

Let Go of Binary

Velker, Barrett

What would happen if the computers today did not use binary (Base Two) but instead used ternary (Base Three)? Theoretically a bigger base computer could store more information in the same amount of space. For example, the number ten in decimal (the system we predominantly use) is represented in two digits ($10 = \text{ten}$). But the number ten in binary takes four digits to convey the same message ($1010 = \text{ten}$). A higher base computer should also make calculations perform quicker and more efficiently than a lower base computer given the same task. This project aims to find out if a base three computing system is a feasible alternative for future computers. A simple billiard ternary adder will be constructed out of bricks and calculations will be performed repeatedly to determine the speed, accuracy and flexibility of the simple calculator.