❖ Synopsis For Automatic Cold drink vending machine

Title: Automatic cold drink Vending Machine Using C++

Introduction:

The vending machine is a convenient and automated way to dispense goods without requirement of any handler. This project focuses on creating an Automatic Cold drink Vending Machine that accepts user input, handles transactions, and dispenses cold drink cans based on user selection. This system will simulate the vending process, managing stock, handling payments, and giving change if necessary.

Objective:

The primary objective of this project is to develop a software simulation of an automatic cold drink vending machine using C++. The machine will handle various tasks such as:

- Accepting and validating user input.
- Processing payment.
- Dispensing cold drink cans.
- Managing inventory and displaying the remaining stock.

Scope of the Project:

This project focuses on simulating a vending machine using the C++ programming language. The vending machine will:

- Handle multiple types of coins (e.g., 1, 5, 10 units).
- Allow users to select different flavours of cold drink and other varieties of cold drinks.
- Give proper change to the user after the transaction.
- Maintain and update the stock of cold drink cans based on purchases.

Methodology/Implementation:

The vending machine will be implemented using object-oriented programming principles in C++. The core components include:

- Classes for the vending machine, product (cold drink), and payment processing.
- Data structures (arrays or vectors) to store available cold drink flavors and their stock levels.
- Control statements to manage user input, process payments, and determine stock availability.

The vending machine will:

- Prompt users to choose a cold drink type.
- Display the price of the selected item.
- Accept coins and calculate if enough payment has been made.
- Dispense the cold drink and return change if applicable.

Hardware/Software Requirements:

- **Software**: C++ compiler (GCC/MinGW), IDE (e.g., Code::Blocks, Visual Studio).
- **Operating System**: Windows/Linux/macOS.
- **Libraries**: Standard C++ library for input/output operations.

Expected Outcomes:

By the end of this project, the vending machine simulation will be able to:

- Accurately manage user transactions.
- Dispense cold drink based on the user's selection.
- Provide change based on the amount entered.
- Maintain a record of the stock of cold drink cans and alert when stock runs low.

Limitations:

- The simulation does not support real monetary transactions.
- The project will only handle cold drink vending and won't be useful to other products.
- No graphical user interface (GUI) will be implemented; it will be a console-based simulation

Conclusion:

This project will demonstrate an understanding of C++ programming, including object-oriented design, input/output handling, and control structures. The Automatic Cold drink Vending Machine simulation will offer practical insights into how vending systems work and how software can be used to automate routine tasks. This project can be expanded further with features like advanced payment methods and support for other products in the future.

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