

ESSENTIAL FUNCTIONAL TESTS

1. **To check VALID BUTTON:** SUPPLIER has provided ITEMS, COUNT and COST for those respective ITEMS and made valid HIGH. The newer values which are assigned by the SUPPLIER will not take effect in between when the USER has pressed the SELECT BUTTON. The USER must finish the transaction to buy the PRODUCT and then only the newer values will take effect when the valid is made HIGH.
2. SUPPLIER turns the valid OFF so that USER does their transaction of buying a product and verify the states of the FSM are changing normally to get the PRODUCT to the USER which the USER normally intends to **buy [IDLE-BUTTON-PRODUCT state transitions normally happen]**.
3. **The USER has inserted coins and pressed multiple BUTTONS to buy a single ITEM.** In this scenario the transaction must not be processed the STATE must remain in IDLE state.
4. **To check the SOFT RESET:** USER has pressed the BUTTON to select an ITEM but has LESS money to buy an ITEM or has messed up by pressing a different ITEM BUTTON of which the cost is more; the USER has an option to do a SOFT RESET in our design until the USER has not pressed the SELECT BUTTON. To check whether the values have become zero for the USER transaction when the SOFT RESET was made.
5. **To check the HARD RESET:** The hard-reset scenario is as if SUPPLIER will put the new values for COUNT and COST for ITEMS that they will supply.
6. **In the successive transitions the USER pressed a different button** in the BUTTON STATE or PRODUCT STATE as oppose to IDLE STATE.
7. **Count getting subtracted properly:** For a single ITEM which the USER intends to buy and has pressed the respective BUTTON. The count must be reduced for the respective transaction.
8. **The SUPPLIER tries to put the cost of an ITEM more than 12.75 USD.**
9. **The USER tries to insert coin of different denomination [QUARTER, NICKEL AND DIME]** to buy the same PRODUCT until the coins aren't enough to buy the product.
10. **To check the BALANCE getting add up:** user continuously puts coins and is in the button state
11. The USER has inserted coins for ITEM1 thus a transition to BUTTON STATE happens from IDLE. The balance becomes is less, so the state transition is again back to IDLE. What if the USER pressed a different BUTTON say for ITEM2 which the USER can buy? Here, PRODUCT for ITEMS2 must come out.