ARCHITECTURE FOR ACCESSIBLE AND RELIABLE HOME AUTOMATION SYSTEM

Michael Sunur – 1200994626
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Abstract

This thesis is intended to create a home automation system that enables the reader to communicate with the control panel board inside the reader’s home remotely through the browser. By using this home automation system, user can control and observe their house condition whenever they have internet connection.

Currently, the user accesses the system directly using public ip address. Through this thesis, the author intends to create a home automation system which can be accessed using private ip address. Therefore, a central control website needs to be built and an architecture called separated architecture is needed. Using this architecture, the reader is able to communicate with the board through the central website. Inside this separated architecture the author used other several components such as GlassFish application server, OpenMQ program, lexer, parser, RxTx java communication library, Code Vision and Panel Board itself.

Realized that the system need to be reliable for any condition, the author conduct two reliability tests; the first one is cutting the communication line which test the reliability between browser and the parser; the second test is cutting the board communication which test the reliability between the system and the panel board. The result was satisfied and the authors succeed to configure the board to overcome the reliability issue.

In conclusion, the authors succeed to create a home automation system that enables the reader to control and observe the reader’s home. Lastly, the separated architecture which the author used, can used to improve the performance of ISP while implemented

Keywords:
Home Automation System, Separated Architecture, GlassFish, OpenMQ, Lexer, Parser, RxTx, Code Vision, Reliability, ISP.