FAST – NUCES

THE ATM SYSTEM

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ABOUT OUR PROJECT:

The objective of this work is to simulate an Automated Teller Machine (ATM) service using Assembly Language Program (ALP) on EMU8086. The need for this work arises when a simulator with a basic interface can help people with less technical knowledge (Technologically Impaired People) to understand the features of an ATM. Also, implementing an application normally implemented with high-level languages in assembly language instead can help us to learn the fundamental concepts of a Microprocessor.

Outcomes & Applications:

The outcome of this work is a fully functioning simulation of an ATM that can simulate standard ATM services like withdrawal, deposit, check balance and pin or password change. Learning Assembly Language Programming and the usage of EMU8086 is quite important as Microprocessor is a Core Course in many universities. The use of assembly language programs helped us to directly interact with processor features and instructions while developing our ATM simulator. We were able to directly optimize instructions and memory for maximum computational and memory efficiency.

Techniques

• Arrays	Arrays for user IDs,user passwords and balances.
• Direct/Indirect Addressing	Offsets of arrays,and accessing indexes.
• Direct /Indirect Conditional Statements	Do-While/While loops Compare/Jump statements
• Procedures/Nested Procedures	Functions for Credentials,withdraw,deposit, transfer, display etc Use of PROTO/PROC AND INVOKE directives.
• Uses operator	To push registers in the stack.
• Built-in procedures	Gotoxy , GetTextColor , MsgAskBox etc.
• Bubble Sort	To sort the user balances.
• Inline Functions	Use of c++ alongside asm.

Libraries

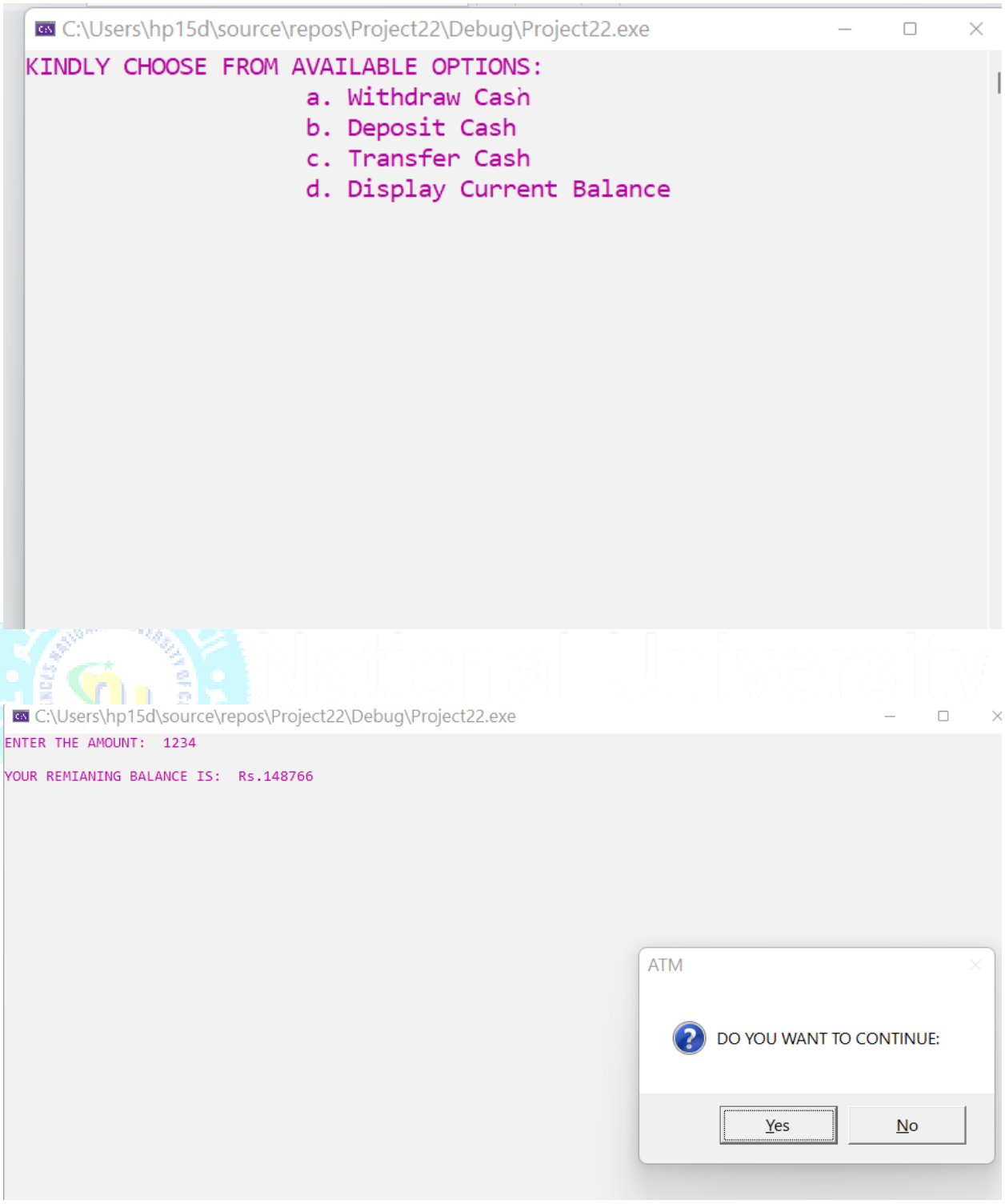
- INCLUDE Irvine32.inc
- #Include<iostream>

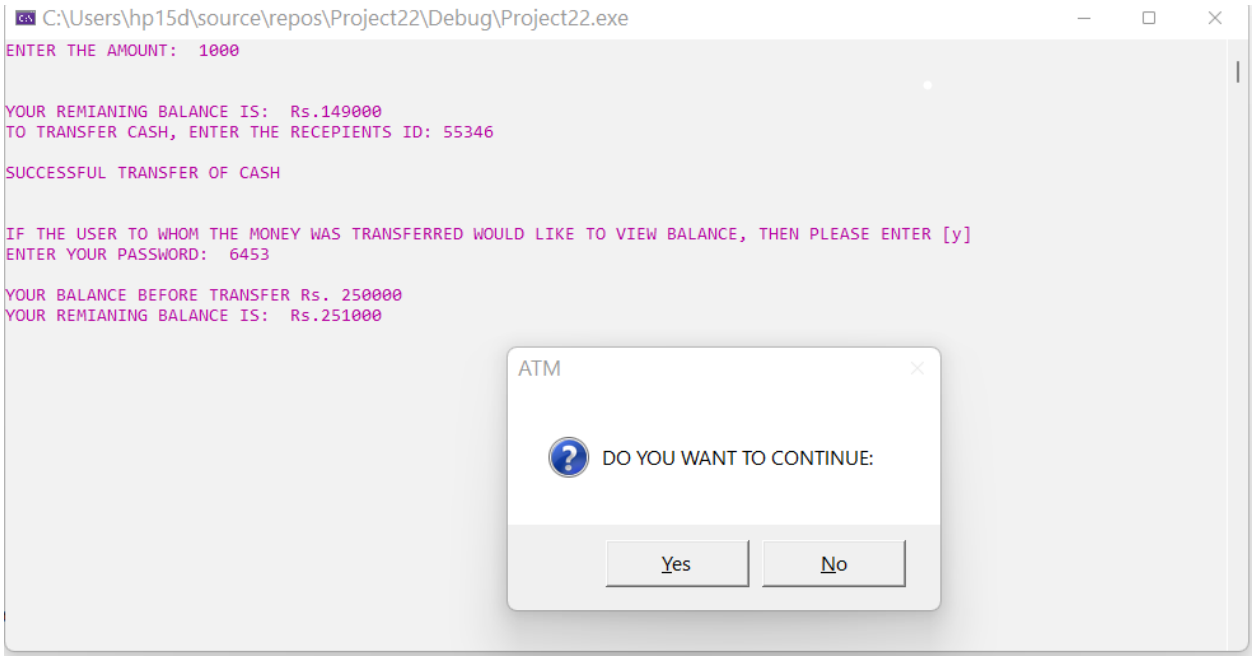
CONSOLE SNIPS:

```
[redacted]WELCOME TO THE ATM SYSTEM
Press any key to continue...
```

```
    ENTER YOUR ID:  55642
    ENTER YOUR PASSWORD:  1234

WRONG CREDENTIALS, PLEASE RE-ENTER CORRECT CREDENTIALS
    ENTER YOUR ID:
```


C:\Users\hp15d\source\repos\Project22\Debug\Project22.exe
KINDLY CHOOSE FROM AVAILABLE OPTIONS:
a. Withdraw Cash
b. Deposit Cash
c. Transfer Cash
d. Display Current Balance
C:\Users\hp15d\source\repos\Project22\Debug\Project22.exe
ENTER THE AMOUNT: 1234
YOUR REMIANING BALANCE IS: Rs.148766
ATM
DO YOU WANT TO CONTINUE:
Yes
No


C:\Users\hp15d\source\repos\Project22\Debug\Project22.exe
ENTER THE AMOUNT: 1000
YOUR REMIANING BALANCE IS: Rs.149000
TO TRANSFER CASH, ENTER THE RECEPIENTS ID: 55346
SUCCESSFUL TRANSFER OF CASH
IF THE USER TO WHOM THE MONEY WAS TRANSFERRED WOULD LIKE TO VIEW BALANCE, THEN PLEASE ENTER [y]
ENTER YOUR PASSWORD: 6453
YOUR BALANCE BEFORE TRANSFER Rs. 250000
YOUR REMIANING BALANCE IS: Rs.251000
ATM
DO YOU WANT TO CONTINUE:
Yes
No


C:\Users\hp15d\source\repos\Project22\Debug\Project22.exe
DATA OF BANK CUTOMERS
Customer IDs Balance (Rs)
55642 150000
55346 250000
55986 650000
55234 750000
55678 20000
Unsorted array:
150000 250000 650000 750000 20000
Sorted array:
20000 150000 250000 650000 750000