**Base-Converter(16bit)**

**The Program**

This program converts decimal, binary and hexadecimal values to and from. The program was intentionally made to convert 16bit binary values and its equivalent forms in decimal and hexadeciaml values. However, greater than 16bit values are also converted accurately but produces an insane result upon crossing the bounds.

**CLASSES:-**

**Class decToBin:-** this class takes a string of decimal values as input and converts it to its binary representation.

**Class decToHex:-** this class takes a string of decimal values as input and converts it to its hexadecimal representation.

**Class binToDec:-** this class takes a string of binary values as input and converts it to its decimal representation.

**Class binToHex:-** this class takes a string of binary values as input and converts it to its hexadecimal representation.

**Class hexToDec:-** this class takes a string of hexadecimal values as input and converts it to its decimal representation.

**Class hexToBin:-** this class takes a string of hexadecimal values as input and converts it to its binary representation.

**Class checkNumber:-** this class takes string of values as input and check whether they are valid for the specified conversion. Methods called checkDec(), checkBin() and checkHex() to check if decimal, binary and hexadecimal inputs respectively, are indeed valid.

**Main Class:-**

The main class starts off by asking the user to specify which type of conversion they want. Then asks for input. If valid, the converted value is shown. Else an error message is outputted.

**Conclusion and Improvement**

I could have made just 3 classes, Decimal, Binary and Hexadecimal class where each class would have had 2 method to convert to the other two types of values. Eg, Decimal class may have had a convertToBin and convertToHex method to convert to binary and hexadecimal respectively. But making classes for each type of conversion allowed me to do different types of implementations and also allow loose coupling which allows easy code development.