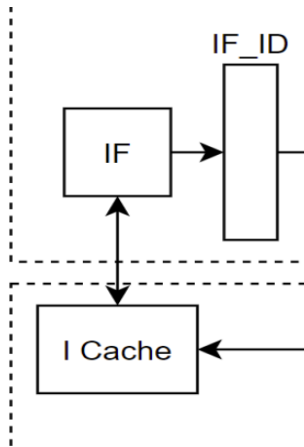
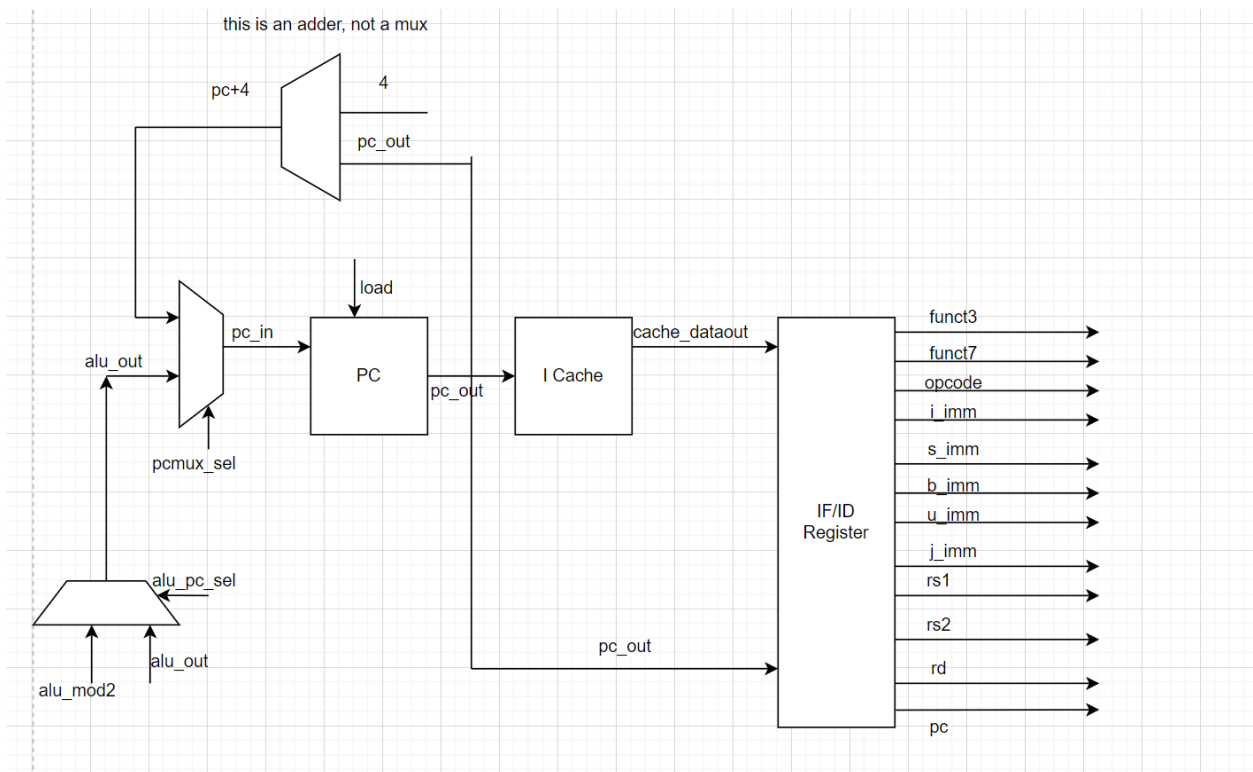


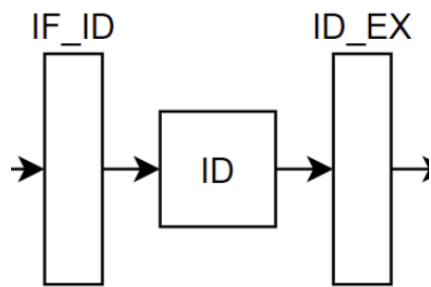
## Part 1: Datapath

Since compressing all hardware into one giant diagram will be too complex to draw and unclear to see, we decided to separate the whole datapath into several pieces.

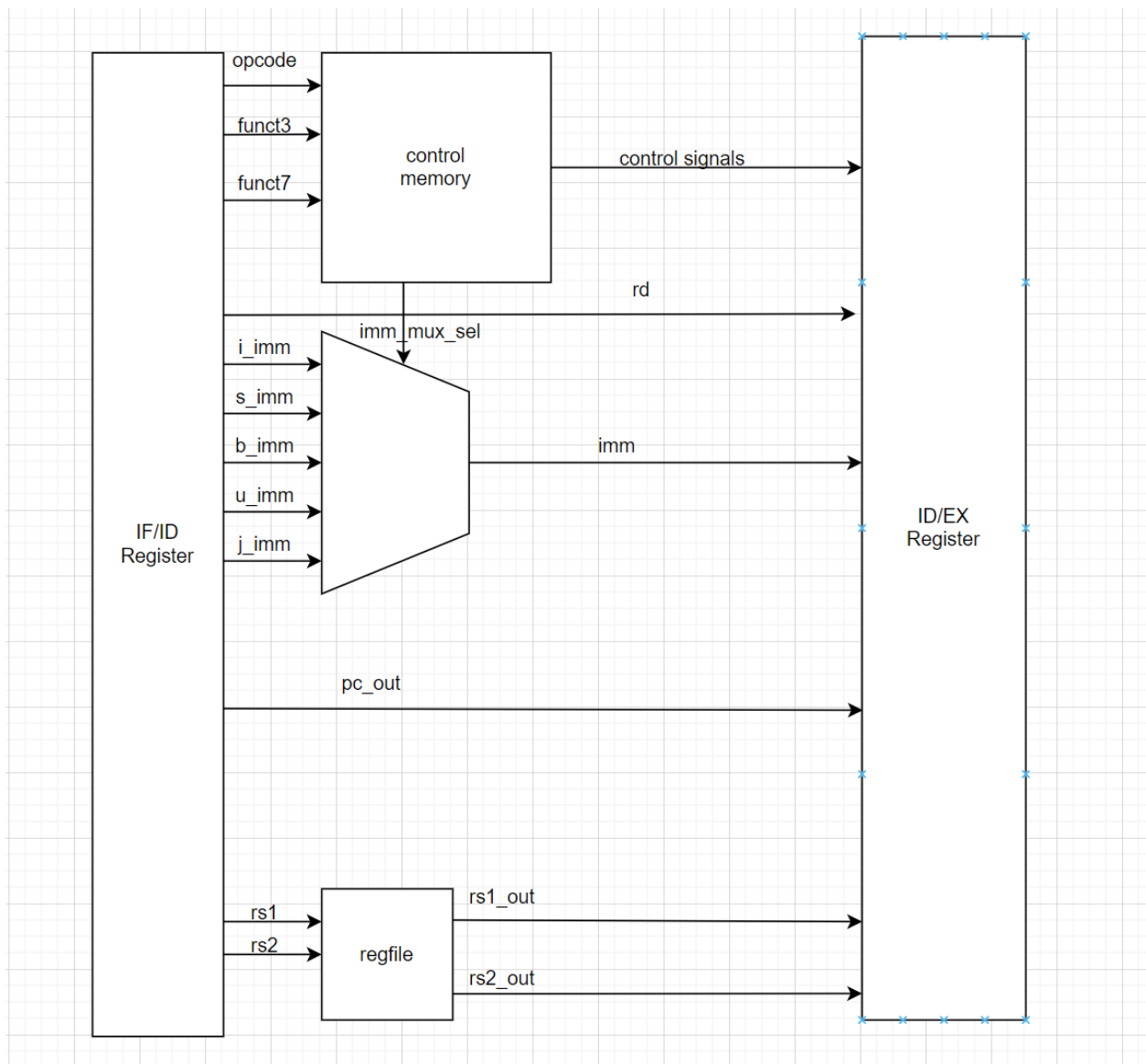


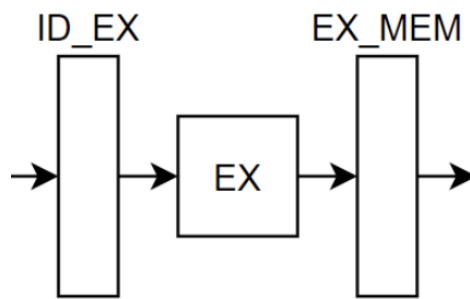
Below is the implementation of this part of the datapath.



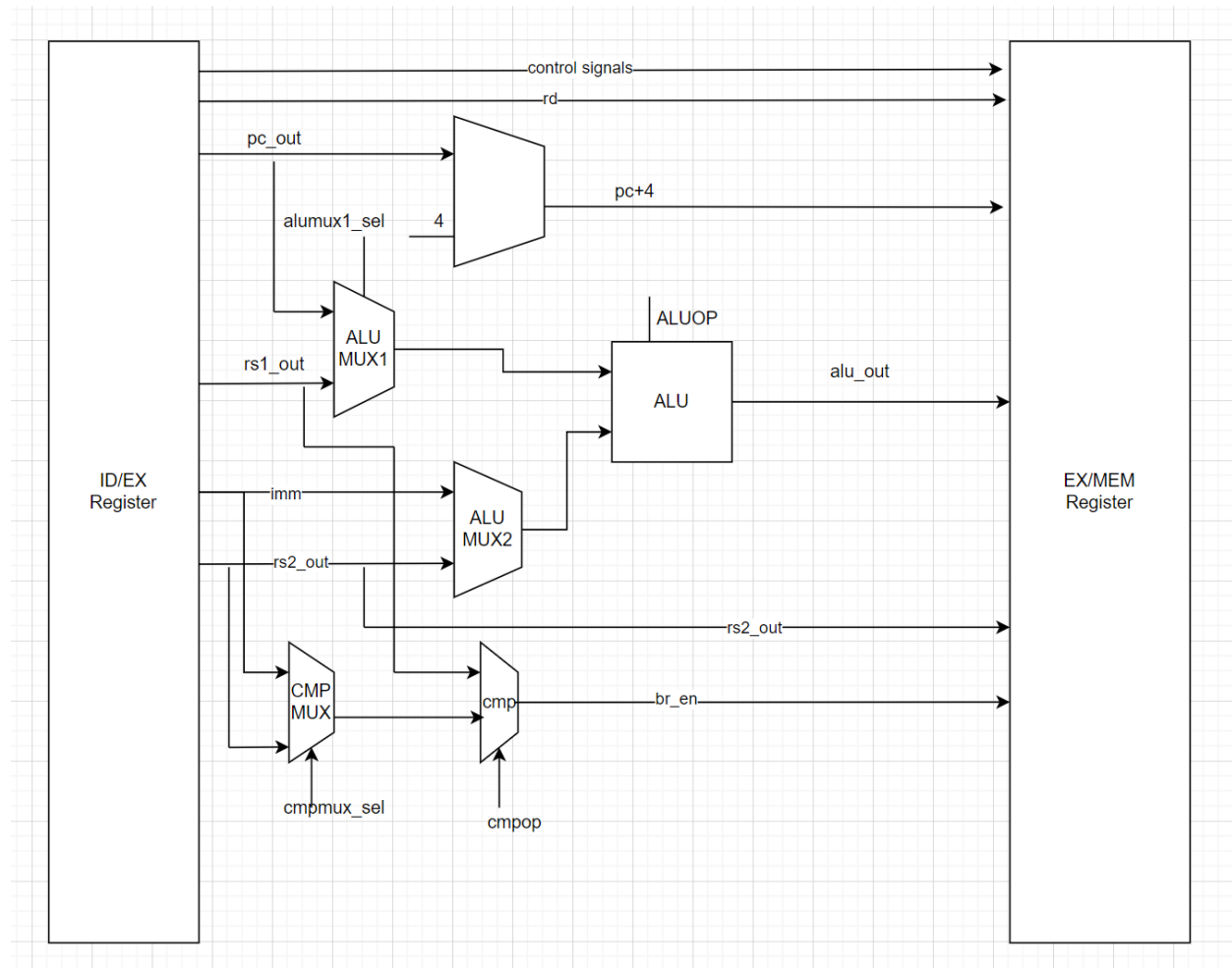


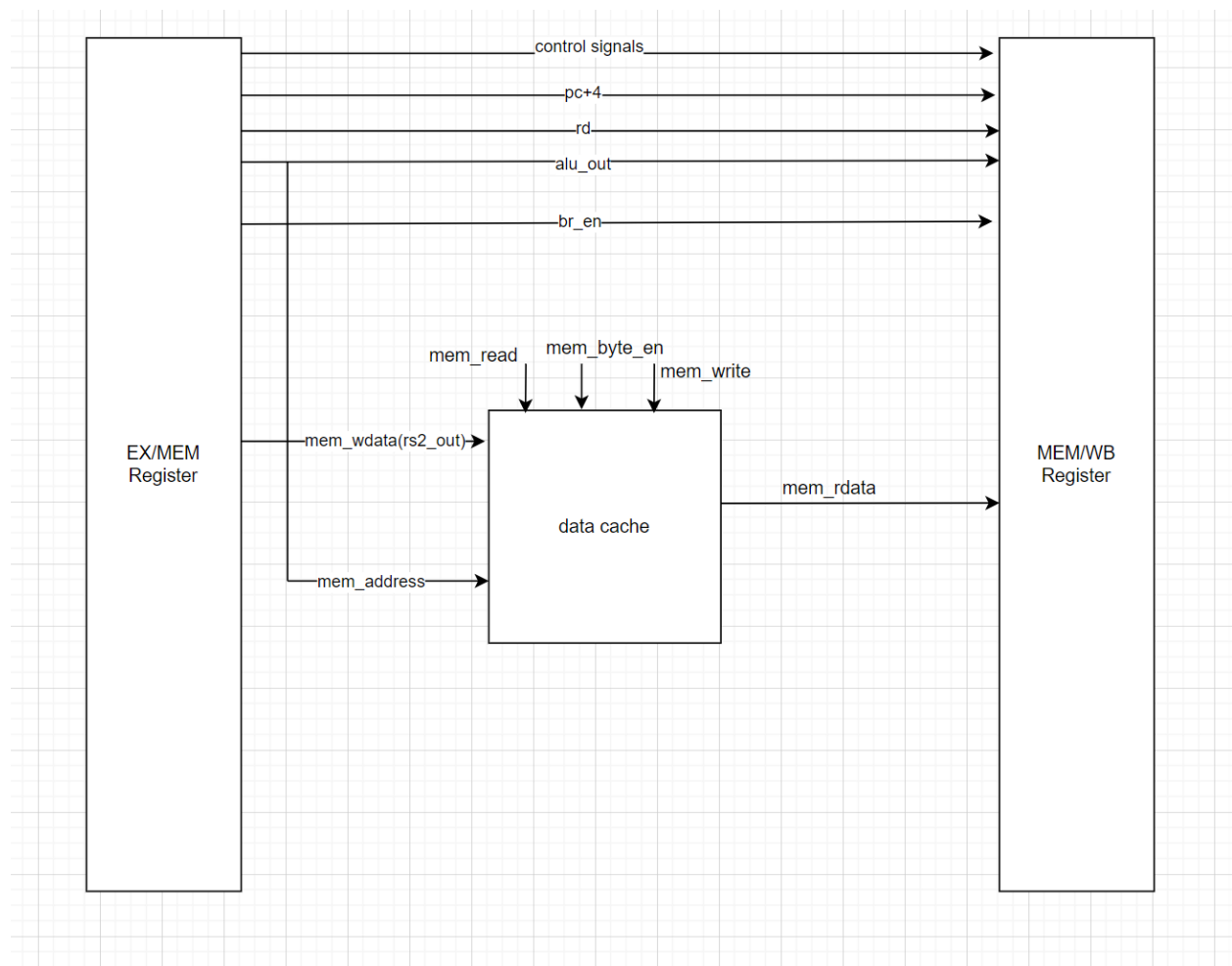
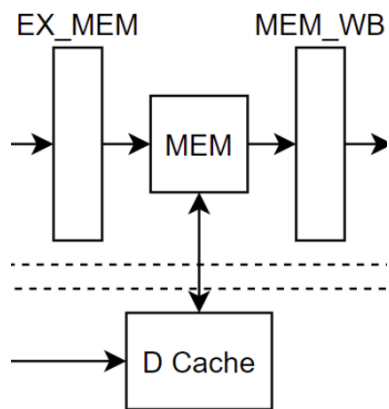
Below is the implementation of this part of the datapath.

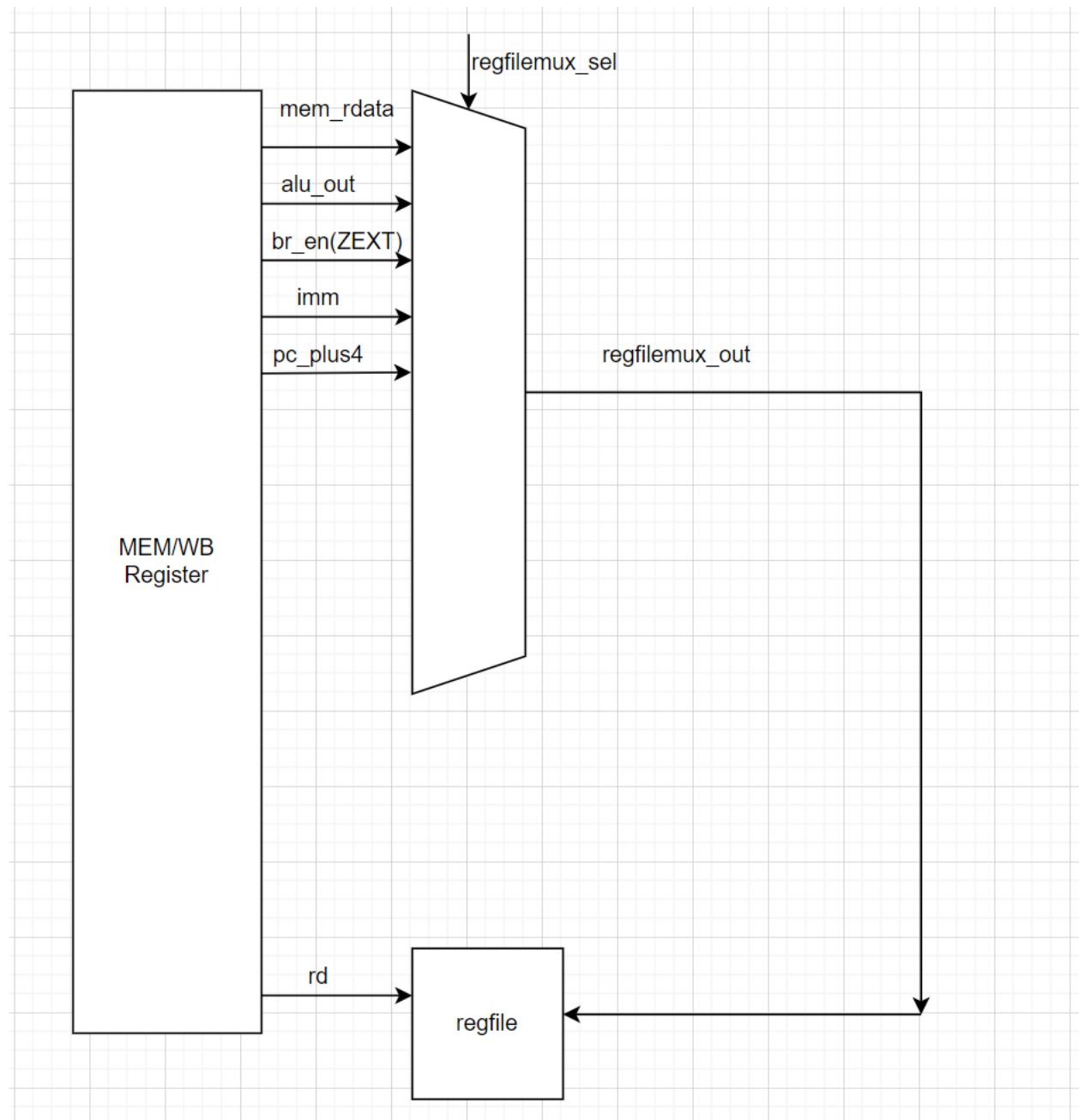
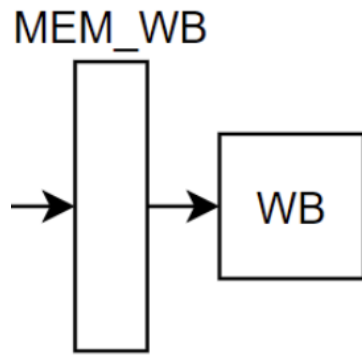




Below is the implementation of this part of the datapath







Control signals:

load\_pc

load\_regfile

pcmux\_sel

alu\_pc\_sel

imm\_mux\_sel

cmpop

cmpmux\_sel

alumux1\_sel

aluop

alumux2\_sel

mem\_read

mem\_write

mem\_byte\_enable

regfilemux\_sel