ATM machine

TEAM 24

Arwa Gad	52-6436
Mayar Sherif	52-0354
Maya Khaled	52-10470
Mohmed Ahmed Sameh El Said Samy El Far	52-17435
Ebram Fadl	52-18094
Mohamed Shafie	52-0766

Project overview

Our project is aimed at developing an ATM Machine Simulator using the Raspberry Pi Pico microcontroller, providing users with a realistic ATM experience while highlighting the capabilities of this powerful microcontroller. The simulator will include core ATM functionalities such as cash withdrawals, and PIN management.

The user will input his/her card on the machine then he/she will be able to enter the pin number of the card so the system will verify the pin number and give the user a feedback about the entered pin whether successful or failure. If a pin is successfully entered then the user will be able to withdraw money and to do that he/she will input the amount of money to withdraw. Once the user is done entering the amount then the motor will cash out the money and a successful transaction feedback will be generated for the user else if no money available then a failed transaction feedback will be given to the user indicating that the account has no enough money. And finally the story ends.

Tasks description

1- Detecting card entry: A sensor will be used to detect that a user entered a card and as a result the user can proceed to the next step
2- Pin input: The user can now enter their card pin number that consists of 4 digits on a keypad module and for each digit entered it will be displayed for the user on a 7-segment display
3- Pin verification: Once the user is done entering the pin the system will verify that pin whether successful or failed
4- Pin status feedback: Based on the system pin verification a buzzer will give the user feedback about whether the pin is correct or not and if correct then the user can proceed to the withdrawal step
5- Withdrawal amount: The keypad will be used by the user to determine the withdrawal amount
6- Money availability check: The system will check whether the amount chosen meets the minimum account balance or not
7- Cash delivery: if the withdrawal amount fulfills the minimum account balance, then a Green LED will light to indicate a successful transaction and the motor will run to simulate giving out the money to the user but if the withdrawal amount does not meet the minimum account balance then a red LED will light to indicate transaction failure

Required components:

1- Analogue sensor
2- Keypad module
3- 7-segment display
4- Buzzers
5- LEDs
6- motor