

Lab Task: Two

This assignment contains a single task with two parts.

- The first part is to design a class diagram solution to the given problem. To generate the UML class diagram, it is recommended to use the ArgoUML design tool.
- The second part is to implement the given design structure in Java/Python/other OOP language using Object-Oriented Programming techniques. Make sure, that your code is neat, clean and thoroughly commented. Try to use meaningful variable names. This assignment requires you to use the **Strategy patterns**.

Sentence Generator

Description

Sentence Generator is a program that generates sentences using English words. All sentence generators have an internal vocabulary (one vocabulary for each sentence generator), which is initially empty and can be updated by adding some words. All sentence generators are able to generate sentences according to some rules. You have to implement following three types of sentence generators:

- **Random Sentence Generator - RSG**
When a word is added to RSG, before storing it in internal vocabulary, the word is converted to lowercase. RSG generates new sentences by randomly picking random amount of words from its internal vocabulary and concatenating them using single space between the words.
- **Sorted Sentence Generator - SSG**
Before adding a word into its internal vocabulary, SSG also converts the word to lowercase. Like RSG, SSG picks up the words randomly. The only difference is that it sorts these words before the concatenation.
- **Ordered Sentence Generator - OSG**
OSG is different from both RSG and SSG. A word, before adding into internal vocabulary, will be converted to upper case and reversed. OSG concatenates all of the words in the same order they have been added to the vocabulary.

Finally, after creating these sentence generators you have to create a sentence generator application(console/gui/etc), in which user can choose a particular sentence generator from a menu to create a sentence. Moreover, using the same menu user can also give input to add new words in the vocabulary. The sentence generator application class name should be **SentenceGenerator33.java**, where 33 is your roll number.

Assignment Submission Instructions

1. Class diagram name should follow the specific format: **ClassDiagram33.png**.

2. After that send a docs file which will describe your assumptions.
3. You have to all the class files in the **SentenceGenerator33.java** file.
4. Finally attach each of the files separately in the assignment and then submit. **Don't zip the all the files.**

Don't forgot to turn in the assign and finally submit the assignment.