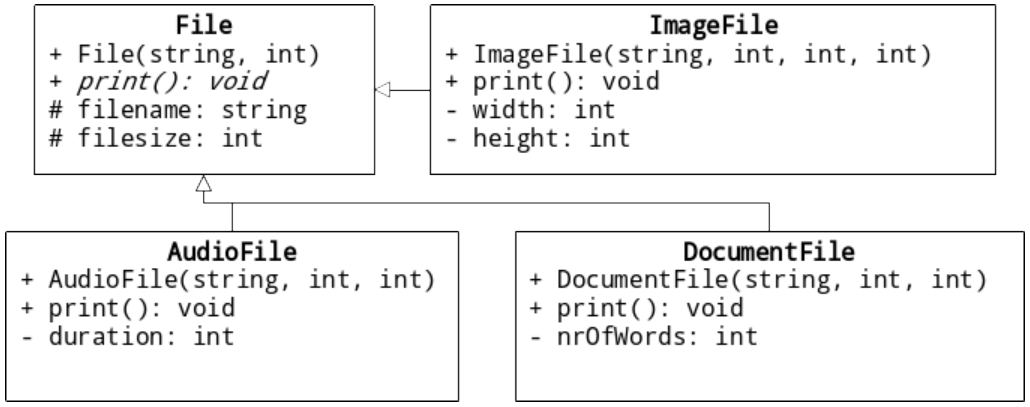
CENG218 Homework 2

Implement the following classes:



File is the base class of **AudioFile**, **DocumentFile** and **ImageFile** classes. In addition to Audio, Document and Image classes, you must design and implement an additional class for a file type chosen by you. Be creative: what private attributes would your chosen file type require? What message should be printed on screen by its print() function?

Write a C++ program in which you read information about multiple files from a text file (a sample is provided), populate a single **File** list (can be a dynamic array or a vector) using polymorphism and call their print() functions. Format of this file is as follows:

- **First column:** file name. Type of file (therefore the class type) is determined according to file extension.
- **Second column:** file size in bytes.
- **Third column:** width for images, number of words for documents, duration (in seconds) for audio.
- **Fourth column:** image height. Does not exist for other file types.

Test your program by altering the sample text file (add new lines, etc) and verify that your program works with different files as well.

A sample run is provided below. Study it carefully; your program should produce a similar output.

```
summer.jpg is a 5184x3456 image file (6.1577 MB)
homework.pdf is a 1658 words long document file (94.929 KB)
announcement.odt is a 27 words long document file (243.83 KB)
song1.mp3 is a 3 minutes 10 seconds long audio file (6.28576 MB)
logo.png is a 256x256 image file (23.782 KB)
song2.mp3 is a 3 minutes 2 seconds long audio file (4.38899 MB)
song3.mp3 is a 3 minutes 55 seconds long audio file (5.65889 MB)
ceng200.doc is a 2172 words long document file (210.768 KB)
classdiagram.png is a 718x151 image file (18.967 KB)
```