ALU
EX_MEM
aluToDM
Data_Memory
MEM_WB
memToReg
Registers
ID_EX
ForwardingUnit
ForwardToData1
ForwardToData2
VALU_Control
VALU
MUX_ALUSrc
PCImmExtend
shiftLeft
AddSum
pcSelect
Add_PC
PC
Instruction_Memor
HazradDetect
IF_ID
Sign_Extend
Control
MUX_Control
ALU_Control
ALU.Zero_o -> EX_MEM.zero_i
ALU.data_o -> EX_MEM.ALUResult_i
ForwardToData1.data_o -> ALU.data1_i
VALU.v_o -> EX_MEM.VALUResult_i
EX_MEM.ALUResult_o -> ForwardToData1.EX_MEM_i
EX_MEM.RDaddr_o -> ForwardingUnit.EX_MEM_RD_i
EX_MEM.RegWrite_o -> ForwardingUnit.EX_MEM_RegWrite_i
EX_MEM.MemToReg_o -> MEM_WB.MemToReg_i
EX_MEM.RDData_o -> MEM_WB.RDData_i
EX_MEM.RDaddr_o -> MEM_WB.RDaddr_i
EX_MEM.RegWrite_o -> MEM_WB.RegWrite_i
EX_MEM.MemRead_o -> Data_Memory.MemRead_i
EX_MEM.MemWrite_o -> Data_Memory.MemWrite_i
aluToDM.data_o -> Data_Memory.addr_i
EX_MEM.VALUResult_o -> aluToDM.data2_i
EX_MEM.ALUResult_o -> aluToDM.data1_i
EX_MEM.RDData_o -> Data_Memory.data_i
aluToDM.data_o -> MEM_WB.ALUResult_i
Data_Memory.data_o -> MEM_WB.DataMemReadData_i
MEM_WB.RDaddr_o -> ForwardingUnit.MEM_WB_RD_i
MEM_WB.RegWrite_o -> ForwardingUnit.MEM_WB_RegWrite_i
MEM_WB.ALUResult_o -> memToReg.data1_i
MEM_WB.DataMemReadData_o -> memToReg.data2_i
MEM_WB.MemToReg_o -> memToReg.select_i
EX_MEM.ALUResult_o -> ForwardToData2.EX_MEM_i
memToReg.data_o -> Registers.RDdata_i
ForwardToData2.data_o -> EX_MEM.RDData_i
MEM_WB.RDaddr_o -> Registers.RDaddr_i
MEM_WB.RegWrite_o -> Registers.RegWrite_i
MUX_ALUSrc.data_o -> ALU.data2_i
memToReg.data_o -> ForwardToData1.MEM_WB_i
memToReg.data_o -> ForwardToData2.MEM_WB_i
Registers.RTdata_o -> ID_EX.RDData1_i
Registers.RSdata_o -> ID_EX.RDData0_i
ID_EX.MemToReg_o -> EX_MEM.MemToReg_i
ID_EX.MemWrite_o -> EX_MEM.MemWrite_i
ID_EX.RegDst_o -> EX_MEM.RDaddr_i
ID_EX.RegWrite_o -> EX_MEM.RegWrite_i
ID_EX.inst_o -> EX_MEM.instr_i
ID_EX.pc_o -> EX_MEM.pc_i
ID_EX.MemRead_o -> EX_MEM.MemRead_i
ALU_Control.ALUCtrl_o -> ALU.ALUCtrl_i
ForwardingUnit.ForwardA_o -> ForwardToData1.select_i
ForwardingUnit.ForwardB_o -> ForwardToData2.select_i
ID_EX.RSaddr_o -> ForwardingUnit.ID_EX_RS_i
ID_EX.RDData0_o -> ForwardToData1.data_i
ID_EX.RTaddr_o -> ForwardingUnit.ID_EX_RT_i
ID_EX.RDData1_o -> ForwardToData2.data_i
ForwardToData1.data_o -> VALU.v1_i
VALU_Control.VALUCtrl_o -> VALU.VALUCtrl_i
MUX_ALUSrc.data_o -> VALU.v2_i
ForwardToData2.data_o -> MUX_ALUSrc.data1_i
ID_EX.SignExtended_o -> MUX_ALUSrc.data2_i
IF_ID.IF_ID_inst_o -> Registers.RSaddr_i
IF_ID.IF_ID_inst_o -> Registers.RTaddr_i
ID_EX.ALUSrc_o -> MUX_ALUSrc.select_i
PCImmExtend.data_o -> ID_EX.pcEx_i
IF_ID.pcIm_o -> PCImmExtend.data0_i
IF_ID.inst_o -> ID_EX.inst_i
IF_ID.pc_o -> ID_EX.pc_i
ID_EX.MemRead_o -> HazradDetect.ID_EX_MemRead_i
IF_ID.IF_ID_inst_o -> HazradDetect.ID_EXrd_i
IF_ID.IF_ID_inst_o -> HazradDetect.IF_IDrs1_i
IF_ID.IF_ID_inst_o -> HazradDetect.IF_IDrs2_i
HazradDetect.Hazard_o -> IF_ID.hazard_i
IF_ID.IF_ID_inst_o -> ID_EX.RSaddr_i
IF_ID.IF_ID_inst_o -> ID_EX.RTaddr_i
Sign_Extend.data_o -> ID_EX.SignExtended_i
IF_ID.IF_ID_inst_o -> Control.Op_i
HazradDetect.Hazard_o -> MUX_Control.Hazard_i
IF_ID.IF_ID_inst_o -> Sign_Extend.data0_i
IF_ID.IF_ID_inst_o -> MUX_Control.RegDst_i
Control.immSelect_o -> Sign_Extend.select_i
Control.MemRd_o -> MUX_Control.MemRead_i
Control.MemToReg_o -> MUX_Control.MemToReg_i
Control.MemWr_o -> MUX_Control.MemWrite_i
Control.RegWrite_o -> MUX_Control.RegWrite_i
Control.ALUOp_o -> MUX_Control.ALUOp_i
Control.ALUSrc_o -> MUX_Control.ALUSrc_i
MUX_Control.ALUOp_o -> ID_EX.ALUOp_i
MUX_Control.ALUSrc_o -> ID_EX.ALUSrc_i
MUX_Control.MemRead_o -> ID_EX.MemRead_i
MUX_Control.MemToReg_o -> ID_EX.MemToReg_i
MUX_Control.MemWrite_o -> ID_EX.MemWrite_i
MUX_Control.RegWrite_o -> ID_EX.RegWrite_i
MUX_Control.RegDst_o -> ID_EX.RegDst_i
ID_EX.ALUOp_o -> ALU_Control.ALUOp_i
PCImmExtend.data_o -> shiftLeft.data_i
shiftLeft.data_o -> AddSum.data2_i
IF_ID.pc_o -> AddSum.data1_i
AddSum.data_o -> pcSelect.data2_i
Add_PC.data_o -> pcSelect.data1_i
pcSelect.data_o -> PC.pc_i
PC.pc_o -> Add_PC.data1_in
HazradDetect.Hazard_o -> PC.hazardpc_i
PC.pc_o -> IF_ID.pc_i
PC.pc_o -> Instruction_Memory.addr_i
Instruction_Memory.instr_o -> IF_ID.inst_i