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Assignment-1

Topic: Arbitration using priority arbiter

The modelling is based on classes and objects

1. The input format is:
    - first enter the number of peripheral devices to connect to hardware (suppose 4)
    - then there will be a menu that will keep printing each time you perform some task
    - major thing in menu is press 1 for generating interrupt
    - on pressing 1, it is asked to enter device number which wants to generate the interrupt (space separated) eg. 1 2 0 (it means that device number 1, 2, 0 generates interrupt simultaneously and their request is reaching to priority arbiter)
2. The output format is:
    - the output format is just showing that among all the devices, the highest priority device recieves acknowledgement from the priority arbiter and it's ISR is being executed
3. According to me the modelling is closed to accurate due to following reasons:
    - all the hardware devices are written in class format so that their properties can be bind to one single unit as we have in real hardware
    - there is one hardware class in it as well, where each of the single hardware unit is connected using buses (the buses are also made as attributes of hardware)
    - whenever an interrupt is generated by any device it goes through same path (first send req to prio_arbiter, prio_arbiter sent int to processor and receives inta in return and based on priority, prio_arbiter sends acknowledgement signals to the devices, which then loads it isr vector on system bus, which in turn execute the routine for handling interrupt), all the above path is being followed in the code