Convert To Octal Design Document

Abstract

One of the important concepts in computer science is the difference between decimal number system and binary number system. It is important to understand how there are different positional number systems and how the decimal system that is most common can be converted to other bases. The goal of this project was to implement a program that can convert decimal numbers to octal numbers. There are different methods of converting decimal numbers to an octal value. The method used in this project will be the one relying on dividing the decimal numbers by 8, until no quotient is calculated. The remainders of each equation are combined together to form the octal number. Another method of accomplishing this is by using the highest power of 8 that can divide the decimal number of interest, then dividing subsequent remainders by 8, until you reach the 0 power. The quotients are then combined together to form the octal number.

Methodology

A function called convertToOctal will be created

Decimal numbers can be converted via the following equation:

Remainder = decimal number % 8

Quotient = decimal number / 8

The quotient is checked for a value of 0. If it is not 0, then the remainder is continued to be calculated and stored until quotient is finally 0.

For any number that isn’t higher than 7, the decimal value will be the same as the octal value.