

Decimal to Binary Converter

Example:

```
C:\WINDOWS\py.exe
Enter decimal value : 129

Division by 2    Quotient    Remainder    Bit #
129/2           64           1            0
64/2            32           0            1
32/2            16           0            2
16/2            8            0            3
8/2             4            0            4
4/2             2            0            5
2/2             1            0            6
1/2             0            1            7

129 (base 10) = 10000001 (base 2) [bitlength = 8]

Enter decimal value :
```

Code:

```
def decToBinLongDivision(decimal: int) -> None:
    numtdivide = decimal
    quotient = 0
    remainder = 0
    bitlenght = 0
    strBinary = ""

    if decimal == 0:
        strBinary = '0'

    print('Division by 2\tQuotient\tRemainder\tBit #')
    while True:
        if numtdivide <= 0:
```

```

        break
    quotient = int(numtodivide / 2)
    remainder = numtodivide % 2
    print(f'{str(numtodivide)}+ "/2":<8}\t{quotient:<8}\t{remainder:<8}\t{bitlenght:<8}\'')
    numtodivide = quotient
    bitlenght += 1
    strBinary += str(remainder)
print(f'\n{decimal} (base 10) = {strBinary[::-1]} (base 2) [bitlength = {bitlenght}]\n')\

def main() -> None:
    """ This program reads in a binary expression as a string and evaluates the result. """
    while True:
        userInput = input("Enter decimal value : ")

        # Without any input, break the loop
        if len(userInput) == 0:
            print("End of program.")
            break

        print('\n')
        decToBinLongDivision(int(userInput))

if __name__ == "__main__":
    main()

```

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