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| **LAB101 Assignment** | **Type:** | **Short Assignment** |
| **Code:** | **C.S.P0011** |
| **LOC:** | **100** |
| **Slot(s):** | **2** |

**Title**

Convert binary, octal and hexadecimal to decimal

**Background Context**

In [mathematics](https://en.wikipedia.org/wiki/Mathematics) and [digital electronics](https://en.wikipedia.org/wiki/Digital_electronics), a binary number is a [number](https://en.wikipedia.org/wiki/Number) expressed in the binary numeral system or base-2 numeral system which represents numeric values using two different symbols: typically [0 (zero)](https://en.wikipedia.org/wiki/0_(number)) and [1 (one)](https://en.wikipedia.org/wiki/1_(number)). The [base](https://en.wikipedia.org/wiki/Radix)-[2](https://en.wikipedia.org/wiki/2_(number)) system is a [positional notation](https://en.wikipedia.org/wiki/Positional_notation) with a radix of 2. Because of its straightforward implementation in [digital electronic circuitry](https://en.wikipedia.org/wiki/Digital_electronics) using [logic gates](https://en.wikipedia.org/wiki/Logic_gate), the binary system is used internally by almost all modern [computers and computer-based devices](https://en.wikipedia.org/wiki/Computer). Each digit is referred to as a [bit](https://en.wikipedia.org/wiki/Bit).

The octal [numeral system](https://en.wikipedia.org/wiki/Numeral_system), or oct for short, is the [base](https://en.wikipedia.org/wiki/Radix)-8 number system, and uses the digits 0 to 7.

The hexadecimal (also [base](https://en.wikipedia.org/wiki/Radix) [16](https://en.wikipedia.org/wiki/16_(number)), or hex) is a [positional](https://en.wikipedia.org/wiki/Positional_notation) [numeral system](https://en.wikipedia.org/wiki/Numeral_system) with a [radix](https://en.wikipedia.org/wiki/Radix), or base, of 16. It uses sixteen distinct symbols, most often the symbols 0–9 to represent values zero to nine, and A, B, C, D, E, F (or alternatively a, b, c, d, e, f) to represent values ten to fifteen. Hexadecimal numerals are widely used by computer system designers and programmers.

**Program Specifications**

Create a program to convert binary, octal and hexadecimal to decimal.

***Function details:***

1. Enter a binary/octal/dexadecimal number
2. Convert the binary/octal/dexadecimal number to decimal number
3. Display the decimal number on the screen

***Expectation of User interface:***

The Program must have interface as below:

1. *Convert binary number to decimal number*
2. *Convert octal number to decimal number*
3. *Convert hexadecimal number to decimal number*
4. *Exit*

*Please choose number (1 – 4): 1*

*Enter binary number: 0011010*

*Decimal number is: 26*

*Press enter to continue, Esc to return the main menu*

*111->7; 111000 ->56;*

*70 ->56, 171 -> 121*

*10AEE ->68334; B12F->45359*

**Guidelines**

Student study relationship between binary/octal/hexa number and decimal number