Suleman Bashir Baloch

Analysis of a Simulation : Challenge Problem
Vending Machine

For this assignment, I will be simulating a program which will allow a user to use a vending machine. In the vending machine, all the products are labeled with a specific number that is to be entered through the keypad for purchase of that specific product. The vending machine has a display center (that shows text) and a keypad with buttons 0 to 9 along with Yes, No and CANCEL buttons. The vending machine only uses cash/coins as a form of payment method.

Use Case 1: Check Price

1. The program will welcome the user by saying 'hello"
2. The program will prompt the user to enter the number of the product they want to purchase on the keypad
3. The user will check the specific number of the product he/she wants to purchase
4. The user will enter the number on the keyboard and press OK
5. The program will show the price of the selected product
6. The user will then decide whether to purchase the product or not

Use Case 2: Buy Item

1. If the user intends to purchase the product, he/she will enter the required amount (dollar bills or coins) into the vending machine through the bill acceptor or the coin insert
2. The program will display amount of money entered by the user after every insertion
3. Once the user has entered the required amount, he will type the specific number of the product that he/she wants to purchase on the keyboard
4. The program will check if the amount inserted is less than, equal to or greater the amount required for the the purchase of the product
5. If the amount inserted is less than the required amount, the program will display " Insufficient funds" and prompt the user to enter the amount further required
6. If the amount inserted is equal to the required amount, the program will display " transaction processing, PRESS cancel if you want to cancel".
7. If the amount inserted is greater than the required amount, the program will display " transaction processing, PRESS cancel if you want to cancel".
8. The program will calculate the change that is to be returned to user and return the change amount through the coin return

Variation : If the user doesn't enter the required amount after step 5, the program will wait for a few minutes and then return the inserted amount through the coin return.

Use Case 3 : Cancel request

1. If the user decides he no longer wants to purchase that product, he would cancel the request while the transaction is being processed by pressing the CANCEL button
2. The program will ask " Do you want to cancel this purchase? "
3. The user will press the yes button on the touchscreen if he wants to cancel
4. The program will display " Refund Processing "
5. The program will display " Request successfully canceled, Thank you "
6. The program will refund the amount of money through then Coin return

Variation : If you the user enters no in step 3, the program will continue with the purchase and display " Processing Transaction" and go ahead the step 8 mentioned in Use Case 2

Use Case 4 : Take Item

1. The program will prompt the motion sensors to push the purchased product to the pick up box
2. The user will pick up the purchased product from the pick up box