Using the same general data path as in Lab #4, design a control unit to implement the following algorithm:

```
Input N1
Input N2
Input N3
If  (N3 + N2 + N1) > 63
    Output 1
Else
    Output 0
End.
```

Note: Algorithms must produce the output whether the condition holds or not at the same cycle (Cycle 8) and return to the first state to input new numbers.

What to turn in:

- Draw the State graph for the control unit to implement this algorithm
- Fill in the control word table.
- Write a testbench to test your design. (You need to modify the test bench which was provided for the summation algorithm in Lab #4).
- Verify your design using the written test bench in Modelsim.

You need to add all the codes, diagrams and waveforms to your paper.