Problem: Write a program that takes the name of a text file from the user. If the file is a regular text file with extension .txt (Fig.1), it prints its word count (Fig.2). If it is a CSV file with extension .csv (Fig.3), then it prints the number of rows and columns in it (Fig.4). Assume that the regular text file has whitespace as the word delimiter, and that the CSV file has all rows with equal number of columns (or commas)

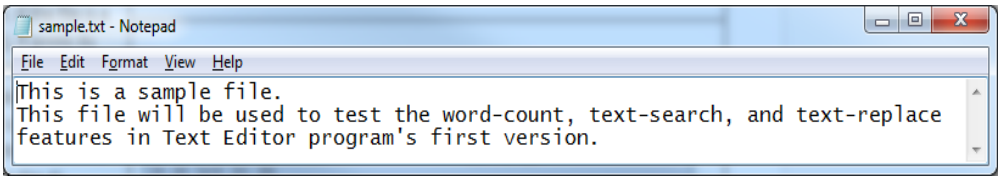

Figure 1: Sample.txt

```
Enter file name
sample.txt
This file has 24 words
```

Figure 2: Output 1

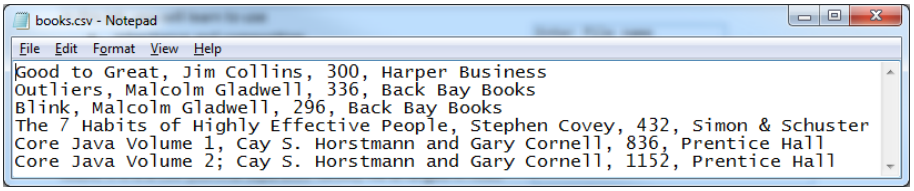

Figure 3: books.csv

```
Enter file name
books.csv
books.csv has 6 rows and 4 columns
```

Figure 4: Output 2

Design: DocAnalyst takes filename as user input in main method, invokes its analyzeDoc method to determines whether it is a RegularDoc or a csvDoc, and then uses polymorphism to invoke the document's collectDocInfo and printDocInfo methods.

Document is an abstract class with two abstract methosd collectDocInfo() and printDocInfo(). collectDocInfo() counts number of words in RegularDoc and number of rows and columns in CSVDoc. printDocInfo() prints the output.

Constraint: You must use the member variable document in DocAnalyst instead of creating your own local variable in analyzeDoc method.

You are given two test files - one for Document classes and one for DocAnalyst. Use these to develop and test your solution.

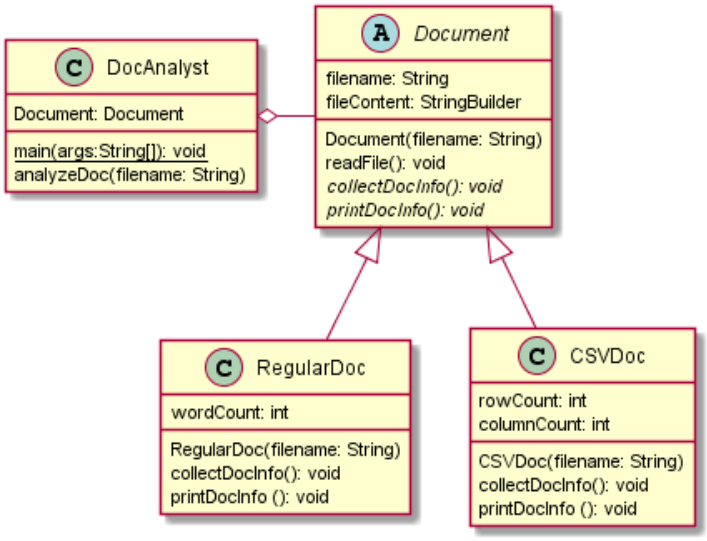

Figure 5: Class diagram