visualCs is the way to vividly show series algorithm, like sort, matrix and graph, based on MVC design pattern. We use this utility (jar file) to randomly generate specific number of algorithm problems and corresponding solutions, saving as PNG or TXT, then store these question & solution pairs into database. When designing quizzes in LiquiZ, we could extract these info for students’ online test .

Here is the idea for generating random Graph problems.

1. Designed an algorithm that could randomly generate a graph.
2. Analyzed project feature and designed abstract class and interface to monitor calculation procedure of certain algorithm based on MVC conception.
3. Using multithread to highlight each valuable vertex and edge depend on Processing API.

Here we illustrated one of Graph problems, Bellman Ford question.