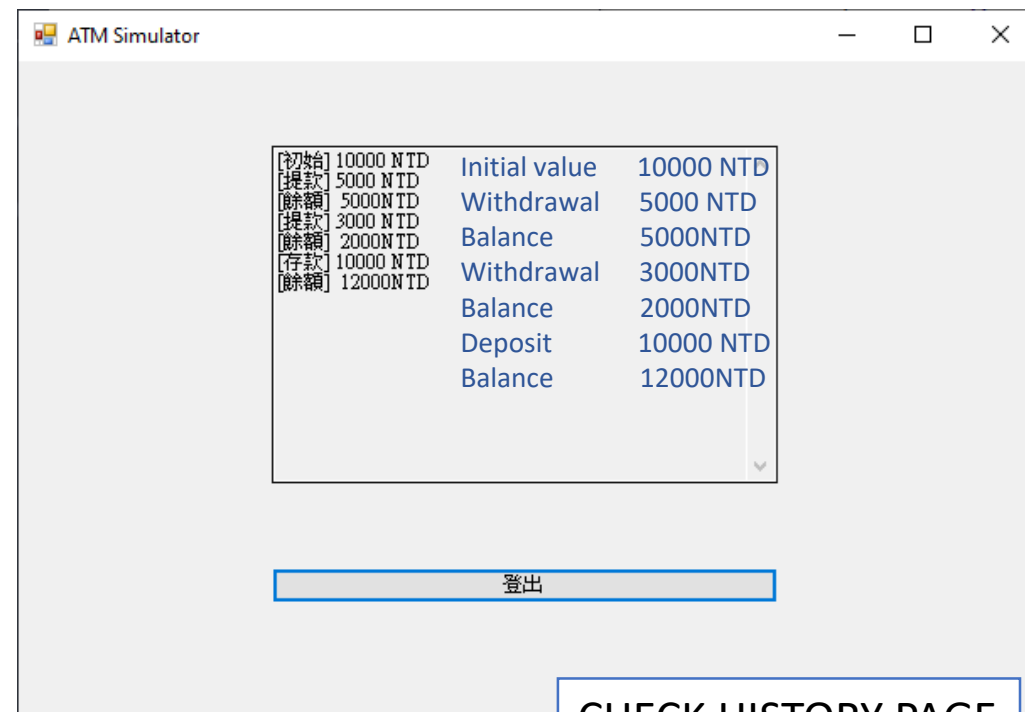
登出

CONFIRM TOPUP

Requirement GUI (Check Balance / History)



CHECK BALANCE PAGE



CHECK HISTORY PAGE