For the first design I just used a bunch of list of strings to list out the differences between plain lines and shifted lines. For the second design I created a object that represented the lines for both the sorted and shifted. When adding a new base line to the object, it would auto shift the data for you.

For which design is more resilient to change, the base one using just string arrays does not allow for anything other than strings. The second design as an object could have additional object variables added to it and still be used. Making this object an interface could also add more options of scalability.

For both designs, I don't think either design would need to be changed if a database were to be involved. The only difference I could see for the first one would be that the application process sorts the lines rather than grabbing the sorted line, and this would / could cause redundancy if the shifted lines are already present.

As far as using a GUI, the only difference I would make in either is allowing for what text file is read in and what is written out. Instead of being a static file I would make the application allow for a dynamic change for user inputted files.

Another design change is having other variables besides strings. The first implementation only supports strings. The second design is object based and could allow for a wide set of variables available.

The second design is easier to understand is the second design, as it is just reading and writing to an object. The performance is similar for both, except their are less array lists for the second design.