CS 230 Tut 7 Solutions

Start with some code as (1) ID/EX->62 tron WEWIND to Hist intent of In slides (slide7) -1- 20m find from reg-reg to reg-reg BX/MEM FWAA Add this condition at the end: if ((IF/ID.Rs == EX/MEM.Rt) & & Similar for Fud B - replace (EX/MEM, Mem Rd ==1)) RI with Rt FwdA = 01- can be combined (2)If ((IF/ID.Rs == ID/Ex. RF) LL with previous if (\$D/Ex. Mem Rd ==1)) Conditions - the STALL if case will STALL be satisfied during the first time the dependent regrees Instruction is in ID - the forwarding if care will be satisfied during the 2nd time. Reg File (no fird) L' additional (3) Comparator in 115 sts From EX/MEMp of branch (K-2)K-1 mill conse Fwd I a stall K-3 -> no funding needed - vid reg file C Similar mux for second input too EX/MEM if ((chierent, Rs == 15/fex. Rd) && (5) if ((IF/ID.R) == ID/EX.Rd) (FATASX. Regur == 1) && (ID/EX, Regur==1) && (IDIBX. Mum Rd==0)) (FALX, Mem Rd == 0)) STALL = O Fred 1=1 else Fud 1=0 Similar for Ford 2, replace Romits Rt I Invalid operale triggers in Ce. 3

lw IF 1) EX MEM WB walled whend, exception of Invalid opcode exception hardles is fetched, CCL also detects invalled op wide IF ID

misaligned mam exception which takes precedence