Project for the Structured Computer Organization Class

With reference to the text for this class. The Mic-1 computer Figure 4-6, implements the IJVM instruction set Figure 4-11, via the microprogram shown in Figure 4-17.
Assign op-codes and add microcode to the microprogram of Mic-1 to implement the following instructions that are then included with the IJVM instruction set.

1. ***CSL*** Perform a circluar shift to the left of the bit pattern on the top of the stack by the number stored below it on the stack. Remove the top two items on the stack and place the result on the top of the stack.
2. ***HBIT*** Replace the bit pattern at the top of the stack by the number of the highest bit present in that pattern.
3. ***LBIT*** Replace the bit pattern at the top of the stack by the number of the lowest bit present in that pattern.

In cases 2 and 3 deal with a zero bit pattern by leaving -1 on the stack.
Your microprogram, which should be as complete and as efficient as you can make it, must be clearly documented to describe its operation.
You are not required to run your program on a computer.
The project is due at the time of the final examination.

You should submit:

1. Your fully and carefully documented interpreter program.
2. Any additional material you please that will assist in the understanding of your project.