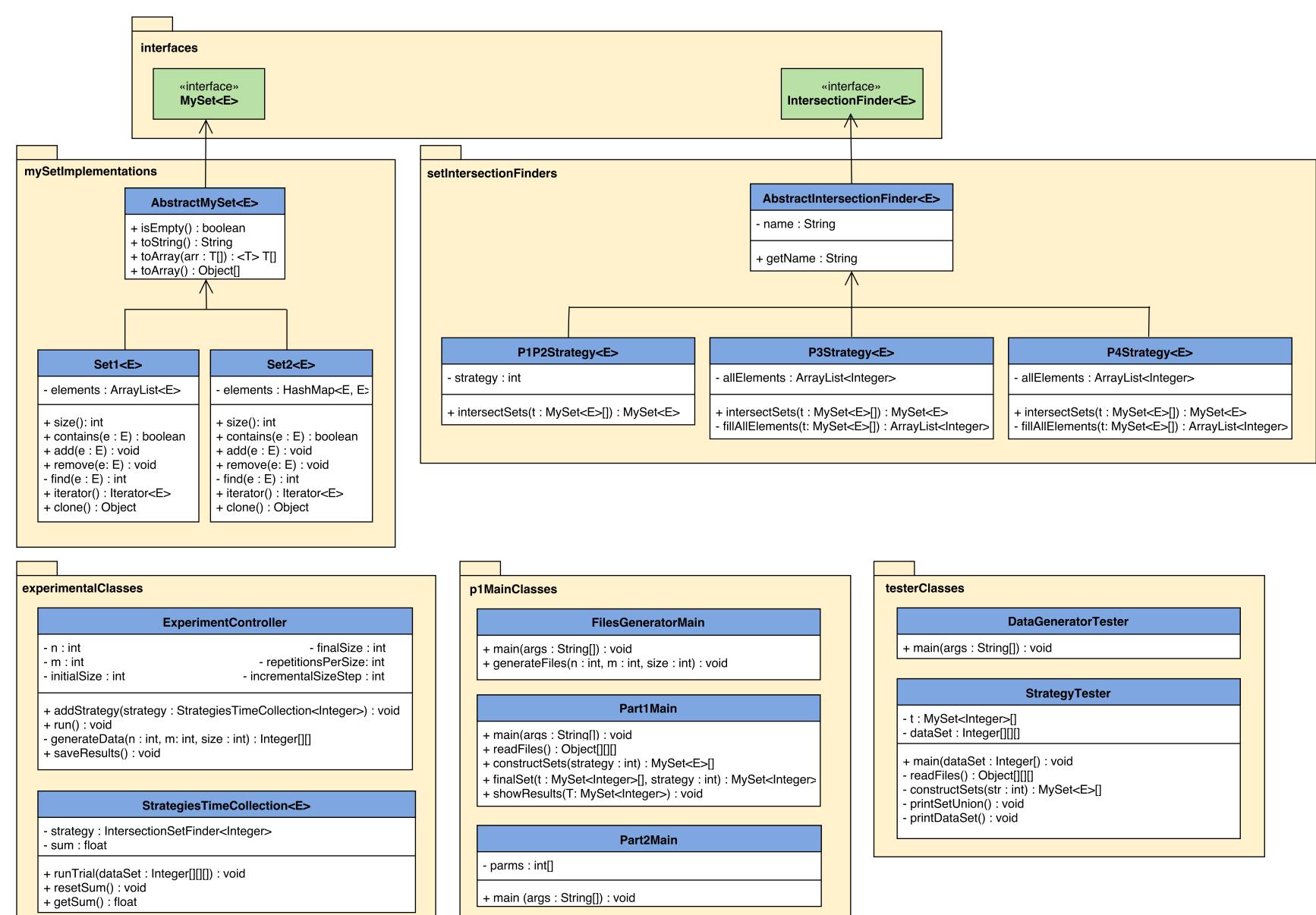
The following is a UML design for a Java project for implementing, as well as testing for efficiency, four different strategies to construct an intersection of sets from a randomly generated data set given specific parameters. Strategies for intersecting the data sets are: P1, P2, P3 and P4. P1 and P2 will follow a general algorithm scheme to construct the final set. The difference between the two will be the way *Sets* are being implemented. In this case we will be using Java implemented ArrayList and HashMap, respectively. For P3 and P4, HashMap implemented *Sets* will be used whenever sets are needed. The construction of the final set will be done by counting the frequency of the elements of the sets and adding them to the final set whenever it complies with our project's demands. Finally, an efficiency analysis will be done with every strategy to determine which one is the best for the job.



## dataGenerator **DataGenerator** - R1 : int - totalSize : int - sizes : Integer[][] - R2 : int - dataSet: Integer[][][] - maxRangeValue : int - n : int - sizeFactor : int - rnd : Random - m : int + generateData() : Object[][][] - generateSizes() : void - maxSize(sizes : Integer[][]) : int - matchSizes(s : int, total : int) : void + printSizes(): void + printSets() : void + printArray(numbers : Integer[]) : void **DataReader** - n : int - m : int - dataSet : Integer[][][] parentDirectory: String + readDataFiles() : Object[][][] + printSets(): void + printArray(numbers : Integer[]) : void