Abstract

The paper explores the Genetic Algorithm approach to generate adequate and accurate test data for a specific target path. Software plays an important role in many of the systems, where the usage of software for a variety of purposes in different domains of modern life is rapidly increasing. With advancements in technology, it becomes quite complex whereas, software often contains errors. So testing consumes more money and time, which leads to automation that reduces human effort in finding bugs and errors. Actually, Automation in the last phase of system development is similar to manual testing. In both cases, bugs are detected only after code has been complete. Software testing is the most important component of software development process. Path testing is a popular structural testing method which uses the source code of a program to find every possible executable path. Test data generation is a key problem in software testing and its automation will improve the efficiency and effectiveness of software testing. Genetic Algorithm is an adaptive heuristic search algorithm that premise on evolutionary ideas of natural selection and genetic. In this paper, Genetic Algorithm is used to generate path by converting the program into its corresponding Control Flow Graph and then automatically
generates the test data for the target path using different sets of GA operators.

References

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Index Terms

Computer Science    Software Engineering

Keywords

Testing Techniques, Genetic Algorithm, Case Study and Path Testing, Conclusion