

## Application Security Assignment 1

The sandbox is Turing complete as it uses elements that all the implementation of all x86 instructions. The sandbox allows all arithmetic calculations with the provided operators. “nand” being a universal gate can be used to implement any other logic gate. This provides all possible calculations. In addition, the branch instructions allow all pairing of jumps and comparisons. They can be combined to perform less/greater than and equal to jump instructions. A memory is also provided to be able to store values as intermediaries. With all these properties this sandbox can emulate any Turing machine, and is Turing Complete.