

# Lab 4 and 5 Submission

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## Part 1

The code for part 1 may be found in “solution.py”.

## Part 2

The code for part 2 may be found in “modifiedSolution.py”.

**Note:** In order to run the complete script that generates a plot the Matplotlib library would need to be installed. It will not make an error if the library is not installed

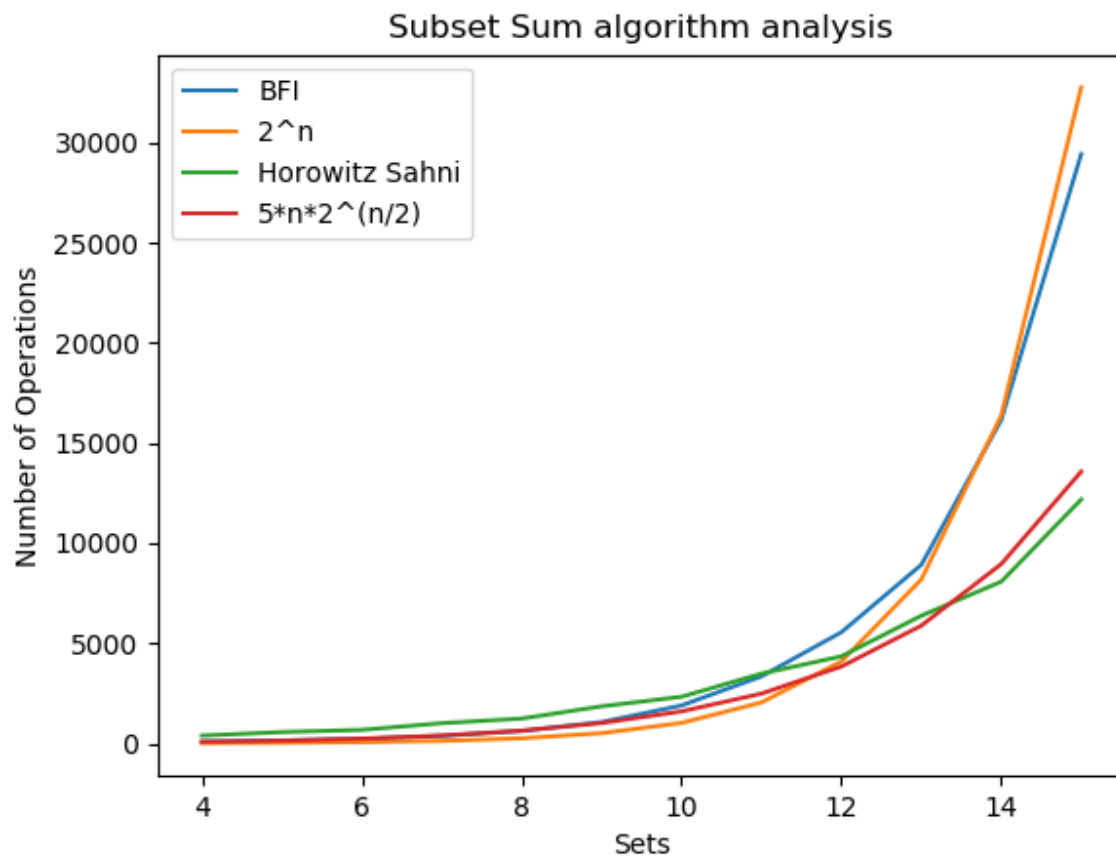


Figure 1 - Comparing the results of each of the algorithms

## Part 3

Based upon the graphed results the BFI subset algorithm follows the trend of  $2^n$ . Additionally, the Horowitz and Sahni subset sum algorithm follows a trend of  $n \cdot 2^{n/2}$ . Based upon rules of algorithm complexity the constants will drop, and the algorithm runs at the predicted complexity.