On Dec. 3rd, Dr. Robert revisited the Software Engineering class as a guest speaker and talked about one of his projects. In this occasion, his topic was “The Replace Language, The ultimate Refactoring.” Dr. Robert, with the help of another programmer, transformed a program written in Delphi into a program with the same features in C#. The project was a success and Dr. Robert also introduced a new way to develop software.

At the beginning, Dr. Robert discussed different methods, which were used to accomplish the same goal, like “Stop and Replace” and “Rewrite the program.” These methods are financially not sufficient because programmers introduce bugs as they program and therefore the translating process is timely extended. Furthermore, new features and fixes cannot be added during this process. Dr. Robert’s goal was to create a program that follows the rules and translates the code from Delphi to C#. The rules included mappings and patterns matching and they were constantly revised to improve the transformation’s accuracy and efficiency. With this method, any language can be transformed to a desired language. This means the customers can write a program in their chosen language, and then it will be transformed to a selected computer language, which is executable on the computer. This method of developing software can greatly reduce the essence of complexity, which is ninety percent of all the difficulties according to Brooks in his papers "No Silver Bullet: Essence and Accidents of Software Engineering." The communicating hardship will be overcome and the programmers can focus on doing
what they are good at. The programmers will be no longer required to critically understand the problems stated by the customers.

In summary, the semantic preserving code transformation can have immense impact on the way software is developed. By creating a translator program, a language can be transformed to a chosen computer language. This transformation eliminates the difficulties in communicating between the customers and the programmers which in turn will significantly improve the productivity of the software designing process.