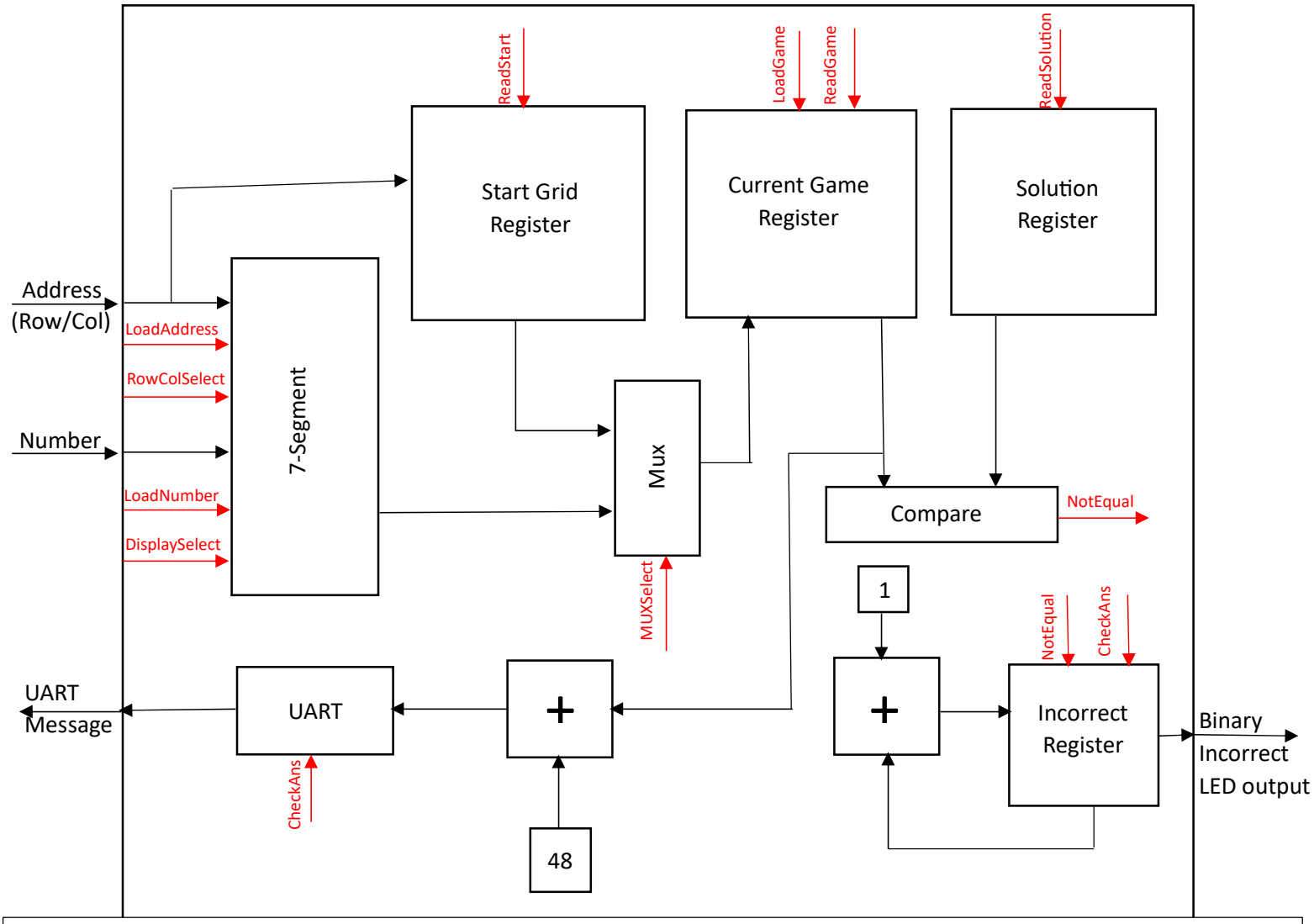

Start Grid Register: Stores the values and the addresses of the numbers that begin in the Sudoku grid. ReadStart is a control signal that will read the value in the address being passed to it.

Current Game Register: Is read/write and can have values changed to complete the game or read values to check answers. The register gets updated with data from the MUX.

Solution Register: Holds the completed Sudoku board that can be compared to the game board for correctness. The ReadSolution control signal is used to read a value and send it to the compare.

7-Segment: Has the ability to pass two different kinds of numbers the address and a value, the DisplaySelect chooses between passing the address or number. RowColSelect is for when loading an address selecting to change the row or column. LoadAddress and LoadNumber reach load an address value or number value respectively.

MUX: Our multiplexer chooses between looking at the new entry values from the 7-Segment or the start grid register at the start of the game to prepare the board. The MUXSelect chooses between which gets loaded.

Compare: The compare loops through each address of the board and compare the values of the game to the solution. The NotEqual control signal turns high when the compared values are different which then loads the Incorrect Register with its value +1.

Adders: The adder before the compare adds 48 to the value so it can be sent over UART. The adder after the compare adds one to the value in the incorrect register.

UART: Takes an ASCII value and sends it to a serial monitor for display purposes.

Incorrect Register: Saves the number of incorrect boxes in the grid, the NotEqual control signal loads the register with its value +1, the CheckAns signal sends the saved value out in binary to LEDs.