The .random package of the Fraction Worksheet Creator is heart of programs primary function of creating worksheets. There are multiple classes that build off one another to accomplish the task of generating the PDF files for the worksheets and answer sheets.

***Fraction***

The base class for describing a fraction. Includes the numerator and denominator and provides the ability to reduce fractions to their lowest terms.

***FractionGenerator (FNG)***

Generates a random set of fractions based on the parameters provided. This includes limits on the numerator, denominator, if whole numbers can be generated, and if matching denominators are required. Passes the fractions to calling classes as a List.

***Equation***

Forms equations based on the fractions generated by the FNG. Then based on the operator for this equation it calculates the answer which is stored in an additional Fraction class object.

***WS\_Master***

An abstract class used to store common data for all worksheets. This includes the list of fractions generated by the FNG, the seed value used to create the fractions and the base worksheet document. This includes common header and footer methods for all worksheets. Example and Problem methods must be implemented by all subclasses.

The following subclasses use WS\_Master

***WS\_Beginner\_LG*** – Beginner Least to Greatest problems

***WS\_Beginner\_Pie*** – Beginner pie diagram to fraction problems

***WS\_Beginner\_PieAdd*** – Beginner pie diagram addition problems

Beginner worksheets require separate subclasses since there is little commonality between the different worksheets at this level.

***WS\_Intermediate*** – All three intermediate worksheets (Addition, Subtraction, Multiplication/Division) use this one subclass since the only differentiator is the operator. The equation class handles the answers being different based on the operator used for the sheet.

***WS\_Advanced*** – All three advanced worksheets (Addition, Subtraction, Multiplication/Division) use this one subclass since the only differentiator is the operator. The equation class handles the answers being different based on the operator used for the sheet.