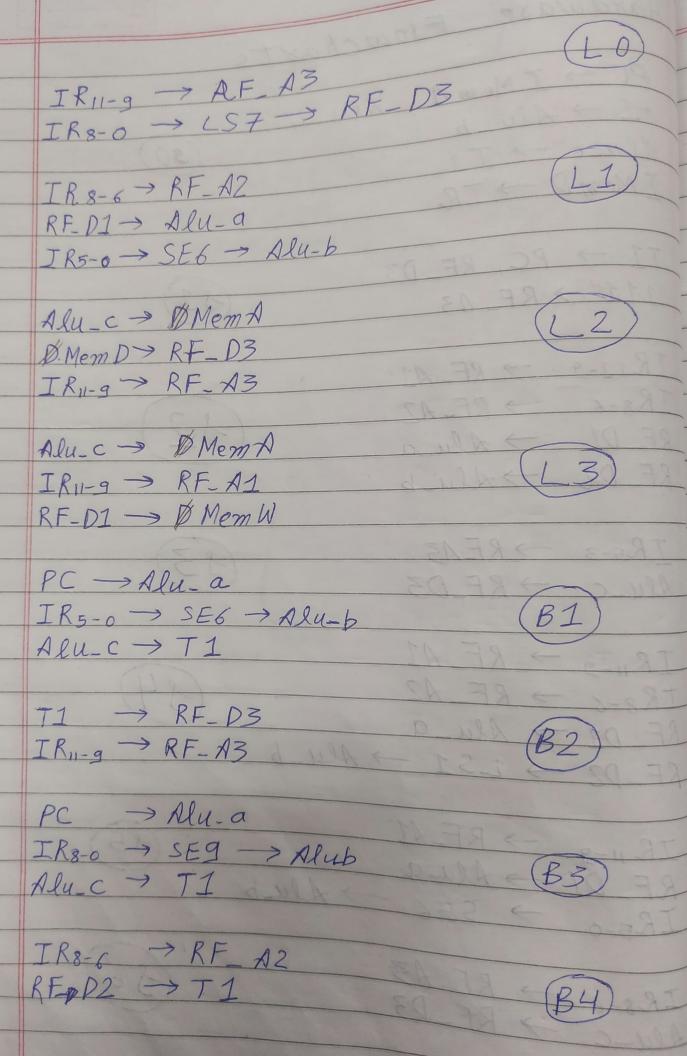
FF309 PROJECT 201070044 GROUP: Kanak Yadav 200100107 Pal Abhijeet Manaj 20d070062 Rahul Mimsot 200070010 Ashok Kumos Jat Components Vsed 1) LS1 2) LS 7 3) SE 6 4) SE9 5) RF 6) PC 7) T 1 9) Flag 10) ALU 11) MUX-16 12) MUX-3

Hardware Flowcharts PC - I Mem A, Alua +1 -> Alu-b Alu-c > TI I Mem D -> IR T1 -> PC, RF\_D3 1111" → RF. A3 IR11-9 -> RF\_A1 (32) IR8-6 -> RF-AZ RF\_DI -> Alu\_a RF\_DZ -> Alu\_b (33) TR5-3 -> RF-A3 Alu-c > RF\_D3 IR11-9 -> RF\_A1  $\begin{array}{c} IR_{8-6} \rightarrow RF\_A2 \\ RF\_D1 \rightarrow Alu\_a \end{array} \qquad \begin{array}{c} (94) \\ \end{array}$ RF-D2 -> LSI -> Alu-b  $\begin{array}{c} IR_{11-9} \rightarrow RF-AI \\ RF-DI \rightarrow Alu-a \end{array} \qquad \begin{array}{c} 35 \end{array}$ IR5-0 > SE6 -> Alu-b (36) IR8-6 -> RF-A3 Alu-c -> RF\_D3



IRII-9 -> RF\_A1 RF\_DI >Alu\_a TRO-0 > SE9 > Alu-b  $Alu-C \rightarrow T1$ IRH-9 > RF-AI RF\_DI -> TI T1 -> MemA, Alu\_a Mem D -> To2  $+1 \longrightarrow Alu-b$ Alu-c - TI T1 -> BMemA, Alu-a T2 -> BMemW +1 -> Alub Alu-c > T1

State Sequence 50 > 51 > 52 -> 53 Instructions ADD 50 >51 if Cis set s2 >5 ADC else ib sors1 if Z is set 52 +s3 ADZ else 1b 50 >51 -> 54 -> 53 ADL s0->s1->55->56 ADI 50->51->52->53 NDU 50->51 if C is set 52-352 NDC else ib 90-151 if Z is set s2->53 NDZ elseib LHI 50->51->20 50->51 -> L1 -> L2 LW SW 50->51->11->13 IM so>s1 depends on the lower SM so->s1 byte of IR. BEQ sors1 752 if Zisset B1 else ib JAL s0+s1 +B2 +B3 + 51 JLR s0->s1->B2->B4->s1 JRT 50->51 ->B5->B6->51