**INTRO TO VLSI v. praneeth & G.Jashwanth**

**FINAL PROJECT REPORT -1**

**Problem Statement:**

Vending machine accepts inputs sequences of one rupee or two rupee. So the product comes out when the amount reaches Rs 3 or more along with change. When cancel button is pressed the total amount is returned back.

**Block Diagram:**

Change (returned money)

Product is returned

By the vending machine

Vending machine

Cancel

button

Input money

**Flow Chart:**

When Input bit is 0, it means Rs 1 is given to vending machine. Input1 means RS 2

Bits change (money remaining)

1. Rs 0
2. Rs 1
3. Rs 2

In the Fsm below First bit represent cancel button ,second bit as input, third bit as output, last two bits as change(money remaining).

1/x/0/10

1/x/0/01

S0( initial state )

1/x/0/00

0/0/1/00

0/1/1/00

0/1/0/10

0/0/0/01

0/1/1/01

S2(money is Rs 2 In wending machine)

S1(money is Rs 1 in vending machine)

0/0/0/10

**Description of the Flow chart:**

When ever the cancel button is pressed s0 state is reached, and change left is returned. If we Re 1(0 bit) as input it will reach state S1.if we give Rs2 (1 bit) S2 state is reached .if we give Rs 2 at S1 we will reach S0 state and product will come out with 0 change(money returned). Else if we give Rs 1 at S1 we will get to S2 state (with a change of Rs 2).if we give Rs 1 at S2 we will reach S0 and the product will come out with 0 change, else if we give Rs 2 at S2 we will reach S0 and product will come with Rs 1 change left.