File Specification for FileCalc Project

0.1 1 Equ File Header

This is the overall header format that you will be presented with and you will write an output file using this format. Be sure to note the magic number. That will tell you if a file is valid. If there is any deviation from this format, reported error.

Name	Magic Number	Field	Number of Equations	Flags	Equation Offset	Number of Optional Headers
Length (Bytes)	4	8	8	1	4	2
Purpose	Should be 0xDD77BB55	Unique File ID	Number of Equations in the file	Unsolved = 0x00 Solved = 0x01	Where the operations begin	RESERVED FOR FUTURE USE

0.2 2 Equation Format For Binary Serialization

This describes each equation. It is "serialized" into a custom format described below. Note the flags field will tell you if the numbers should be treated as floats or not.

Name	Equation ID	Flags	Equation	Padding
Length (Bytes)	4	1	17	10
Purpose	Unique ID for each Equation	Reserved for Future Use	Equation to Solve	Pad to 32 bytes

0.3 3 Unsolved Equation Format

This is the format of an equation

Name	Operand	Operator	Operand
Length (Bytes)	8	1	8
Purpose	64 bit integer	Single Byte Operator	64 bit integer

0.4 3.1 Operators are defined as:

Addition	0x01
Subtraction	0x02
Division	0x03
Multiplication	0x04
Modulo	0x05
Left Shift	0x06
Right Shift	0x07
Bitwise And	0x08
Bitwise Or	0x09
Bitwise XOR	0x0a
Rotate Left	0x0b
Rotate Right	0x0c
Undefined: should report error if used	0x0d, 0x0e, 0x0f

0.5 4 Solved Equation Format

Name	**Equation ID**	**Solution**
Length (Bytes)	4	8
Purpose	Unique ID for Equation	64 bit integer