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For this project we focused on the display, the lights, returning change, and recording events to a log file. The design goals of this project were, primarily:

- ease of use & implementation, for convenience of everyone involved
- adaptability of hardware, in case hardware is adjusted or upgraded
- flexibility of software, so changes can be made easily

Different messages are displayed on the machine depending on its state. The design of the display uses a thread to manage the various messages displayed. This is because the message display is independent of the rest of the machine and runs until an event occurs (i.e. user inserts coins). When an event occurs, the thread is simply interrupted and handles the interrupt in an appropriate fashion.

Different coloured lights are also presented on the hardware, depending on the state of the machine. These classes are designed primarily to reduce repeated code. Each class overwrites the previous one and changes the current light. In this case, since we do not have physical hardware, a message is printed to the console instead.

Change is given based on the coins currently contained in the coin rack. It will always give as close to exact change as possible. It currently works for Canadian coins, but can easily be adapted for other denominations or credit cards. There is a function which calculates whether it is possible to make change, and then a separate function which handles the work of the change itself.

These events and others are recorded to a log file. The log file method takes in all the required information, such as the event, the time of the event, and so on, which is recorded. The information is passed to the method as a parameter, so that it is easy to change what information is ultimately logged. As well, the time of the event is logged when the event occurs instead of when it is written, ensuring that the correct time of the event is noted (in case there is a delay between the event and the actual writing).

In this way, we ensured that our design met all of our stated goals.