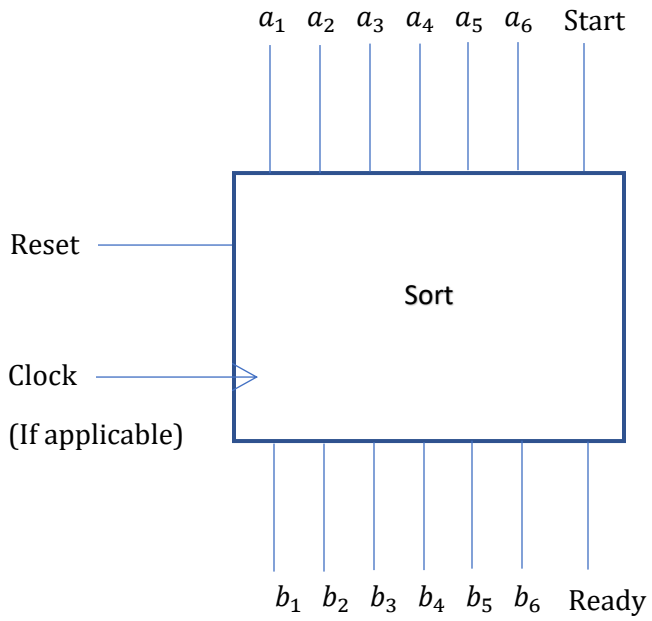
Implement any sorting algorithm to sort six (06) **16bit** integers, $a_1, a_2, a_3, a_4, a_5, a_6$ and produce the output, $b_1, b_2, b_3, b_4, b_5, b_6$, sorted in ascending order. The required pin diagram for the module is given below. A logic-1 to start pin starts the operation and once the sorting is completed, logic-1 should be asserted to ready pin.



Implement a suitable testbed to test the sorting module and test it.