# CS 153 Galois Field Calculator

A.Y. 2016-2017 Second Semester
Professor Susan Pancho-Festin

## Project Details:

- *Name*: Paola Faith T. Simon
- *Student Number*: 2014-32670
- *Programming Language*: Python 2.7.13
- *Operating System*: Windows 8.1
- *Git Repository link*: https://github.com/ptsimon/CS153-Galois-Field-Calculator

## Reflection

- Which part(s) of the project, if any, did you find easy to do? Why do you think did you find these easy to do?
  - During the coding, I find the addition and subtraction part of the calculator fairly easy to do as it was simple and direct. It was just the operation of XOR of each of the elements, and Python has its function that lets you do XOR operations directly. Also, it doesn't use the irreducible polynomial P(x) which makes coding the addition and subtraction functions easy.
  - The overall computation was made easy due to the given format. The coefficients were already given straight and direct so it was less time to translate the input into computer readable ones.
  - The input validation was also easy as Python provides such feature of Try-Except which easily catches input errors that doesn't match the required format of the input.
  - The main menu was also easy, it was just while loops and if-conditions. Even the ASCII art design was easy to do as ASCII generators are easily accessible over the internet.

- Which part(s) of the project, if any, did you find challenging to do? Describe how you solved these challenges.
  - What I found difficult the most was computing the multiplication and division part. I already forgot how to multiply and divide Galois fields on paper, o I spent a lot of time researching and asking people how to do it. Coding it was even harder, but eventually I managed to do it through extreme analysis and patience.
  - I also found the printing of the detailed solution difficult. I spent a lot of time figuring out how to display the solution nicely and in order. It was a bit easy for the addition and subtraction, but the multiplication and division were a bit challenging.

# References


- Galois Field GF(2 m ) Calculator Tool - UNB ECE: http://www.ee.unb.ca/cgi-bin/tervo/calc2.pl
- GF(2m): https://www.doc.ic.ac.uk/~mrh/330tutor/ch04s04.html