Full Adder Program Explanation

1. Users input two values

The program first asks users to input two decimal values that they want to add.

2. The program converts these values to binary

These decimal inputs are then converted into their binary equivalents, as the full adder logic operates on binary numbers.

3. The full adder logic adds the two binary numbers

Using a full adder circuit, the program processes the binary values to perform the addition.

4. The full adder takes three inputs: the two binary numbers and

Cin (initial carry) = 0

The full adder requires three inputs—two binary bits and an initial carry (Cin), which starts at 0 since there's no previous carry from a prior operation.

5. It produces two outputs: Sum and Carry

The full adder produces two outputs for each bit: a Sum (the resulting bit) and a Carry (which will be used in the next stage of the addition if needed.

6. If a carry remains, it is added back to the sum

After all bits are processed, if there's a remaining carry, it gets added to the result, ensuring the sum is complete.

7. The final binary sum is obtained

At the end of the operation, the program outputs the binary sum of the two input values.

8. A 'Bin\_to\_Dec' function converts the binary sum to decimal

Finally, the binary sum is converted back into its decimal form for easy interpretation.