

1. The vending machine (VMC) system requirements are as follows:

The VMC dispenses goods: **(1)** very large candy (VC) at 15¢, **(2)** large candy (LC) at 10¢, and **(3)** a small candy (SC) at 5¢. *The vending machine only deals in nickels, and dimes.* The VMC gives the proper change after the product selection is made. The VMC must tabulate the amount being deposited. The following rule applies to the VMC's behavior:

- a) The VMC remains idle until a customer or owner begins to interact with the VMC. When a selection button is depressed the VMC indicates the required amount needed.
- b) If the full amount needed has been deposited then dispense the proper candy and display: Thank You!.
- c) If an insufficient amount (possibly zero) has been deposited then display: remaining amount needed.
- d) If an over amount has been deposited then dispense the proper candy and change and display: Thank You!.
- e) Finally, there is a special selection that will allow the customer to get a refund of all the deposited money (coin return).

Thus, once the customer *deposits coins* and makes a *selection* that matches the amount deposited (or more) the candy is dispensed and he/she will *retrieve the candy and change* (if applicable). The VMC owner *unlocks the VMC* to stock the candy and the change and retrieves the profits from the money bin. Once the maintenance activities are completed, the owner will *lock the VMC*. Selection means that a button is selected / deselected. *Given the system requirements (above) for a vending machine, describe the system using Zed.*

