Assignment-2

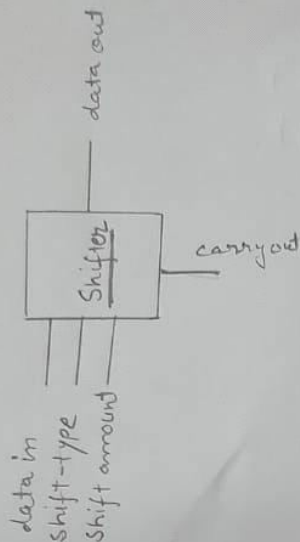## (Subtask-5)

Name=Monu

Entry No.= 2020CS50432

- Shifter folder has only circuit for shifter.

- Multicycle with shifting unit is in separate folder.
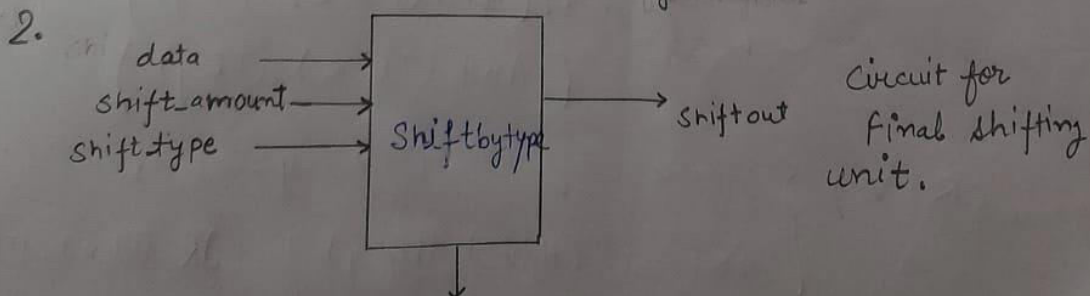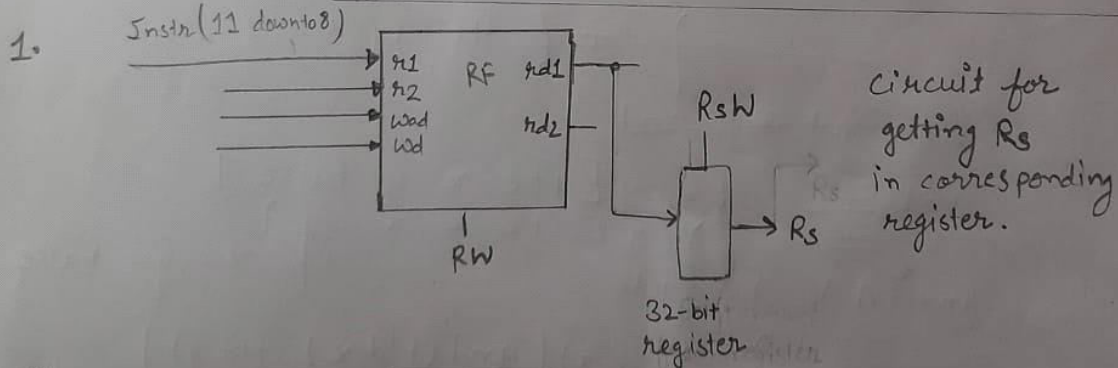
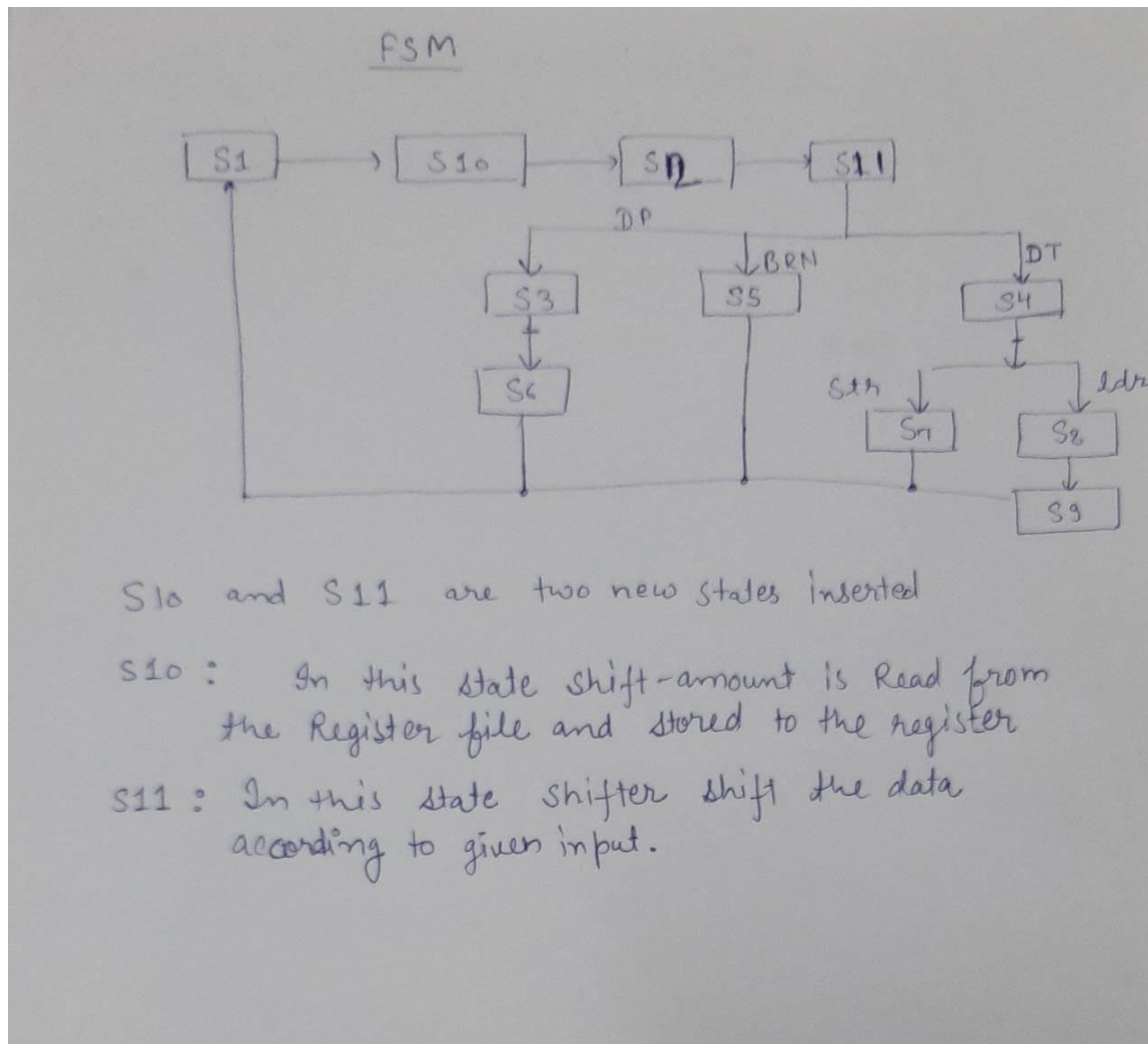## Glue logics for shift-type and shift amount :

shift-type ⇐ • ROR when $\left(\begin{array}{c}instr type = DP \\ and\ field = Imm\end{array}\right)$,

         • Instr (6 downto 5) when (instr type = DP or DT and field ≠ Imm),
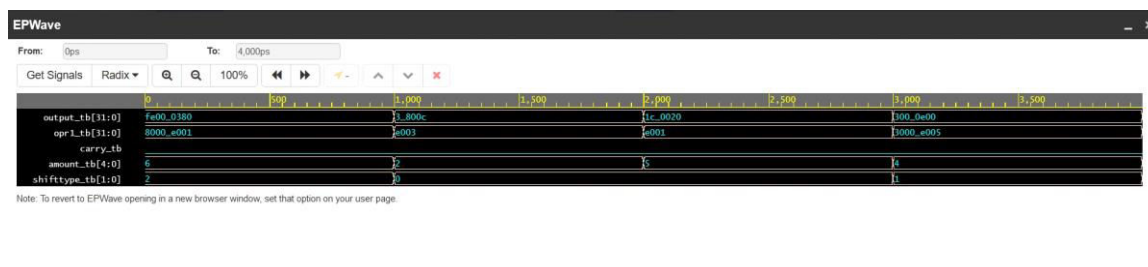
         • None . otherwise

shift amount ⇐

• Instr (11 downto 7) when (Instr (5) = '0' and field ≠ Imm. and Instr = DP or DT)

• Rs [4 downto 0) when (Instr(5) = '1' and field ≠ Imm and Instr = DP or DT)

• Instr (11 downto 8) & "0" when (field = Imm and Instr = DP

• "00000" otherwise

Shifter

data out

carry out

data in
shift-type
shift amount

1.

Instr (11 downto 8)

r1
r2
wad
wd

RF

rd1
rd2

RW

RsW

32-bit register

→ Rs

Circuit for getting Rs in corresponding register.

2.

data
shift_amount
shift type

Shiftbytype

→ shift out

Circuit for final shifting unit.

FSM

S1o and S11 are two new states inserted

S1o : In this state shift-amount is Read from the Register file and stored to the register

S11 : In this state shifter shift the data according to given input.

EpWave Response:

1. For shifter

2. For circuit

Note: To revert to EPWave opening in a new browser window, set that option on your user page.