Stuck-at()

{

Store all the fault free gates in a Linked List

head = First Gate

numGates = Total number of gates in the circuit

count = 0 //used to count the gates

FaultID = 0 // unique id for each fault

while(count<numGates)

{

currentGate = head

Pos =count

While(pos >0 ) //go till the faulty gate

{

currentGate = currentGate->next

pos--

}

numInputs = number of Inputs for the currentGate

i= 1

for(i= 1 to 2\*numInputs) //iterate twice the number of inputs, once for sa0 & sa1

{

If(i<= numInputs)

{

If(i = 1)

faultyLine = currentGate->input1

If(i = 2)

faultyLine = currentGate->input2

If(i = 3)

faultyLine = currentGate->input3

Type of fault = 1

}

else

{

If(i = numInputs + 1)

faultyLine = currentGate->input1

If(i = numInputs + 2)

faultyLine = currentGate->input2

If(i = numInputs + 3)

faultyLine = currentGate->input3

Type of fault =0

}

headFault = currentGate

do

{

If(currentGate is in Faulty Line)

Add currentGate to faulty Linkedlist

currentGate = curreGate->next

} while(currentGate is not LastGate);

Assign unique numbers to each faulty and fault free variables

If(Type of fault = 1)

Force the faulty variable to 1 in the cnf

Else

Force the faulty variable to 0 in the cnf

Generate the cnf for Fault Free, Faulty and exor of the thses two circuits

Force the exor output to be 1 in the cnf

Solve the Cnf using SAT to get the Test Vectors(TVs)

Tag these TVs with FaultID

FaultID++

}

}

//Select the minimum TVs which covers all the FaultIDs

minTV = []

AllTV = [Total test vectors tagged to all the FaultIDs]

Uncovered = Set of all the FaultIDs

While(Uncovered is not empty)

{

TV = Select a Test Vector from AllTV that covers maximum number of FaultIDs in Uncovered

Add TV to minTV

Remove faultIDs covered by TV from Uncovered

}

}