Addition of 2 Binary Numbers

The following program is to test your knowledge of binary-decimal conversions, good use of common sub-routines, use of the parity bit, and the process of binary addition.

Processing:

1. Using a well designed menu screen, ask if binary or decimal numbers are to be entered.

2. Ask for the entry of the 2 numbers.

3. If the user selects binary, validate the number as follows:

- Check for a length of 9 bits (8 data bits plus a parity bit)
- Check for all 0 or 1
- Check the value of the parity bit to ensure the number is entered correctly

4. If the user selects decimal, convert both numbers to binary
Note: use a single common conversion routine, called twice.
You should make use of the routine that you coded in the previous exercise.

5. Using the rules of binary arithmetic, and starting from the right of the number, add the two values together, and produce the binary result.

0 + 0 = 0 carry 0
0 + 1 = 1 carry 0
1 + 1 = 0 carry 1
1 + 1 + carry 1 = 1 carry 1

Do not forget to include the carry bit from the previous addition

6. If the data was input as decimal, now convert the result back to decimal.
You should make use of the routine that you coded in the first exercise.

7. Print the answer, and ask if another addition is required.

REMEMBER:

*** Design your solution first, and produce a flowchart**

*** Use Structured code (lots of subroutines, and explanatory remarks!)**

*** Design your screens well**