UPPSALA
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Model Based Design of Embedded Systems
1DT059
Report 2A

Simulink Matlab

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Vending Machine:

A model of a vending machine has been designed based on the specifications. We welcome the user and then ask them to enter coins(push buttons). Once this is done the user can then click on order to place an order and has an option to buy 2 products A and B. A costs 8Kr and b costs 6Kr. The machine accepts 1Kr, 5Kr and 10Kr as input money. The balance is displayed for the customer. The customer can then choose to order more by clicking the order button once again, or can finish the purchase by pressing the finish button. The user then gets money back if there is any balance remaining or the machine would reset for the next customer. If the user has inserted less money then the machine would prompt the user to insert more coins to complete the purchase. You can interact with the machine by adding different cash amounts. Pressing the order button to place the order, Options A and B for the user to purchase and a finish button that can end the purchase.

Microwave Oven:

A simple state machine of a microwave has been designed. The microwave has 2 knobs for input which is the time and the power to be entered. Once the time has been entered the user and the start button is pressed, cooking starts and the microwave turns on. Now the user has the liberty to change the time at any moment during the simulation. A down-counter has been designed to count to 0. Once the count reaches zero a sound is triggered and the LED blinks. The sound for the program has some error hence an LED is blinked to mimic an alert. The oven starts to operate only if the door is closed. At any point in time if the door opens the oven turns off. The stop button also acts as a reset button if pressed twice. The oven checks for 300 seconds of inactivity and then resets all the oven.

The models have been attached for simulations.